



Supplementary Appendix 3. American Physical Therapy Association. Clinical Practice Guideline on Physical Therapist Management of Patients Undergoing Total Knee Arthroplasty, 2019 – Study Quality Evaluation, Summary Data Tables, Detailed Data Tables.

This supplementary material has been provided by the authors to give readers additional information about their work.

Contents

PICO 1: Preoperative Physical Therapy (Exercise Programs and Education)	10
Quality Evaluation Tables PICO 1	10
QE - Intervention - Randomized	10
Summary of Findings.....	12
Figure 1: Summary of Findings-PICO 1 part 1: Preop PT vs No Preop PT	12
Figure 2: Summary of Findings-PICO 1 part 1: Preop PT vs No Preop PT continued	13
Figure 3: Summary of Findings-PICO 1 part 2: Preop PT vs Education	14
Figure 4: Summary of Findings-PICO 1 part 3: Education vs No Education	15
Figure 5: Summary of Findings-PICO 1 part 4: E-Learning vs. Standard Education	16
Figure 6: Summary of Findings-PICO 1 part 5: Home vs In-Patient PT	17
Figure 7: Summary of Findings-PICO 1 part 6: Preop PT and acupuncture vs standard exercise and advice leaflet education	18
Detailed Data Findings	19
Table 1: PICO 1 part 1- Preop PT vs No Preop PT: Complications.....	19
Table 2: PICO 1 part 1- Preop PT vs No Preop PT: Composite.....	21
Table 3: PICO 1 part 1- Preop PT vs No Preop PT: Function.....	22
Table 4: PICO 1 part 1- Preop PT vs No Preop PT: Other.....	41
Table 5: PICO 1 part 1- Preop PT vs No Preop PT: Pain.....	45
Table 6: PICO 1 part 2- Preop PT vs Education: Complications	50
Table 7: PICO 1 part 2- Preop PT vs Education: Composite	51
Table 8: PICO 1 part 2- Preop PT vs Education: Function	52
Table 9: PICO 1 part 2- Preop PT vs Education: Other	58
Table 10: PICO 1 part 2- Preop PT vs Education: Pain	63
Table 11: PICO 1 part 3- Education vs No Education: Complications	65
Table 12: PICO 1 part 3- Education vs No Education: Function	66
Table 13: PICO 1 part 3- Education vs No Education: Other	67
Table 14: PICO 1 part 3- Education vs No Education: Pain	68
Table 15: PICO 1 part 4- e-learning education vs standard education: Composite.....	69
Table 16: PICO 1 part 4- e-learning education vs standard education: Function.....	70
Table 17: PICO 1 part 4- e-learning education vs standard education: Other	71
Table 18: PICO 1 part 4- e-learning education vs standard education: Pain	73
Table 19: PICO 1 part 5- Home PT vs In Patient PT: Composite	74
Table 20: PICO 1 part 5- Home PT vs In Patient PT: Function	75
Table 21: PICO 1 part 5- Home PT vs In Patient PT: Other	76
Table 22: PICO 1 part 5- Home PT vs In Patient PT: Pain	77
Table 23: PICO 1 part 6- Preop PT vs Education: Composite	78
Table 24: PICO 1 part 6- Preop PT vs Education: Function	79
Table 25: PICO 1 part 6- Preop PT vs Education: Other.....	80
Table 26: PICO 1 part 6- Preop PT vs Education: Pain	81
PICO 2: CPM and Mobilization.....	82
Quality Evaluation Tables PICO 2	82
QE - Intervention - Observational	82

QE - Intervention - Randomized	82
Meta-Analysis Results	84
Figure 1: Meta-Analysis: CPM vs No CPM - Function	84
Figure 2: Meta-Analysis: CPM vs No CPM – Length of Hospital Stay.....	85
Summary of Findings.....	86
Figure 3: Summary of Findings-PICO 2 part 1: CPM vs No CPM.....	86
Figure 4: Summary of Findings-PICO 2 part 1: CPM vs No CPM continued	87
Figure 5: Summary of Findings-PICO 2 part 2: CPM vs CPM.....	88
Figure 6: Summary of Findings-PICO 2 part 3: Sling vs CPM.....	89
Figure 7: Summary of Findings-PICO 2 part 4: Mobilization vs CPM.....	90
Figure 8: Summary of Findings-PICO 2 part 5: Mobilization vs No Mobilization.....	92
Figure 9: Summary of Findings-PICO 2 part 6: Mobilization vs Mobilization	93
Figure 10: Summary of Findings-PICO 2 part 7: Bracing/Splinting vs No Bracing/Splinting	94
Figure 11: Summary of Findings-PICO 2 part 8: Bracing/Splinting vs Bracing/Splinting.....	95
Figure 12: Summary of Findings-PICO 2 part 9: Manual Intervention vs No Manual Intervention	96
Figure 13: Summary of Findings-PICO 2 part 10: Stretching vs Stretching.....	97
Figure 14: Summary of Findings-PICO 2 part 11: Resistive ROM vs No Resistive ROM	98
Detailed Data Findings	99
Table 1: PICO 2 part 1- CPM vs No CPM: Complications.....	99
Table 2: PICO 2 part 1- CPM vs No CPM: Composite.....	102
Table 3: PICO 2 part 1- CPM vs No CPM: Function.....	104
Table 4: PICO 2 part 1- CPM vs No CPM: Other	117
Table 5: PICO 2 part 1- CPM vs No CPM: Pain.....	120
Table 6: PICO 2 part 2- CPM vs CPM: Complications.....	123
Table 7: PICO 2 part 2- CPM vs CPM: Composite.....	124
Table 8: PICO 2 part 2- CPM vs CPM: Function.....	125
Table 9: PICO 2 part 2- CPM vs CPM: Other.....	127
Table 10: PICO 2 part 2- CPM vs CPM: Pain.....	128
Table 11: PICO 2 part 3- Sling vs CPM: Composite.....	129
Table 12: PICO 2 part 3- Sling vs CPM: Function.....	130
Table 13: PICO 2 part 3- Sling vs CPM: Other	136
Table 14: PICO 2 part 3- Sling vs CPM: Pain.....	137
Table 15: PICO 2 part 4- Mobilization vs CPM: Complications	138
Table 16: PICO 2 part 4- Mobilization vs CPM: Composite	140
Table 17: PICO 2 part 4- Mobilization vs CPM: Function	141
Table 18: PICO 2 part 4- Mobilization vs CPM: Other.....	146
Table 19: PICO 2 part 4- Mobilization vs CPM: Pain.....	147
Table 20: PICO 2 part 5- Mobilization vs No Mobilization: Complications	148
Table 21: PICO 2 part 5- Mobilization vs No Mobilization: Function	149
Table 22: PICO 2 part 5- Mobilization vs No Mobilization: Other.....	151
Table 23: PICO 2 part 5- Mobilization vs No Mobilization: Pain.....	152
Table 24: PICO 2 part 6- Mobilization vs Mobilization: Complications	153
Table 25: PICO 2 part 6- Mobilization vs Mobilization: Composite	154

Table 26: PICO 2 part 6- Mobilization vs Mobilization: Function	155
Table 27: PICO 2 part 6- Mobilization vs Mobilization: Pain	156
Table 28: PICO 2 part 7- Bracing/Splinting vs No Bracing/Splinting: Complications	157
Table 29: PICO 2 part 7- Bracing/Splinting vs No Bracing/Splinting: Function	158
Table 30: PICO 2 part 7- Bracing/Splinting vs No Bracing/Splinting: Other	159
Table 31: PICO 2 part 7- Bracing/Splinting vs No Bracing/Splinting: Pain	160
Table 32: PICO 2 part 8- Bracing/Splinting vs Bracing/Splinting: Complications.....	161
Table 33: PICO 2 part 8- Bracing/Splinting vs Bracing/Splinting: Function.....	163
Table 34: PICO 2 part 8- Bracing/Splinting vs Bracing/Splinting: Other	167
Table 35: PICO 2 part 9- Manual Intervention vs No Manual Intervention: Function	168
Table 36: PICO 2 part 9- Manual Intervention vs No Manual Intervention: Other	171
Table 37: PICO 2 part 9- Manual Intervention vs No Manual Intervention: Pain	172
Table 38: PICO 2 part 10- Stretching vs Stretching: Function.....	173
Table 39: PICO 2 part 11- Resistive ROM vs No Resistive ROM: Composite	175
Table 40: PICO 2 part 11- Resistive ROM vs No Resistive ROM: Function	176
PICO 3: Cryotherapy	177
Quality Evaluation Tables.....	177
QE - Intervention - Observational	177
QE - Intervention - Randomized	177
Meta-Analysis Results	179
Figure 1: Meta-Analysis: Cryotherapy Device vs. Standard Cold Packs - Pain.....	179
Summary of Findings.....	180
Figure 2: Summary of Findings-PICO 3 part 1: Cryotherapy vs No Cryotherapy	180
Figure 3: Summary of Findings-PICO 3 part 2: Cryotherapy vs Cryotherapy.....	181
Figure 4: Summary of Findings-PICO 3 part 3: Cryotherapy vs Taping/Bracing.....	182
Figure 5: Summary of Findings-PICO 3 part 4: TENS vs No TENS.....	183
Figure 6: Summary of Findings-PICO 3 part 5: Acupuncture vs No Acupuncture.....	184
Figure 7: Summary of Findings-PICO 3 part 6: Biofeedback for Pain and CPM vs CPM Only	185
Detailed Data Findings	186
Table 1: PICO 3 part 1- Cryotherapy vs No Cryotherapy: Complications.....	186
Table 2: PICO 3 part 1- Cryotherapy vs No Cryotherapy: Function.....	187
Table 3: PICO 3 part 1- Cryotherapy vs No Cryotherapy: Pain.....	188
Table 4: PICO 3 part 2- Cryotherapy vs Cryotherapy: Complications.....	189
Table 5: PICO 3 part 2- Cryotherapy vs Cryotherapy: Function.....	190
Table 6: PICO 3 part 2- Cryotherapy vs Cryotherapy: Other.....	194
Table 7: PICO 3 part 2- Cryotherapy vs Cryotherapy: Pain.....	196
Table 8: PICO 3 part 3- Cryotherapy vs Taping/Bracing: Pain.....	199
Table 11: PICO 3 part 4- TENS vs No TENS: Pain.....	200
Table 12: PICO 3 part 5- Acupuncture vs No Acupuncture: Complications	202
Table 13: PICO 3 part 5- Acupuncture vs No Acupuncture: Composite	204
Table 14: PICO 3 part 5- Acupuncture vs No Acupuncture: Function	205
Table 15: PICO 3 part 5- Acupuncture vs No Acupuncture: Pain.....	207
Table 16: PICO 3 part 6- Biofeedback for Pain and CPM vs CPM Only: Pain	212
PICO 4: Postoperative Physical Therapist Guidance	216

No Relevant Studies Found for this PICO Question.....	216
PICO 5: Movement Patter Retraining	217
Study Quality Evaluation Tables	217
QE - Intervention - Randomized	217
Summary of Findings.....	218
Figure 1: Summary of Findings-PICO 5 part 1: Functional Training vs No Functional Training	218
Figure 2: Summary of Findings-PICO 5 part 2: Balance Training vs No Balance Training.....	219
Figure 3: Summary of Findings-PICO 5 part 3: Gait Training vs No Gait Training.....	220
Detailed Data Tables	221
Table 1: PICO 5 part 1- Functional Training vs No Functional Training: Complications	221
Table 2: PICO 5 part 1- Functional Training vs No Functional Training: Composite	222
Table 3: PICO 5 part 1- Functional Training vs No Functional Training: Function	223
PICO 6: Swelling/Edema Management.....	228
Study Quality Evaluation tables.....	228
QE - Intervention - Randomized	228
Summary of Findings.....	229
Figure 1: Summary of Findings-PICO 6 part 3: Cryotherapy vs No Cryotherapy	229
Figure 2: Summary of Findings-PICO 6 part 4: Cryotherapy vs Cryotherapy.....	230
Figure 3: Summary of Findings-PICO 6 part 6: Positioning vs No Positioning	232
Figure 4: Summary of Findings-PICO 6 part 5: Positioning vs Positioning	233
Figure 5: Summary of Findings-PICO 6 part 7: Manual Lymphatic Drainage vs No Manual Lymphatic Drainage.....	234
Detailed Data Tables.....	235
Table 1: PICO 6 part 3- Cryotherapy vs No Cryotherapy: Complications.....	235
Table 2: PICO 6 part 3- Cryotherapy vs No Cryotherapy: Function.....	236
Table 3: PICO 6 part 3- Cryotherapy vs No Cryotherapy: Other.....	237
Table 4: PICO 6 part 4- Cryotherapy vs Cryotherapy: Complications.....	238
Table 5: PICO 6 part 4- Cryotherapy vs Cryotherapy: Function.....	239
Table 6: PICO 6 part 4- Cryotherapy vs Cryotherapy: Other.....	243
Table 7: PICO 6 part 5- Positioning vs Positioning: Complications	244
Table 8: PICO 6 part 5- Positioning vs Positioning: Function	246
Table 9: PICO 6 part 5- Positioning vs Positioning: Other	247
Table 10: PICO 6 part 6- Positioning vs No Positioning: Other	249
Table 11: PICO 6 part 7- Manual Lymphatic Drainage vs No Manual Lymphatic Drainage: Function.....	250
Table 12: PICO 6 part 7- Manual Lymphatic Drainage vs No Manual Lymphatic Drainage: Other.....	252
Table 13: PICO 6 part 7- Manual Lymphatic Drainage vs No Manual Lymphatic Drainage: Pain.....	256
PICO 7: Strength Training.....	257
Study Quality Evaluation Tables	257
QE - Intervention – Randomized NMES strength training	257
QE - Intervention – Randomized Non-NMES strength training	257
Summary of Findings.....	258
Figure 1: Summary of Findings-PICO 7 part 1: NMES vs No NMES.....	258
Figure 2: Summary of Findings-PICO 7 part 2: NMES vs NMES	259
Figure 3: Summary of Findings-PICO 7 part 3: Resistance Training vs No Resistance Training	260
Figure 4: Summary of Findings-PICO 7 part 4: Strength Training vs No Strength Training	261
Figure 5: Summary of Findings-PICO 7 part 5: Eccentric-Concentric Training vs Concentric Training.....	262
Detailed Data Tables.....	263
Table 1: PICO 7 part 1- NMES vs No NMES: Complications	263

Table 2: PICO 7 part 1- NMES vs No NMES: Composite	264
Table 3: PICO 7 part 1- NMES vs No NMES: Function	266
Table 4: PICO 7 part 1- NMES vs No NMES: Other.....	277
Table 5: PICO 7 part 1- NMES vs No NMES: Pain.....	282
Table 6: PICO 7 part 2- NMES vs NMES: Function	284
Table 7: PICO 7 part 2- NMES vs NMES: Other	286
Table 8: PICO 7 part 2- NMES vs NMES: Pain	287
Table 9: PICO 7 part 3- Resistance Training vs No Resistance Training: Composite	288
Table 10: PICO 7 part 3- Resistance Training vs No Resistance Training: Function	289
Table 11: PICO 7 part 3- Resistance Training vs No Resistance Training: Other	291
Table 12: PICO 7 part 3- Resistance Training vs No Resistance Training: Pain	292
Table 13: PICO 7 part 4- Strength Training vs No Strength Training: Complications	293
Table 14: PICO 7 part 4- Strength Training vs No Strength Training: Function	294
Table 15: PICO 7 part 4- Strength Training vs No Strength Training: Pain	299
Table 16: PICO 7 part 5- Eccentric-Concentric Training vs Concentric Training: Function.....	300
Table 17: PICO 7 part 5- Eccentric-Concentric Training vs Concentric Training: Other.....	302
Table 18: PICO 7 part 5- Eccentric-Concentric Training vs Concentric Training: Pain.....	303
PICO 8 – Prognostic Risk Factors.....	304
Study Quality Evaluation tables.....	304
Summary of Findings.....	307
Figure 1: Summary of Findings PICO 8 - Age.....	307
Figure 2: Summary of Findings PICO 8 - Age Continued	308
Figure 3: Summary of Findings PICO 8 - BMI.....	309
Figure 4: Summary of Findings PICO 8 - BMI continued	310
Figure 5: Summary of Findings PICO 8 - Comorbid conditions.....	311
Figure 6: Summary of Findings PICO 8 - Depression	312
Figure 7: Summary of Findings PICO 8 - Diabetes	313
Figure 8: Summary of Findings PICO 8 - Length of Stay.....	314
Figure 9: Summary of Findings PICO 8 - Preop ROM	315
Figure 10: Summary of Findings PICO 8 - Patient Support.....	316
Figure 11: Summary of Findings PICO 8 - Preop Function.....	317
Figure 12: Summary of Findings PICO 8 - Preop Strength.....	318
Figure 14: Summary of Findings PICO 8 - SES low vs High Education.....	318
Figure 15: Summary of Findings PICO 8 - SES Rural vs Urban	319
Figure 16: Summary of Findings PICO 8 - SES socioeconomic deprivation	319
Figure 17: Summary of Findings PICO 8 - Sex	320
Figure 18: Summary of Findings PICO 8 - Sex continued.....	321
Figure 19: Summary of Findings PICO 8 - Timing.....	322
Detailed Data Tables.....	323
Table 1: Age	323
Table 2: BMI	347
Table 3: Comorbid Conditions	397
Table 4: Depression.....	412
Table 5: Diabetes.....	417

Table 6: Length of Hospital Stay.....	426
Table 7: Patient Support	428
Table 8: Preop Function	430
Table 9: Preop ROM.....	451
Table 10: Preop Strength	470
Table 11: SES Low vs High Education	471
Table 12: SES Rural vs Urban residence.....	472
Table 13: SES Socioeconomic Deprivation	473
Table 14: Sex.....	474
Table 15: Timing	495
PICO 9: Postoperative Physical Therapy Programs	496
Study Quality Evaluation Tables	496
QE - Intervention - Observational	496
QE - Intervention - Randomized	496
Summary of Findings.....	498
Figure 1: Summary of Findings-PICO 9 part 1: Group PT vs No Group PT	498
Figure 2: Summary of Findings-PICO 9 part 2: Group Pt vs Home Pt	500
Figure 3: Summary of Findings-PICO 9 part 3: Clinic based PT vs Home PT	501
Figure 4: Summary of Findings-PICO 9 part 4: Home PT vs No Home PT	502
Figure 5: Summary of Findings-PICO 9 part 5: Supervised PT vs Home PT	504
Figure 6: Summary of Findings-PICO 9 part 6: Supervised PT and Home PT vs Supervised PT	505
Figure 7: Summary of Findings-PICO 9 part 7: Inpatient PT and Home PT vs Home PT	506
Figure 8: Summary of Findings-PICO 9 part 8: Inpatient PT vs No Inpatient PT	507
Figure 9: Summary of Findings-PICO 9 part 9: Outpatient PT vs Home and Outpatient PT	508
Figure 11: Summary of Findings-PICO 10 part 3: High Intensity PT vs No High Intensity PT.....	509
Figure 10: Summary of Findings-PICO 9 part 12: Virtual PT vs Non-virtual PT	510
Detailed Data Tables.....	511
Table 1: PICO 9 part 1- Group PT vs No Group PT: Complications	511
Table 2: PICO 9 part 1- Group PT vs No Group PT: Composite	512
Table 3: PICO 9 part 1- Group PT vs No Group PT: Function	514
Table 4: PICO 9 part 1- Group PT vs No Group PT: Other	521
Table 5: PICO 9 part 1- Group PT vs No Group PT: Pain.....	524
Table 6: PICO 9 part 2- Group Pt vs Home Pt: Composite.....	526
Table 7: PICO 9 part 2- Group Pt vs Home Pt: Function.....	527
Table 8: PICO 9 part 2- Group Pt vs Home Pt: Other	530
Table 9: PICO 9 part 2- Group Pt vs Home Pt: Pain.....	531
Table 10: PICO 9 part 3- Clinic based PT vs Home PT: Composite.....	532
Table 11: PICO 9 part 3- Clinic based PT vs Home PT: Function.....	533
Table 12: PICO 9 part 3- Clinic based PT vs Home PT: Pain.....	534
Table 13: PICO 9 part 4- Home PT vs No Home PT: Complications.....	535
Table 14: PICO 9 part 4- Home PT vs No Home PT: Composite.....	536
Table 15: PICO 9 part 4- Home PT vs No Home PT: Function.....	537
Table 16: PICO 9 part 4- Home PT vs No Home PT: Other	541
Table 17: PICO 9 part 4- Home PT vs No Home PT: Pain.....	542

Table 18: PICO 9 part 5- Supervised PT vs Home PT: Function.....	543
Table 19: PICO 9 part 5- Supervised PT vs Home PT: Other.....	544
Table 20: PICO 9 part 5- Supervised PT vs Home PT: Pain.....	546
Table 21: PICO 9 part 6- Supervised PT and Home PT vs Supervised PT: Complications.....	547
Table 22: PICO 9 part 6- Supervised PT and Home PT vs Supervised PT: Composite.....	549
Table 23: PICO 9 part 6- Supervised PT and Home PT vs Supervised PT: Function.....	550
Table 24: PICO 9 part 6- Supervised PT and Home PT vs Supervised PT: Other.....	553
Table 25: PICO 9 part 6- Supervised PT and Home PT vs Supervised PT: Pain.....	555
Table 26: PICO 9 part 7- Inpatient PT and Home PT vs Home PT: Complications.....	556
Table 27: PICO 9 part 7- Inpatient PT and Home PT vs Home PT: Composite.....	557
Table 28: PICO 9 part 7- Inpatient PT and Home PT vs Home PT: Function.....	559
Table 29: PICO 9 part 7- Inpatient PT and Home PT vs Home PT: Other.....	560
Table 30: PICO 9 part 8- Inpatient PT vs No Inpatient PT: Composite.....	561
Table 31: PICO 9 part 8- Inpatient PT vs No Inpatient PT: Other.....	562
Table 32: PICO 9 part 9- Outpatient PT vs Home and Outpatient PT: Complications.....	563
Table 33: PICO 9 part 9- Outpatient PT vs Home and Outpatient PT: Function.....	564
Table 34: PICO 9 part 9- Outpatient PT vs Home and Outpatient PT: Other.....	565
Table 35: PICO 9 part 9- Outpatient PT vs Home and Outpatient PT: Pain.....	566
Table 36: PICO 10 part 3- High Intensity PT vs No High Intensity PT: Complications.....	567
Table 37: PICO 10 part 3- High Intensity PT vs No High Intensity PT: Composite.....	568
Table 38: PICO 10 part 3- High Intensity PT vs No High Intensity PT: Function.....	569
Table 39: PICO 10 part 3- High Intensity PT vs No High Intensity PT: Other.....	576
Table 40: PICO 10 part 3- High Intensity PT vs No High Intensity PT: Pain.....	577
Table 41: PICO 9 part 12- Virtual PT vs Non-virtual PT: Complications.....	577
Table 42: PICO 9 part 12- Virtual PT vs Non-virtual PT: Composite.....	578
Table 43: PICO 9 part 12- Virtual PT vs Non-virtual PT: Function.....	579
Table 44: PICO 9 part 12- Virtual PT vs Non-virtual PT: Other.....	582
Table 45: PICO 9 part 12- Virtual PT vs Non-virtual PT: Pain.....	583
PICO 10: Accelerated Postoperative Rehabilitation.....	584
Study Quality Evaluation Tables.....	584
QE - Intervention - Observational.....	584
QE - Intervention - Randomized.....	584
Summary of Findings.....	585
Figure 1: Summary of Findings-PICO 10 part 1: Accelerated PT vs Non-accelerated PT.....	585
Figure 2: Summary of Findings-PICO 10 part 2: Early PT vs Late PT.....	586
Detailed Data Tables.....	587
Table 1: PICO 10 part 1- Accelerated PT vs Non-accelerated PT: Function.....	587
Table 2: PICO 10 part 1- Accelerated PT vs Non-accelerated PT: Other.....	589
Table 3: PICO 10 part 1- Accelerated PT vs Non-accelerated PT: Pain.....	591
Table 4: PICO 10 part 2- Early PT vs Late PT: Complications.....	592
Table 5: PICO 10 part 2- Early PT vs Late PT: Function.....	593
Table 6: PICO 10 part 2- Early PT vs Late PT: Other.....	594
PICO 11/12: Postop Discharge Setting.....	595
Study Quality Evaluation Tables.....	595

QE - Intervention - Randomized	595
QE - Intervention - Observational	595
Summary of Findings.....	596
Figure 1: Summary of Findings-PICO 11/12 part 1: Care Navigator vs No Care Navigator.....	596
Figure 2: Summary of Findings-PICO 11/12 part 2: Social Support vs No Social Support	597
Figure 3: Summary of Findings-PICO 11/12 part 3: Social Support vs Social Support	598
Figure 4: Summary of Findings-PICO 11/12 part 4: Inpatient Discharge vs SNF Discharge.....	599
Figure 5: Summary of Findings-PICO 11/12 part 5: Inpatient Discharge vs Home Discharge	600
Figure 6: Summary of Findings-PICO 11/12 part 6: Non-home Discharge vs Home Discharge	601
Detailed Data Tables.....	602
Table 1: PICO 12 part 1- Care Navigator vs No Care Navigator: Function.....	602
Table 2: PICO 12 part 1- Care Navigator vs No Care Navigator: Other.....	603
Table 3: PICO 12 part 1- Care Navigator vs No Care Navigator: Pain.....	604
Table 4: PICO 12 part 2- Social Support vs No Social Support: Function	605
Table 5: PICO 12 part 3- Social Support vs Social Support: Function	606
Table 6: PICO 11 part 4- Inpatient Discharge vs SNF Discharge: Complications.....	607
Table 7: PICO 11 part 4- Inpatient Discharge vs SNF Discharge: Composite.....	609
Table 8: PICO 11 part 4- Inpatient Discharge vs SNF Discharge: Other	610
Table 9: PICO 11 part 5- Inpatient Discharge vs Home Discharge: Complications	611
Table 10: PICO 11 part 5- Inpatient Discharge vs Home Discharge: Composite	613
Table 11: PICO 11 part 5- Inpatient Discharge vs Home Discharge: Function	614
Table 12: PICO 11 part 5- Inpatient Discharge vs Home Discharge: Other	615
Table 13: PICO 11 part 5- Inpatient Discharge vs Home Discharge: Pain	616
Table 14: PICO 11 part 6- Non-home Discharge vs Home Discharge: Complications	617

PICO 1: Preoperative Physical Therapy (Exercise Programs and Education)

Quality Evaluation Tables PICO 1

QE - Intervention - Randomized

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Beaupre, L. A., 2004	●	●	○	○	●	●	Include	Moderate Quality
Calatayud, J., 2017	●	◐	○	●	●	●	Include	High Quality
Culliton, S. E., 2018	●	◐	○	○	●	◐	Include	Moderate Quality
D'Lima, D. D., 1996	●	◐	○	●	●	●	Include	High Quality
Evgeniadis, G., 2008	●	●	◐	●	●	●	Include	High Quality
Gstoettner, M., 2011	●	●	○	●	●	●	Include	High Quality
Huang, Sw, 2012	○	○	○	●	●	◐	Include	Moderate Quality
Huber, E. O., 2015	●	●	○	●	●	○	Include	Moderate Quality
Mat Eil Ismail, M. S., 2016	○	◐	○	●	●	●	Include	Moderate Quality
Matassi, F., 2014	●	◐	○	●	●	●	Include	High Quality
McKay, C., 2012	●	●	◐	●	●	●	Include	High Quality
Mitchell, C., 2005	●	●	○	●	●	●	Include	High Quality
Rooks, D. S., 2006	●	●	○	●	●	●	Include	High Quality
Skoffer, B., 2016	●	●	○	●	●	●	Include	High Quality
Soni, A., 2012	●	●	○	●	●	○	Include	Moderate Quality
Topp, R., 2009	◐	◐	○	●	●	●	Include	Moderate Quality
Tungtrongjit, Y., 2012	●	◐	○	●	●	◐	Include	Moderate Quality
Villadsen, A., 2014	●	●	○	●	○	◐	Include	Moderate Quality

Summary of Findings

Figure 1: Summary of Findings-PICO 1 part 1: Preop PT vs No Preop PT

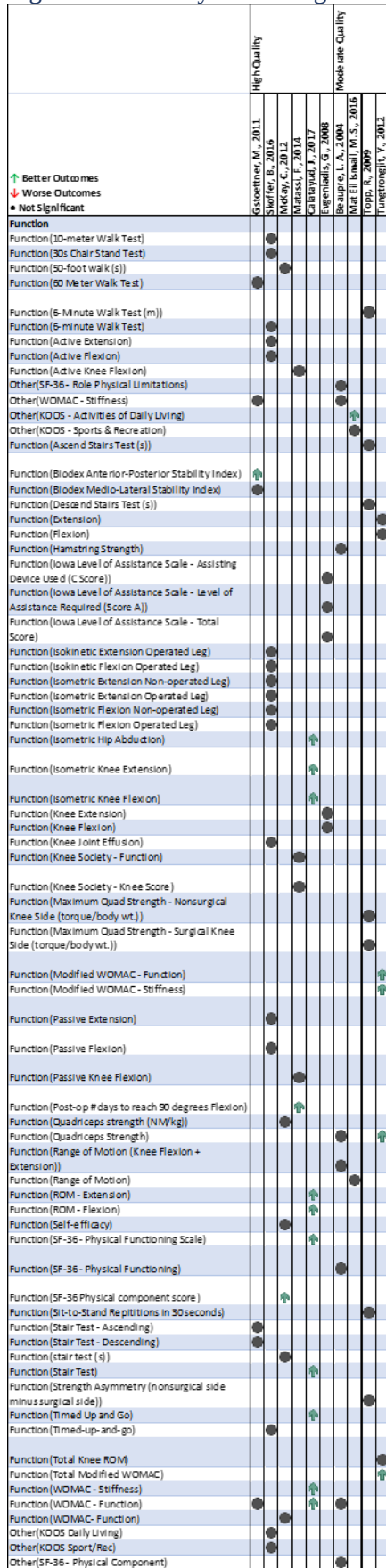


Figure 2: Summary of Findings-PICO 1 part 1: Preop PT vs No Preop PT continued

	High Quality					Moderate Quality		
	Gstoettner, W., 2011	Skofier, B., 2016	McKay, C., 2012	Matassi, F., 2014	Calatayud, J., 2017	Evgeniadis, G., 2008	Beaupre, L. A., 2004	Mat Eil Ismail, M. S., 2016
↑ Better Outcomes								
↓ Worse Outcomes								
● Not Significant								
Complications								
Adverse Event(Deep Vein Thrombosis)							●	
Adverse Event(Infection)							●	
Adverse Event(Pulmonary Emboli)							●	
Adverse Event(Readmission)							●	
Adverse Event(Transfer to Subacute Rehabilitation)							●	
Adverse Event(Anemia-induced NSTEMI)							●	
Adverse Event(Flexion Contracture)							●	
Adverse Event(Periprosthetic Fracture)							●	
Adverse Event(Surgical Site Infection)							●	
Adverse Event(Wound Dehiscence)							●	
Composite								
Function(Knee Society Score - Function)	●							
Other(Knee Society Score)	●							
Function(Biodex Overall Stability Index)	↑							
Other(WOMAC - Total)				↑				
Other								
Other(Acute Care LOS)							●	
Other(Readmission LOS)							●	
Other(SF-36 - General Health)							●	
Other(SF-36 - Mental Health Component)							●	
Other(SF-36 - Mental Health)							●	
Other(SF-36 - Role Limitations Emotional)							●	
Other(SF-36 - Vitality)							●	
Other(Total LOS)							●	
Other(Transfer LOS)							●	
Other(Health-related Quality of Life)	●							
Other(KOOS Quality of Life)	●							
Other(KOOS - Quality of Life)							●	
Other(KOOS Symptoms)	●							
Other(Length of Stay)				↑	↑			
Other(KOOS - Symptoms)								↑
Other(SF-36 - Social Functioning)							●	
Pain								
Pain(WOMAC - Pain)	●						●	
Pain(WOMAC Pain)			●					
Pain(Average Pain Over Past 14 Days)	●							
Pain(Current Pain)	●							
Pain(Worst Pain During Past 14 Days)	●							
Pain(KOOS Pain)	●							
Pain(SF-36 - Pain)							●	
Pain(Pain (VAS-cm) Directly after Descend Stairs Test)								●
Pain(Pain (VAS-cm) Directly after Ascend Stairs Test)								●
Pain(Pain (VAS-cm) Directly after Sit-to Stand test)								●
Pain(Pain (VAS-cm) Directly after 6-Minute Walk Test)								●
Pain(VAS - Pain)								↑
Pain(10-cm VAS - Pain)				↑				
Pain(Modified WOMAC - Pain)								↑
Pain(KOOS - Pain)							●	
Pain(WOMAC- Pain)				↑				

Figure 3: Summary of Findings-PICO 1 part 2: Preop PT vs Education

	High Quality		Moderate Quality
	Rooks, D. S., 2006	D'Lima, D. D., 1996	Huber, E. O., 2015 Villadsen, A., 2014
↑ Better Outcomes			
↓ Worse Outcomes			
● Not Significant			
Complications			
Adverse Event(Deep Surgical Infection)		●	
Adverse Event(Intestinal Pseudoobstruction)		●	
Adverse Event(Sleep Apnea)		●	
Adverse Event(Manipulation for Restricted ROM)		●	
Composite			
Other(Hospital for Special Surgery Knee Rating)		●	
Function			
Function(1-repetition maximum (kg))	●		
Function(20 Meter Walk Test)			●
Function(Adapted NHANES III METs)			●
Other(KOOS - Sport & Rec)			●
Other(SF-36 - Role Limitations Physical)			●
Function(Chair Stand Test)			●
Function(EQ5D - Index)			●
Function(EQ5D - VAS)			↑
Function(Functional Reach (cm))	●		
Function(Knee-bending in 30s)			●
Function(KOOS - ADL Function)			●
Function(KOOS - ADL)			↑
Function(KOOS - Sport and Rec)			●
Function(KOOS - Symptoms)			●
Function(METs 7 Day)			●
Function(Muscle Strength Knee Extension Operated Leg)			●
Function(Muscle Strength Knee Flexion Operated Leg)			●
Function(ROM - Knee Extension Operated Leg)			●
Function(ROM - Knee Flexion Operated Leg)			●
Function(SF-36 - Physical Functioning)			●
Function(SF-36 Limitation Physical)	●		
Function(SF-36 Physical Function)	●		
Function(Steps (Daily Average))			●
Function(Timed Up and Go (s))	●		
Function(Timed-up-and-go)			●
Function(WOMAC Function)	●		
Other			
Other(SF-36 - Mental Health)			●
Other(KOOS - Quality of Life)			●
Other(KOOS - Symptoms)			●
Other(SF-36 Role Limitations Emotional)			●
Other(SF-36 General Health)			●
Other(SF-36 Vitality)			●
Other(SF-36 Social Functioning)			●
Other(EQ-5D - Self-care)			●
Other(EQ- Visual Analog Scale)			●
Other(EQ-5D - Anxiety/Depression)			●
Other(Mean Length of Stay)		●	
Pain			
Pain(WOMAC Pain)	●		
Pain(KOOS - Pain)			↑
Other(SF-36 Bodily Pain)			●
Other(EQ-5D Pain/Discomfort)			●
Pain(SF-36 Pain)	↑		

Figure 4: Summary of Findings-PICO 1 part 3: Education vs No Education

	Moderate Quality
	Huang, Sw, 2012
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Complications	
Adverse Event(DVT)	●
Adverse Event(Infection)	●
Function	
Function(Ambulation Status)	●
Function(Knee Range of Motion)	●
Other	
Other(Length of Stay)	↑
Pain	
Pain(VAS - Pain)	●

Figure 5: Summary of Findings-PICO 1 part 4: E-Learning vs. Standard Education

	Moderate Quality
 Better Outcomes  Worse Outcomes  Not Significant	Culliton, S. E., 2018
Composite	
Other(SF-12 Mental Health Composite)	
Function(SF-12 Physical Composite Score)	
Function	
Function(KOOS - ADL)	
Function(KOOS - Sport and Rec)	
Function(KSS - Function)	
Function(UCLA Activity Score)	
Other	
Other(KOOS - Symptoms)	
Other(Post-op Expectations Not Met)	
Other(KSS - Expectations)	
Other(KSS - Patient Satisfaction)	
Other(Social Role Participation Questionnaire - Importance)	
Other(Patient Acceptable Symptom State - Satisfaction)	
Other(Social Role Participation Questionnaire - Performance)	
Other(HAD - Anxiety)	
Other(Social Role Participation Questionnaire - Limitations)	
Other(KOOS - QoL)	
Other(HAD - Depression)	
Other(KSS - Symptoms)	
Pain	
Pain(KOOS - Pain)	
Pain(Pain Catastrophizing Scale - Rumination)	
Pain(Pain Catastrophizing Scale - Helplessness)	
Pain(Pain Catastrophizing Scale - Magnification)	

Figure 6: Summary of Findings-PICO 1 part 5: Home vs In-Patient PT

	High Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Mitchell, C., 2005
Composite	
Function(SF-36; SF-6D)	●
Function	
Function(SF-36; Role Physical)	●
Function(SF-36; physical function)	●
Function(WOMAC- Physical Function)	●
Function(WOMAC- Stiffness)	●
Other	
Other(Inpatient stay (days))	●
Function(SF-36; Energy)	●
Function(SF-36; General Health)	●
Function(SF-36; Mental Health)	●
Function(SF-36; Role Emotional)	●
Function(SF-36; Social Functioning)	●
Pain	
Pain(SF-36; Bodily Pain)	●
Function(WOMAC- Pain)	●

Figure 7: Summary of Findings-PICO 1 part 6: Preop PT and acupuncture vs standard exercise and advice leaflet education

	Moderate Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Soni, A., 2012
Composite	
Other(Oxford Knee Score)	●
Function	
Function(50-meter Timed Walk)	●
Other	
Other(Hospital Anxiety Depression Score - Anxiety)	●
Other(Hospital Anxiety and Depression Scores - Depression)	●
Pain	
Pain(VAS - Pain)	●

Detailed Data Findings

Table 1: PICO 1 part 1- Preop PT vs No Preop PT: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2004	Moderate Quality	Adverse Event(Deep Vein Thrombosis)	1 year	55	60	Community Physical Therapy	Usual Care (Control)	RR	5.45%	10.00%	0.55(0.14,2.08)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Adverse Event(Infection)	1 year	55	60	Community Physical Therapy	Usual Care (Control)	RR	3.64%	5.00%	0.73(0.13,4.19)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Adverse Event(Pulmonary Emboli)	1 year	55	60	Community Physical Therapy	Usual Care (Control)	RR	3.64%	3.33%	1.09(0.16,7.48)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Adverse Event(Readmission)	1 year	55	60	Community Physical Therapy	Usual Care (Control)	RR	9.09%	10.00%	0.91(0.29,2.81)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Adverse Event(Transfer to Subacute Rehabilitation)	Discharge	55	60	Community Physical Therapy	Usual Care (Control)	RR	41.82%	51.67%	0.81(0.54,1.20)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Adverse Event(Anemia-induced NSTEMI)	Post-Op	24	26	Preop PT	No Preop PT	RD	0.00%	3.85%	-0.04(-0.11,0.04)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Adverse Event(Flexion Contracture)	Post-Op	24	26	Preop PT	No Preop PT	RD	0.00%	3.85%	-0.04(-0.11,0.04)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Adverse Event(Periprosthetic Fracture)	Post-Op	24	26	Preop PT	No Preop PT	RD	0.00%	3.85%	-0.04(-0.11,0.04)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Adverse Event(Surgical Site Infection)	Post-Op	24	26	Preop PT	No Preop PT	RR	8.33%	7.69%	1.08(0.17,7.10)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Adverse Event(Wound Dehiscence)	Post-Op	24	26	Preop PT	No Preop PT	RD	0.00%	3.85%	-0.04(-0.11,0.04)	Not Significant (P-value>.05)

Table 2: PICO 1 part 1- Preop PT vs No Preop PT: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Calatayud, J., 2017	High Quality	Other(WOMAC - Total)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	28.4(3.35)	42.4(3.35)	-14(-15.98,-12.02)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Other(WOMAC - Total)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	25(3.35)	30.7(3.59)	-5.7(-7.75,-3.65)	Treatment 1 Significant (P-value<.05)
Gstoettner, M., 2011	High Quality	Other(Knee Society Score)	6 weeks	15	20	Preop Proprioceptive Training	Control	MeanDiff	82.5(19.20)	80.6(17.50)	1.9(-10.48,14.28)	Not Significant (P-value>.05)
Gstoettner, M., 2011	High Quality	Function(Biodex Overall Stability Index)	6 weeks	15	20	Preop Proprioceptive Training	Control	MeanDiff	2.2(0.70)	2.9(0.70)	-0.7(-1.17,-0.23)	Treatment 1 Significant (P-value<.05)

Table 3: PICO 1 part 1- Preop PT vs No Preop PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2004	Moderate Quality	Function(Hamstring Strength)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	18(7.00)	18(6.00)	0(-2.46,2.46)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(Hamstring Strength)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	19(6.00)	20(7.00)	-1(-3.44,1.44)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(Hamstring Strength)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	21(8.00)	21(6.00)	0(-2.68,2.68)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(Quadriceps Strength)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	27(10.00)	27(8.00)	0(-3.43,3.43)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(Quadriceps Strength)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	29(9.00)	28(9.00)	1(-2.39,4.39)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(Quadriceps Strength)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	30(10.00)	29(8.00)	1(-2.43,4.43)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(Range of Motion (Knee Flexion + Extension))	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	93(16.00)	93(15.00)	0(-5.85,5.85)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(Range of Motion (Knee Flexion + Extension))	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	95(14.00)	96(17.00)	-1(-6.82,4.82)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(Range of Motion (Knee Flexion + Extension))	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	99(16.00)	103(16.00)	-4(-10.02,2.02)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2004	Moderate Quality	Function(SF-36 - Physical Functioning)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	43(20.00)	49(22.00)	-6(-13.89,1.89)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(SF-36 - Physical Functioning)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	52(18.00)	48(24.00)	4(-3.91,11.91)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(SF-36 - Physical Functioning)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	53(22.00)	58(25.00)	-5(-13.82,3.82)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(WOMA C - Function)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	73(17.00)	73(15.00)	0(-6.06,6.06)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(WOMA C - Function)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	78(15.00)	74(15.00)	4(-1.64,9.64)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Function(WOMA C - Function)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	77(14.00)	77(16.00)	0(-5.63,5.63)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Physical Component)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	35(9.00)	35(8.00)	0(-3.22,3.22)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Physical Component)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	37(8.00)	37(10.00)	0(-3.38,3.38)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Physical Component)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	38(8.00)	41(10.00)	-3(-6.38,0.38)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Social Functioning)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	70(21.00)	75(24.00)	-5(-13.45,3.45)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Social Functioning)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	80(21.00)	76(24.00)	4(-4.45,12.45)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Social Functioning)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	84(22.00)	85(0.00)	-1(-7.04,5.04)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(WOMAC - Stiffness)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	62(17.00)	61(18.00)	1(-5.57,7.57)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(WOMAC - Stiffness)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	82(13.00)	80(16.00)	2(-3.45,7.45)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(WOMAC - Stiffness)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	67(18.00)	71(21.00)	-4(-11.32,3.32)	Not Significant (P-value>.05)
Calatayud, J., 2017	High Quality	Function(Isometric Knee Extension)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	8.9(7.42)	7.7(7.66)	1.2(-3.26,5.66)	Not Significant (P-value>.05)
Calatayud, J., 2017	High Quality	Function(ROM - Flexion)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	101.2(8.38)	96.4(8.38)	4.8(-0.15,9.75)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(Isometric Hip Abduction)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	7.7(0.96)	4.8(0.96)	2.9(2.33, 3.47)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(Isometric Hip Abduction)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	7.8(0.96)	5(0.96)	2.8(2.23, 3.37)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(Isometric Knee Extension)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	22.8(7.42)	14.3(7.66)	8.5(4.04, 12.96)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(Isometric Knee Flexion)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	8.7(1.44)	3.9(1.20)	4.8(4.02, 5.58)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(Isometric Knee Flexion)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	9.4(1.20)	4.4(1.44)	5(4.22,5.78)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Calatayud, J., 2017	High Quality	Function(ROM - Extension)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	11.1(2.63)	16.9(2.39)	-5.8(-7.29,-4.31)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(ROM - Extension)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	8.2(2.63)	13.9(2.39)	-5.7(-7.19,-4.21)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(ROM - Flexion)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	88.8(8.38)	82.3(8.38)	6.5(1.55, 11.45)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(SF-36 - Physical Functioning Scale)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	51.4(2.39)	46.9(2.63)	4.5(3.01, 5.99)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(SF-36 - Physical Functioning Scale)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	55.7(2.63)	53(2.63)	2.7(1.15, 4.25)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(Stair Test)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	9.1(1.44)	12.7(1.68)	-3.6(-4.52,-2.68)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(Stair Test)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	7.9(1.44)	12.1(1.68)	-4.2(-5.12,-3.28)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(Timed Up and Go)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	7.3(0.72)	9.4(0.72)	-2.1(-2.53,-1.67)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(Timed Up and Go)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	7(0.72)	8.7(0.96)	-1.7(-2.20,-1.20)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(WOMAC - Function)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	20.5(2.39)	31.6(2.15)	-11.1(-12.44,-9.76)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(WOMAC - Function)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	18.8(2.15)	22.7(2.39)	-3.9(-5.24,-2.56)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Calatayud, J., 2017	High Quality	Function(WOMAC - Stiffness)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	2.8(0.72)	4.2(0.48)	-1.4(-1.76,-1.04)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Function(WOMAC - Stiffness)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	2.2(0.72)	3.2(0.48)	-1(-1.36,-0.64)	Treatment 1 Significant (P-value<.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Total Score)	3 days	24	24	Preop PT	Standard Care (Control)	MeanDiff	29.5(2.90)	28.9(3.30)	0.6(-1.16,2.36)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Level of Assistance Required (Score A))	3 days	24	24	Preop PT	Standard Care (Control)	MeanDiff	10.6(2.70)	9.8(2.90)	0.8(-0.79,2.39)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Knee Extension)	2 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	-5.45(3.80)	-6.5(3.83)	1.05(-1.11,3.21)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Knee Flexion)	2 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	65.9(6.36)	70.25(11.30)	-4.35(-9.54,0.84)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Total Score)	2 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	19.7(2.45)	20.3(1.97)	-0.6(-1.86,0.66)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Level of Assistance Required (Score A))	2 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	2.3(2.10)	2(1.40)	0.3(-0.71,1.31)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Level of Assistance Required (Score A))	6 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	0.72(0.65)	0.58(0.67)	0.14(-0.23,0.51)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Total Score)	6 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	9.82(0.98)	10.08(1.16)	-0.26(-0.87,0.35)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Level of Assistance Required (Score A))	10 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	0(0.00)	0(0.00)	0(0.00,0.00)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Knee Extension)	10 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	-7.45(5.56)	-7(3.95)	-0.45(-3.18,2.28)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Total Score)	10 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	4.65(0.58)	4.87(0.73)	-0.22(-0.59,0.15)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Knee Flexion)	10 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	73.3(6.7)	76.08(10.30)	-2.78(-7.73,2.17)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Knee Flexion)	14 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	80.73(6.70)	80.42(10.20)	0.31(-4.57,5.19)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Knee Extension)	14 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	-5.7(4.27)	-6.42(3.60)	0.72(-1.51,2.95)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Level of Assistance Required (Score A))	14 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	0(0.00)	0(0.00)	0(0.00,0.00)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Total Score)	14 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	0.31(0.49)	0.38(0.59)	-0.07(-0.38,0.24)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Assisting Device Used (C Score))	3 days	24	24	Preop PT	Standard Care (Control)	MeanDiff	18.9(0.80)	19.1(0.90)	-0.2(-0.68,0.28)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Assisting Device Used (C Score))	6 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	9.1(0.94)	9.5(0.90)	-0.4(-0.92,0.12)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Assisting Device Used (C Score))	10 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	4.65(0.59)	4.87(0.38)	-0.22(-0.50,0.06)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Assisting Device Used (C Score))	14 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	0.31(0.49)	0.38(0.56)	-0.07(-0.37,0.23)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Assisting Device Used (C Score))	2 weeks	24	24	Preop PT	Standard Care (Control)	MeanDiff	17.4(0.70)	18.3(0.90)	-0.9(-1.36,-0.44)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Gstoettner, M., 2011	High Quality	Function(Knee Society Score - Function)	6 weeks	15	20	Preop Proprioceptive Training	Control	MeanDiff	74.3(14.60)	73.9(15.90)	0.4(-9.76,10.56)	Not Significant (P-value>.05)
Gstoettner, M., 2011	High Quality	Function(Stair Test - Descending)	6 weeks	15	20	Preop Proprioceptive Training	Control	MeanDiff	34.6(17.40)	30.4(10.20)	4.2(-5.68,14.08)	Not Significant (P-value>.05)
Gstoettner, M., 2011	High Quality	Function(WOMAC - Function)	6 weeks	15	20	Preop Proprioceptive Training	Control	MeanDiff	1.2(1.20)	1.9(1.00)	-0.7(-1.45,0.05)	Not Significant (P-value>.05)
Gstoettner, M., 2011	High Quality	Function(60 Meter Walk Test)	6 weeks	15	20	Preop Proprioceptive Training	Control	MeanDiff	56.8(17.70)	51.8(9.90)	5(-4.95,14.95)	Not Significant (P-value>.05)
Gstoettner, M., 2011	High Quality	Function(Stair Test - Ascending)	6 weeks	15	20	Preop Proprioceptive Training	Control	MeanDiff	33.8(13.80)	30(8.40)	3.8(-4.09,11.69)	Not Significant (P-value>.05)
Gstoettner, M., 2011	High Quality	Function(Biodex Medio-Lateral Stability Index)	6 weeks	15	20	Preop Proprioceptive Training	Control	MeanDiff	1.6(0.70)	1.9(0.60)	-0.3(-0.74,0.14)	Not Significant (P-value>.05)
Gstoettner, M., 2011	High Quality	Other(WOMAC - Stiffness)	6 weeks	15	20	Preop Proprioceptive Training	Control	MeanDiff	1.5(1.50)	1.1(1.50)	0.4(-0.60,1.40)	Not Significant (P-value>.05)
Gstoettner, M., 2011	High Quality	Function(Biodex Anterior-Posterior Stability Index)	6 weeks	15	20	Preop Proprioceptive Training	Control	MeanDiff	1.7(0.40)	2.3(0.60)	-0.6(-0.93,-0.27)	Treatment 1 Significant (P-value<.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Function(Range of Motion)	6 weeks	24	26	Preop PT	No Preop PT	MeanDiff	94.58(16.35)	89.23(16.34)	5.35(-3.72,14.42)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Function(Range of Motion)	3 months	24	26	Preop PT	No Preop PT	MeanDiff	108.75(10.17)	102.31(10.17)	6.44(0.80,12.08)	Not Significant (P-value>.05)
Matassi, F., 2014	High Quality	Function(Passive Knee Flexion)	6 weeks	.	.	Yes Preop Exercise	No Preop Exercise	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Matassi, F., 2014	High Quality	Function(Passive Knee Flexion)	6 months	.	.	Yes Preop Exercise	No Preop Exercise	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Matassi, F., 2014	High Quality	Function(Passive Knee Flexion)	1 year	.	.	Yes Preop Exercise	No Preop Exercise	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Matassi, F., 2014	High Quality	Function(Knee Society - Function)	6 weeks	.	.	Yes Preop Exercise	No Preop Exercise	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Matassi, F., 2014	High Quality	Function(Active Knee Flexion)	6 weeks	.	.	Yes Preop Exercise	No Preop Exercise	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Matassi, F., 2014	High Quality	Function(Knee Society - Knee Score)	6 weeks	.	.	Yes Preop Exercise	No Preop Exercise	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Matassi, F., 2014	High Quality	Function(Active Knee Flexion)	6 months	.	.	Yes Preop Exercise	No Preop Exercise	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Matassi, F., 2014	High Quality	Function(Knee Society - Function)	6 months	.	.	Yes Preop Exercise	No Preop Exercise	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Matassi, F., 2014	High Quality	Function(Knee Society - Knee Score)	6 months	.	.	Yes Preop Exercise	No Preop Exercise	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Matassi, F., 2014	High Quality	Function(Knee Society - Function)	1 year	.	.	Yes Preop Exercise	No Preop Exercise	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Matassi, F., 2014	High Quality	Function(Active Knee Flexion)	1 year	.	.	Yes Preop Exercise	No Preop Exercise	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Matassi, F., 2014	High Quality	Function(Knee Society - Knee Score)	1 year	.	.	Yes Preop Exercise	No Preop Exercise	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Matassi, F., 2014	High Quality	Function(Post-op # days to reach 90 degrees Flexion)	Post-Op	61	61	Yes Preop Exercise	No Preop Exercise	MeanDiff	5.8(2.10)	6.9(1.90)	-1.1(-1.81,-0.39)	Treatment 1 Significant (P-value<.05)
McKay, C., 2012	High Quality	Function(Self-efficacy)	Post-Op	10	11	lower body experimental program	upper body control program	MeanDiff	141.7(26.31)	141.08(33.84)	0.62(-25.18,26.42)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(Quadriceps strength (NM/kg))	Post-Op	10	11	lower body experimental program	upper body control program	MeanDiff	1.03(0.57)	0.81(0.52)	0.22(-0.25,0.69)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(SF-36 Physical component score)	Post-Op	10	11	lower body experimental program	upper body control program	MeanDiff	29.66(7.99)	25.61(5.77)	4.05(-1.96,10.06)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(WOMAC- Function)	Post-Op	10	11	lower body experimental program	upper body control program	MeanDiff	28.5(12.57)	30.5(13.68)	-2(-13.23,9.23)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(50-foot walk (s))	Post-Op	10	11	lower body experimental program	upper body control program	MeanDiff	11.38(5.95)	12.63(3.51)	-1.25(-5.48,2.98)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(stair test (s))	Post-Op	10	11	lower body experimental program	upper body control program	MeanDiff	26.86(24.89)	23.28(11.70)	3.58(-13.33,20.49)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(50-foot walk (s))	6 weeks	9	10	lower body experimental program	upper body control program	MeanDiff	14.23(7.55)	13.11(3.30)	1.12(-4.22,6.46)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(WOMAC- Function)	6 weeks	9	10	lower body experimental program	upper body control program	MeanDiff	18.1(11.85)	19.17(15.01)	-1.07(-13.17,11.03)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(Self-efficacy)	6 weeks	9	10	lower body experimental program	upper body control program	MeanDiff	159.2(31.82)	158.08(25.54)	1.12(-25.01,27.25)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(stair test (s))	6 weeks	9	10	lower body experimental program	upper body control program	MeanDiff	30.53(24.85)	26.72(12.05)	3.81(-14.06,21.68)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
McKay, C., 2012	High Quality	Function(Quadriceps strength (NM/kg))	6 weeks	9	10	lower body experimental program	upper body control program	MeanDiff	0.6(0.39)	0.57(0.29)	0.03(-0.28,0.34)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(SF-36 Physical component score)	6 weeks	9	10	lower body experimental program	upper body control program	MeanDiff	31.79(8.25)	29.8(6.71)	1.99(-4.82,8.80)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(Self-efficacy)	12 weeks	7	10	lower body experimental program	upper body control program	MeanDiff	178.1(19.60)	166.58(25.99)	11.52(-10.17,33.21)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(WOMAC- Function)	12 weeks	7	10	lower body experimental program	upper body control program	MeanDiff	13.1(11.56)	14.33(15.42)	-1.23(-14.06,11.60)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(50-foot walk (s))	12 weeks	7	10	lower body experimental program	upper body control program	MeanDiff	11.8(5.66)	11.82(2.97)	-0.02(-4.60,4.56)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(Quadriceps strength (NM/kg))	12 weeks	7	10	lower body experimental program	upper body control program	MeanDiff	0.77(0.56)	0.74(0.35)	0.03(-0.44,0.50)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(stair test (s))	12 weeks	7	10	lower body experimental program	upper body control program	MeanDiff	26.99(26.73)	22.18(10.98)	4.81(-16.13,25.75)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Function(SF-36 Physical component score)	12 weeks	7	10	lower body experimental program	upper body control program	MeanDiff	41.25(10.06)	14.33(15.42)	26.92(14.80,39.04)	Treatment 1 Significant (P-value<.05)
Skoffer, B., 2016	High Quality	Function(30s Chair Stand Test)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-6.4(.)	-8.2(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(Timed-up-and-go)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	5.8(.)	8.3(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(6-minute Walk Test)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-156.5(.)	-183.1(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Skoffer, B., 2016	High Quality	Function(10-meter Walk Test)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	5(.)	6.6(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(Timed-up-and-go)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-0.7(.)	0.8(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(30s Chair Stand Test)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	2.5(.)	-1.1(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(10-meter Walk Test)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	. %	0.7(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(6-minute Walk Test)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	16.8(.)	-33.5(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(Isokineti c Extension Operated Leg)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-0.1(.)	-0.3(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(10-meter Walk Test)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-0.6(.)	-0.1(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(6-minute Walk Test)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	41.2(.)	8.4(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(Isokineti c Extension Operated Leg)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0(.)	-0.2(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(30s Chair Stand Test)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	3.9(.)	0.2(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(Timed-up-and-go)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-1.2(.)	-0.1(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Skoffe, B., 2016	High Quality	Function(Isometric Extension Non-operated Leg)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0.2(.)	0.1(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Isometric Flexion Non-operated Leg)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0.1(.)	0.1(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Isometric Flexion Operated Leg)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0.1(.)	0(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Isometric Extension Non-operated Leg)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0.2(.)	0(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Isometric Extension Operated Leg)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-0.2(.)	-0.4(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Isometric Flexion Non-operated Leg)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0.1(.)	0(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Isokinetic Flexion Operated Leg)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0(.)	-0.1(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Isometric Extension Operated Leg)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0(.)	-0.3(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Isokinetic Flexion Operated Leg)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0.1(.)	-0.1(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Isometric Flexion Non-operated Leg)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0.1(.)	0(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Isometric Extension Non-operated Leg)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0.1(.)	0(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Skoffer, B., 2016	High Quality	Function(Isometric Flexion Operated Leg)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0.1(.)	-0.1(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(KOOS Daily Living)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-2.7(.)	-6(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(KOOS Sport/Rec)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-5.2(.)	-7.6(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(KOOS Daily Living)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	17.2(.)	14(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(KOOS Sport/Rec)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	12.7(.)	-0.9(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(KOOS Daily Living)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	24.1(.)	21.1(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(KOOS Sport/Rec)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	26.5(.)	19.6(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(Passive Extension)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	1.2(.)	1.9(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(Active Extension)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	1.6(.)	1.7(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(Knee Joint Effusion)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	4.4(.)	4.1(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Function(Passive Flexion)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-36.8(.)	-34.3(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Skoffe, B., 2016	High Quality	Function(Active Flexion)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-35.5(.)	-32.6(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Active Flexion)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-12(.)	-12.3(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Passive Flexion)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-10.5(.)	-10.1(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Active Extension)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-0.9(.)	-0.2(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Knee Joint Effusion)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	1.8(.)	1.4(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Passive Extension)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-2.4(.)	-1.4(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Knee Joint Effusion)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	1.5(.)	1.1(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Active Flexion)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-7.7(.)	-7.7(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Active Extension)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-2.8(.)	-1.3(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Passive Extension)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-3.2(.)	-2.1(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Function(Passive Flexion)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-6.7(.)	-5.2(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Topp, R., 2009	Moderate Quality	Function(Descend Stairs Test (s))	1 month	26	28	Yes Preop PT	No Preop PT	Author Reported	13.21(.)	11.79(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Function(6-Minute Walk Test (m))	1 month	26	28	Yes Preop PT	No Preop PT	Author Reported	1191(.)	1166.71(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Function(Ascend Stairs Test (s))	1 month	26	28	Yes Preop PT	No Preop PT	Author Reported	11.98(.)	10.39(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Function(Sit-to-Stand Repititions in 30 seconds)	1 month	26	28	Yes Preop PT	No Preop PT	Author Reported	11.46(.)	10.36(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Function(Sit-to-Stand Repititions in 30 seconds)	3 months	26	28	Yes Preop PT	No Preop PT	Author Reported	12.87(.)	11.25(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Function(Ascend Stairs Test (s))	3 months	26	28	Yes Preop PT	No Preop PT	Author Reported	8.44(.)	7.45(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Function(6-Minute Walk Test (m))	3 months	26	28	Yes Preop PT	No Preop PT	Author Reported	1337(.)	1365(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Function(Descend Stairs Test (s))	3 months	26	28	Yes Preop PT	No Preop PT	Author Reported	8.6(.)	8.06(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Function(Strength Asymmetry (nonsurgical side minus surgical side))	1 month	26	28	Yes Preop PT	No Preop PT	Author Reported	40.77(.)	51.04(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Function(Maximum Quad Strength - Nonsurgical Knee Side (torque/body wt.))	1 month	26	28	Yes Preop PT	No Preop PT	Author Reported	83.92(.)	95.45(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Topp, R., 2009	Moderate Quality	Function(Maximum Quad Strength - Surgical Knee Side (torque/body wt.))	1 month	26	28	Yes Preop PT	No Preop PT	Author Reported	43.15(.)	44.41(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Function(Maximum Quad Strength - Nonsurgical Knee Side (torque/body wt.))	3 months	26	28	Yes Preop PT	No Preop PT	Author Reported	90.26(.)	94.73(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Function(Maximum Quad Strength - Surgical Knee Side (torque/body wt.))	3 months	26	28	Yes Preop PT	No Preop PT	Author Reported	62.27(.)	60.74(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Function(Strength Asymmetry (nonsurgical side minus surgical side))	3 months	26	28	Yes Preop PT	No Preop PT	Author Reported	28(.)	33.98(.)	NA	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Modified WOMAC - Function)	6 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	15.8(15.00)	17.1(11.80)	-1.3(-8.13,5.53)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Total Modified WOMAC)	6 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	18.7(17.90)	22(14.10)	-3.3(-11.45,4.85)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Modified WOMAC - Stiffness)	6 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	0.1(0.40)	0.2(0.60)	-0.1(-0.36,0.16)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Total Knee ROM)	1 month	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	102(19.50)	95.6(18.40)	6.4(-3.19,15.99)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Extension)	1 month	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	2.1(5.30)	1.8(4.30)	0.3(-2.14,2.74)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Tungtrongjit, Y., 2012	Moderate Quality	Function(Flexion)	1 month	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	104.1(17.20)	97.8(17.80)	6.3(-2.56,15.16)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Flexion)	3 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	113.7(13.80)	109.1(17.30)	4.6(-3.32,12.52)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Total Knee ROM)	3 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	113.4(13.60)	109.3(17.30)	4.1(-3.77,11.97)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Extension)	3 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	0.3(1.80)	0.2(0.90)	0.1(-0.62,0.82)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Extension)	6 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	0(0.00)	1(4.00)	-1(-2.43,0.43)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Flexion)	6 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	117.9(13.80)	113.6(17.00)	4.3(-3.54,12.14)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Quadriceps Strength)	6 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	8.4(3.40)	7.2(4.00)	1.2(-0.68,3.08)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Total Knee ROM)	6 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	117.9(13.80)	112.6(18.60)	5.3(-2.99,13.59)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Modified WOMAC - Function)	1 month	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	48.7(20.70)	66.4(24.90)	-17.7(-29.29,-6.11)	Treatment 1 Significant (P-value<.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Modified WOMAC - Stiffness)	1 month	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	1.2(2.40)	3.7(3.70)	-2.5(-4.08,-0.92)	Treatment 1 Significant (P-value<.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Total Modified WOMAC)	1 month	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	62.6(25.30)	89.3(30.10)	-26.7(-40.77,-12.63)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Tungtrongjit, Y., 2012	Moderate Quality	Function(Total Modified WOMAC)	3 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	31.2(22.20)	48.9(26.10)	-17.7(-29.96,-5.44)	Treatment 1 Significant (P-value<.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Modified WOMAC - Function)	3 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	25.7(19.10)	36(19.70)	-10.3(-20.12,-0.48)	Treatment 1 Significant (P-value<.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Modified WOMAC - Stiffness)	3 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	0.2(0.70)	2.2(3.30)	-2(-3.21,-0.79)	Treatment 1 Significant (P-value<.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Quadriceps Strength)	1 month	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	5.5(2.90)	4(2.70)	1.5(0.08, 2.92)	Treatment 1 Significant (P-value<.05)
Tungtrongjit, Y., 2012	Moderate Quality	Function(Quadriceps Strength)	3 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	7.5(2.90)	5.3(3.40)	2.2(0.60, 3.80)	Treatment 1 Significant (P-value<.05)

Table 4: PICO 1 part 1- Preop PT vs No Preop PT: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2004	Moderate Quality	Other(Acute Care LOS)	1 year	55	60	Community Physical Therapy	Usual Care (Control)	MeanDiff	6.7(2.20)	7.3(2.50)	-0.6(-1.46,0.26)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(Readmission LOS)	1 year	5	6	Community Physical Therapy	Usual Care (Control)	MeanDiff	3.4(0.55)	3.8(2.00)	-0.4(-2.07,1.27)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - General Health)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	75(15.00)	75(15.00)	0(-5.64,5.64)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - General Health)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	74(14.00)	75(18.00)	-1(-7.02,5.02)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - General Health)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	73(16.00)	76(18.00)	-3(-9.38,3.38)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Mental Health Component)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	54(10.00)	55(11.00)	-1(-4.94,2.94)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Mental Health Component)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	55(10.00)	56(11.00)	-1(-4.94,2.94)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Mental Health Component)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	56(9.00)	58(7.00)	-2(-5.06,1.06)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Mental Health)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	78(17.00)	79(16.00)	-1(-7.22,5.22)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Mental Health)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	80(13.00)	80(18.00)	0(-5.85,5.85)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Mental Health)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	81(15.00)	85(12.00)	-4(-9.15,1.15)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Role Limitations Emotional)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	70(42.00)	73(39.00)	-3(-18.28,12.28)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Role Limitations Emotional)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	68(39.00)	79(38.00)	-11(-25.50,3.50)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Role Limitations Emotional)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	69(38.00)	87(26.00)	-18(-30.39,-5.61)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Role Physical Limitations)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	26(35.00)	28(37.00)	-2(-15.53,11.53)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Role Physical Limitations)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	34(35.00)	42(40.00)	-8(-22.08,6.08)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Role Physical Limitations)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	44(38.00)	56(42.00)	-12(-27.02,3.02)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Vitality)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	57(19.00)	60(18.00)	-3(-9.98,3.98)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Vitality)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	59(18.00)	63(19.00)	-4(-10.95,2.95)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(SF-36 - Vitality)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	57(20.00)	65(19.00)	-8(-15.35,-0.65)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Other(Total LOS)	1 year	55	60	Community Physical Therapy	Usual Care (Control)	MeanDiff	10.2(4.50)	11.7(5.20)	-1.5(-3.27,0.27)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2004	Moderate Quality	Other(Transfer LOS)	1 year	23	31	Community Physical Therapy	Usual Care (Control)	MeanDiff	7.7(2.00)	7.7(2.80)	0(-1.28,1.28)	Not Significant (P-value>.05)
Calatayud, J., 2017	High Quality	Other(Length of Stay)	Post-Op	22	22	Pre-operative Training Program	Control	MeanDiff	4.5(0.90)	6.4(1.10)	-1.9(-2.49,-1.31)	Treatment 1 Significant (P-value<.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Other(KOOS - Activities of Daily Living)	6 weeks	24	26	Preop PT	No Preop PT	MeanDiff	81.58(15.50)	74.52(15.51)	7.06(-1.54,15.66)	Treatment 1 Significant (P-value<.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Other(KOOS - Activities of Daily Living)	3 months	24	26	Preop PT	No Preop PT	MeanDiff	89.5(11.17)	80.56(11.13)	8.94(2.75,15.13)	Treatment 1 Significant (P-value<.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Other(KOOS - Quality of Life)	6 weeks	24	26	Preop PT	No Preop PT	MeanDiff	55.49(13.90)	51.76(13.89)	3.73(-3.98,11.44)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Other(KOOS - Quality of Life)	3 months	24	26	Preop PT	No Preop PT	MeanDiff	64.08(17.50)	57.57(17.48)	6.51(-3.19,16.21)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Other(KOOS - Sports & Recreation)	6 weeks	24	26	Preop PT	No Preop PT	MeanDiff	39.58(13.10)	32.12(13.06)	7.46(0.20,14.72)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Other(KOOS - Sports & Recreation)	3 months	24	26	Preop PT	No Preop PT	MeanDiff	42.71(13.90)	34.81(13.89)	7.9(0.19,15.61)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Other(KOOS - Symptoms)	6 weeks	24	26	Preop PT	No Preop PT	MeanDiff	88.22(13.07)	88.84(11.99)	-0.62(-7.59,6.35)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Other(KOOS - Symptoms)	3 months	24	26	Preop PT	No Preop PT	MeanDiff	96.63(10.67)	90.21(10.67)	6.42(0.50,12.34)	Treatment 1 Significant (P-value<.05)
Matassi, F., 2014	High Quality	Other(Length of Stay)	Post-Op	61	61	Yes Preop Exercise	No Preop Exercise	MeanDiff	9.1(2.10)	9.9(2.30)	-0.8(-1.58,-0.02)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Skoffer, B., 2016	High Quality	Other(Health-related Quality of Life)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-1.4(.)	-3.6(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(KOOS Quality of Life)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-1.2(.)	2.3(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(KOOS Quality of Life)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	16.7(.)	16.8(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(Health-related Quality of Life)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	12.2(.)	2.2(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(Health-related Quality of Life)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	15.7(.)	11.2(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(KOOS Quality of Life)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	26.6(.)	27.6(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(KOOS Symptoms)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-7.8(.)	-10.1(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(KOOS Symptoms)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	6.6(.)	4.7(.)	NA	Not Significant (P-value>.05)
Skoffer, B., 2016	High Quality	Other(KOOS Symptoms)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	12.6(.)	12(.)	NA	Not Significant (P-value>.05)

Table 5: PICO 1 part 1- Preop PT vs No Preop PT: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2004	Moderate Quality	Pain(SF-36 - Pain)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	55(21.00)	56(18.00)	-1(-8.39,6.39)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Pain(SF-36 - Pain)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	59(20.00)	57(17.00)	2(-5.02,9.02)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Pain(SF-36 - Pain)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	69(22.00)	70(22.00)	-1(-9.28,7.28)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Pain(WOMAC - Pain)	3 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	74(18.00)	73(14.00)	1(-5.11,7.11)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Pain(WOMAC - Pain)	6 months	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	80(15.00)	75(15.00)	5(-0.64,10.64)	Not Significant (P-value>.05)
Beaupre, L. A., 2004	Moderate Quality	Pain(WOMAC - Pain)	1 year	51	58	Community Physical Therapy	Usual Care (Control)	MeanDiff	82(13.00)	80(16.00)	2(-3.45,7.45)	Not Significant (P-value>.05)
Calatayud, J., 2017	High Quality	Pain(10-cm VAS - Pain)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	2.5(0.72)	4.2(0.72)	-1.7(-2.13,-1.27)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Pain(10-cm VAS - Pain)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	1.4(0.72)	2.9(0.72)	-1.5(-1.93,-1.07)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Pain(WOMAC-Pain)	1 month	22	22	Pre-operative Training Program	Control	MeanDiff	4(0.96)	5.1(0.96)	-1.1(-1.67,-0.53)	Treatment 1 Significant (P-value<.05)
Calatayud, J., 2017	High Quality	Pain(WOMAC-Pain)	3 months	22	22	Pre-operative Training Program	Control	MeanDiff	2.9(0.96)	3.8(0.96)	-0.9(-1.47,-0.33)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Gstoettner, M., 2011	High Quality	Pain(WOMAC - Pain)	6 weeks	15	20	Preop Proprioceptive Training	Control	MeanDiff	1.3(1.10)	0.98(0.99)	0.32(-0.39,1.03)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Pain(KOOS - Pain)	6 weeks	24	26	Preop PT	No Preop PT	MeanDiff	86.94(14.70)	82.95(14.70)	3.99(-4.17,12.15)	Not Significant (P-value>.05)
Mat Eil Ismail, M. S., 2016	Moderate Quality	Pain(KOOS - Pain)	3 months	24	26	Preop PT	No Preop PT	MeanDiff	94.35(9.70)	88.06(9.65)	6.29(0.92,11.66)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Pain(WOMAC Pain)	Post-Op	10	11	lower body experimental program	upper body control program	MeanDiff	8.7(3.77)	9(4.41)	-0.3(-3.80,3.20)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Pain(WOMAC Pain)	6 weeks	9	10	lower body experimental program	upper body control program	MeanDiff	5.6(2.72)	4.92(4.50)	0.68(-2.63,3.99)	Not Significant (P-value>.05)
McKay, C., 2012	High Quality	Pain(WOMAC Pain)	12 weeks	7	10	lower body experimental program	upper body control program	MeanDiff	4.4(3.20)	3.58(4.40)	0.82(-2.79,4.43)	Not Significant (P-value>.05)
Skoffler, B., 2016	High Quality	Pain(Average Pain Over Past 14 Days)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-1.3(.)	-0.1(.)	NA	Not Significant (P-value>.05)
Skoffler, B., 2016	High Quality	Pain(Current Pain)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-1(.)	0.3(.)	NA	Not Significant (P-value>.05)
Skoffler, B., 2016	High Quality	Pain(Worst Pain During Past 14 Days)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0.1(.)	0.7(.)	NA	Not Significant (P-value>.05)
Skoffler, B., 2016	High Quality	Pain(Average Pain Over Past 14 Days)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-3.3(.)	-3.2(.)	NA	Not Significant (P-value>.05)
Skoffler, B., 2016	High Quality	Pain(Worst Pain During Past 14 Days)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-2.7(.)	-3.4(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Skoffe, B., 2016	High Quality	Pain(Current Pain)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-3.1(.)	-3(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Pain(Current Pain)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-3.4(.)	-3(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Pain(Average Pain Over Past 14 Days)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-4.1(.)	-3.8(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Pain(Worst Pain During Past 14 Days)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	-3.9(.)	-4.3(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Pain(KOOS Pain)	1 week	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	0.8(.)	-4.7(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Pain(KOOS Pain)	6 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	17.8(.)	13.9(.)	NA	Not Significant (P-value>.05)
Skoffe, B., 2016	High Quality	Pain(KOOS Pain)	12 weeks	.	.	Preop Progressive Resistance Training	No Preop PT (Control)	Author Reported	24.9(.)	25.8(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Pain(Pain (VAS-cm) Directly after Descend Stairs Test)	1 minute	26	28	Yes Preop PT	No Preop PT	Author Reported	1.83(.)	2.43(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Pain(Pain (VAS-cm) Directly after Ascend Stairs Test)	1 month	26	28	Yes Preop PT	No Preop PT	Author Reported	2.03(.)	2.14(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Pain(Pain (VAS-cm) Directly after Sit-to Stand test)	1 month	26	28	Yes Preop PT	No Preop PT	Author Reported	2.2(.)	2.04(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Topp, R., 2009	Moderate Quality	Pain(Pain (VAS-cm) Directly after 6-Minute Walk Test)	1 month	26	28	Yes Preop PT	No Preop PT	Author Reported	2.17(.)	2.36(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Pain(Pain (VAS-cm) Directly after Sit-to Stand test)	3 months	26	28	Yes Preop PT	No Preop PT	Author Reported	1.62(.)	1.06(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Pain(Pain (VAS-cm) Directly after Ascend Stairs Test)	3 months	26	28	Yes Preop PT	No Preop PT	Author Reported	1.33(.)	1.26(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Pain(Pain (VAS-cm) Directly after Descend Stairs Test)	3 months	26	28	Yes Preop PT	No Preop PT	Author Reported	1.42(.)	1.45(.)	NA	Not Significant (P-value>.05)
Topp, R., 2009	Moderate Quality	Pain(Pain (VAS-cm) Directly after 6-Minute Walk Test)	3 months	26	28	Yes Preop PT	No Preop PT	Author Reported	1.53(.)	1.38(.)	NA	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Pain(VAS - Pain)	6 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	0.9(1.40)	1.4(1.30)	-0.5(-1.18,0.18)	Not Significant (P-value>.05)
Tungtrongjit, Y., 2012	Moderate Quality	Pain(Modified WOMAC - Pain)	1 month	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	12.7(5.70)	19(6.40)	-6.3(-9.37,-3.23)	Treatment 1 Significant (P-value<.05)
Tungtrongjit, Y., 2012	Moderate Quality	Pain(VAS - Pain)	1 month	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	2.9(1.50)	3.8(1.40)	-0.9(-1.63,-0.17)	Treatment 1 Significant (P-value<.05)
Tungtrongjit, Y., 2012	Moderate Quality	Pain(VAS - Pain)	3 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	1.6(1.30)	2.6(1.40)	-1(-1.68,-0.32)	Treatment 1 Significant (P-value<.05)
Tungtrongjit, Y., 2012	Moderate Quality	Pain(Modified WOMAC - Pain)	3 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	5.4(4.40)	10.6(6.40)	-5.2(-7.98,-2.42)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Tungtrongjit, Y., 2012	Moderate Quality	Pain(Modified WOMAC - Pain)	6 months	30	30	Preoperative Quadriceps Exercise	Usual Care	MeanDiff	2.5(3.10)	4.8(4.20)	-2.3(-4.17,-0.43)	Treatment 1 Significant (P-value<.05)

Table 6: PICO 1 part 2- Preop PT vs Education: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
D'Lima, D. D., 1996	High Quality	Adverse Event(Deep Surgical Infection)	Post-Op	10	10	Cardiovascular Conditioning	Printed Material (Control)	RD	0.00%	10.00%	-0.10(-0.29,0.09)	Not Significant (P-value>.05)
D'Lima, D. D., 1996	High Quality	Adverse Event(Intestinal Pseudoobstruction)	Post-Op	10	10	Cardiovascular Conditioning	Printed Material (Control)	RD	0.00%	10.00%	-0.10(-0.29,0.09)	Not Significant (P-value>.05)
D'Lima, D. D., 1996	High Quality	Adverse Event(Sleep Apnea)	Post-Op	10	10	Cardiovascular Conditioning	Printed Material (Control)	RD	10.00%	0.00%	0.10(-0.09,0.29)	Not Significant (P-value>.05)
D'Lima, D. D., 1996	High Quality	Adverse Event(Manipulation for Restricted ROM)	8 weeks	10	10	Cardiovascular Conditioning	Printed Material (Control)	RD	10.00%	0.00%	0.10(-0.09,0.29)	Not Significant (P-value>.05)

Table 7: PICO 1 part 2- Preop PT vs Education: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
D'Lima, D. D., 1996	High Quality	Other(Hospital for Special Surgery Knee Rating)	3 weeks	10	10	Cardiovascular Conditioning	Printed Material (Control)	MeanDiff	63.3(14.30)	71.46(8.62)	-8.16(-18.51,2.19)	Not Significant (P-value>.05)
D'Lima, D. D., 1996	High Quality	Other(Hospital for Special Surgery Knee Rating)	24 weeks	10	10	Cardiovascular Conditioning	Printed Material (Control)	MeanDiff	83.5(8.14)	85.56(7.99)	-2.06(-9.13,5.01)	Not Significant (P-value>.05)
D'Lima, D. D., 1996	High Quality	Other(Hospital for Special Surgery Knee Rating)	48 weeks	10	10	Cardiovascular Conditioning	Printed Material (Control)	MeanDiff	87.77(7.80)	85.56(13.17)	2.21(-7.28,11.70)	Not Significant (P-value>.05)
D'Lima, D. D., 1996	High Quality	Other(Hospital for Special Surgery Knee Rating)	12 weeks	10	10	Cardiovascular Conditioning	Printed Material (Control)	MeanDiff	73(10.55)	81.91(8.88)	-8.91(-17.46,-0.36)	Treatment 2 Significant (P-value<.05)

Table 8: PICO 1 part 2- Preop PT vs Education: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huber, E. O., 2015	Moderate Quality	Function(KOOS - ADL Function)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	16.6(38.05)	18.6(38.66)	-2(-24.42,20.42)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(KOOS - ADL Function)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	24(38.05)	28.9(39.15)	-4.9(-27.46,17.66)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(Chair Stand Test)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	0.3(10.77)	-1.7(11.26)	2(-4.44,8.44)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(KOOS - ADL Function)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	5(40.92)	1.4(41.11)	3.6(-20.37,27.57)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(Muscle Strength Knee Extension Operated Leg)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-47.1(141.67)	-43.5(143.87)	-3.6(-87.04,79.84)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(Muscle Strength Knee Flexion Operated Leg)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-20.9(67.72)	-8.2(69.00)	-12.7(-52.65,27.25)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(Knee-bending in 30s)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	0.4(12.20)	3.7(12.23)	-3.3(-10.44,3.84)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(Timed-up-and-go)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	0.4(5.03)	-1.2(5.14)	1.6(-1.37,4.57)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huber, E. O., 2015	Moderate Quality	Function(ROM - Knee Flexion Operated Leg)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-2.6(17.95)	1.3(18.60)	-3.9(-14.58,6.78)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(20 Meter Walk Test)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-0.9(4.31)	-0.4(4.16)	-0.5(-2.98,1.98)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(ROM - Knee Extension Operated Leg)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-2.7(9.33)	-4(9.30)	1.3(-4.14,6.74)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(SF-36 - Physical Functioning)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	10.2(40.92)	9.8(42.09)	0.4(-23.85,24.65)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(Adapted NHANES III METs)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-8.5(76.10)	-10.1(76.10)	1.6(-42.88,46.08)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(SF-36 - Physical Functioning)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	22.4(40.68)	29(42.58)	-6.6(-30.93,17.73)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(METs 7 Day)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	1.1(6.70)	0.5(7.34)	0.6(-3.50,4.70)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(Adapted NHANES III METs)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	6.5(75.86)	6.2(76.83)	0.3(-44.32,44.92)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huber, E. O., 2015	Moderate Quality	Function(Steps (Daily Average))	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-130.3(4030.65)	-296(4423.91)	165.7(-2305.28, 2636.68)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(SF-36 - Physical Functioning)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	5(44.03)	0.5(44.04)	4.5(-21.24,30.24)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Function(Adapted NHANES III METs)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	12.2(80.65)	9.6(80.75)	2.6(-44.57,49.77)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 - Role Limitations Physical)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-4.1(95.96)	1(100.32)	-5.1(-62.45,52.25)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 - Role Limitations Physical)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	28(96.20)	31.2(100.32)	-3.2(-60.62,54.22)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 - Role Limitations Physical)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	3.8(103.38)	4.9(103.50)	-1.1(-61.56,59.36)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Function(SF-36 Physical Function)	8 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	49.9(15.00)	53.1(26.30)	-3.2(-18.66,12.26)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Function(1-repetition maximum (kg))	8 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	99(47.00)	86(43.00)	13(-19.86,45.86)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Rooks, D. S., 2006	High Quality	Function(WOMAC Function)	8 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	16.3(7.10)	15.3(11.40)	1(-5.86,7.86)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Function(SF-36 Limitation Physical)	8 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	48.7(38.60)	49.4(39.80)	-0.7(-29.24,27.84)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Function(Functional Reach (cm))	8 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	27.9(6.40)	26.7(7.60)	1.2(-3.90,6.30)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Function(Timed Up and Go (s))	8 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	12.03(2.05)	12.4(3.22)	-0.37(-2.32,1.58)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Function(1-repetition maximum (kg))	26 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	129(42.00)	111(49.00)	18(-15.15,51.15)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Function(Timed Up and Go (s))	26 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	10.08(1.76)	11.66(4.47)	-1.58(-4.02,0.86)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Function(Functional Reach (cm))	26 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	29.2(7.60)	27.9(7.60)	1.3(-4.24,6.84)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Function(SF-36 Limitation Physical)	26 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	71.1(36.40)	58.3(46.90)	12.8(-17.65,43.25)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Rooks, D. S., 2006	High Quality	Function(SF-36 Physical Function)	26 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	68(19.80)	66.1(26.60)	1.9(-15.09,18.89)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Function(WOMAC Function)	26 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	9.9(9.00)	1.4(11.90)	8.5(0.85,16.15)	Not Significant (P-value>.05)
Villadsen, A., 2014	Moderate Quality	Function(KOOS - Sport and Rec)	Post-Op	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-5.6(-15.60,4.50)	Not Significant (P-value>.05)
Villadsen, A., 2014	Moderate Quality	Function(KOOS - ADL)	6 weeks	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-7.4(-14.70,-0.02)	Significant (P-value<.05) favors Neuromuscular Exercise Program
Villadsen, A., 2014	Moderate Quality	Function(KOOS - Sport and Rec)	6 weeks	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-0.8(-10.80,9.30)	Not Significant (P-value>.05)
Villadsen, A., 2014	Moderate Quality	Function(EQ5D - Index)	6 weeks	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-0.03(-0.09,0.04)	Not Significant (P-value>.05)
Villadsen, A., 2014	Moderate Quality	Function(KOOS - Symptoms)	6 weeks	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-2.7(-10.20,4.70)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Villadsen, A., 2014	Moderate Quality	Function(EQ5D - VAS)	6 weeks	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-8.8(-16.40,-1.20)	Significant (P-value<.05) favors Neuromuscular Exercise Program
Villadsen, A., 2014	Moderate Quality	Function(KOOS - Symptoms)	3 months	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-6(-13.40,1.50)	Not Significant (P-value>.05)
Villadsen, A., 2014	Moderate Quality	Function(EQ5D - Index)	3 months	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-0.06(-0.13,0.01)	Not Significant (P-value>.05)
Villadsen, A., 2014	Moderate Quality	Function(EQ5D - VAS)	3 months	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	2.8(-4.80,10.40)	Not Significant (P-value>.05)
Villadsen, A., 2014	Moderate Quality	Function(KOOS - ADL)	3 months	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-5.6(-12.90,1.80)	Not Significant (P-value>.05)

Table 9: PICO 1 part 2- Preop PT vs Education: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huber, E. O., 2015	Moderate Quality	Other(SF-36 - Mental Health)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	4(32.31)	6.5(31.08)	-2.5(-21.04,16.04)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 - Mental Health)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	6.4(30.39)	9.5(31.56)	-3.1(-21.20,15.00)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 - Mental Health)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-1(32.31)	-1.4(32.54)	0.4(-18.55,19.35)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(KOOS - Sport & Rec)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	38.3(67.01)	26.1(75.12)	12.2(-29.35,53.75)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(KOOS - Sport & Rec)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	35.7(68.20)	34.7(73.16)	1(-40.31,42.31)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(KOOS - Sport & Rec)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	8.5(70.83)	12.5(74.63)	-4(-46.50,38.50)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 Role Limitations Emotional)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-2.4(77.77)	8.7(80.01)	-11.1(-57.20,35.00)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 Role Limitations Emotional)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	5.5(78.01)	15.7(83.93)	-10.2(-57.52,37.12)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huber, E. O., 2015	Moderate Quality	Other(SF-36 Role Limitations Emotional)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-1.5(83.52)	7.7(85.15)	-9.2(-58.49,40.09)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(KOOS - Quality of Life)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	25.5(42.12)	19.4(43.55)	6.1(-18.93,31.13)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(KOOS - Quality of Life)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	32.6(42.12)	38.5(43.31)	-5.9(-30.86,19.06)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(KOOS - Quality of Life)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	12.8(45.23)	6.9(45.51)	5.9(-20.62,32.42)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 General Health)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	11.2(30.39)	7.8(31.08)	3.4(-14.56,21.36)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 Vitality)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	3(38.29)	3.9(39.64)	-0.9(-23.67,21.87)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 Social Functioning)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	4.3(40.20)	2(41.11)	2.3(-21.46,26.06)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 Social Functioning)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	6.7(39.96)	8.3(41.84)	-1.6(-25.50,22.30)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huber, E. O., 2015	Moderate Quality	Other(SF-36 General Health)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	11.8(30.39)	14.7(31.56)	-2.9(-21.00,15.20)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 Vitality)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	5.6(38.29)	13.9(40.13)	-8.3(-31.21,14.61)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 General Health)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-4.2(32.31)	-6.6(32.30)	2.4(-16.48,21.28)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 Social Functioning)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-0.7(43.31)	0(43.31)	-0.7(-26.01,24.61)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 Vitality)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	4(41.16)	0.7(41.35)	3.3(-20.81,27.41)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(EQ-5D - Self-care)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	0.1(0.72)	0(0.73)	0.1(-0.32,0.52)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(EQ-5D - Self-care)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	0(0.72)	-0.1(0.73)	0.1(-0.32,0.52)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(EQ-5D - Self-care)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	0(0.72)	0(0.73)	0(-0.42,0.42)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huber, E. O., 2015	Moderate Quality	Other(EQ- Visual Analog Scale)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	8.1(31.83)	6(32.79)	2.1(-16.78,20.98)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(EQ-5D - Anxiety/Depression)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	0(0.72)	0(0.49)	0(-0.36,0.36)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(EQ-5D - Anxiety/Depression)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	0(0.72)	0(0.98)	0(-0.50,0.50)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(EQ- Visual Analog Scale)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	13.9(31.59)	12.6(33.28)	1.3(-17.65,20.25)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(EQ-5D - Anxiety/Depression)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	0(0.72)	0(0.49)	0(-0.36,0.36)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(EQ- Visual Analog Scale)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-1.7(33.98)	-1.6(34.26)	-0.1(-20.04,19.84)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(KOOS - Symptoms)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	7.3(32.07)	5(32.54)	2.3(-16.58,21.18)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(KOOS - Symptoms)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	9.9(32.07)	5.2(33.03)	4.7(-14.32,23.72)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huber, E. O., 2015	Moderate Quality	Other(KOOS - Symptoms)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	4.5(34.46)	0.7(34.50)	3.8(-16.35,23.95)	Not Significant (P-value>.05)
D'Lima, D. D., 1996	High Quality	Other(Mean Length of Stay)	Post-Op	10	10	Cardiovascular Conditioning	Printed Material (Control)	MeanDiff	6.1(1.10)	6.08(1.00)	0.02(-0.90,0.94)	Not Significant (P-value>.05)
Villadsen, A., 2014	Moderate Quality	Other(KOOS - Quality of Life)	6 weeks	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-5(-13.20,3.20)	Not Significant (P-value>.05)
Villadsen, A., 2014	Moderate Quality	Other(KOOS - Quality of Life)	3 months	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-4.6(-12.90,3.60)	Not Significant (P-value>.05)

Table 10: PICO 1 part 2- Preop PT vs Education: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huber, E. O., 2015	Moderate Quality	Pain(KOOS - Pain)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	13.2(33.74)	19.6(34.26)	-6.4(-26.27,13.47)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Pain(KOOS - Pain)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	23.4(33.74)	26.7(34.75)	-3.3(-23.31,16.71)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Pain(KOOS - Pain)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	15.2(36.14)	12.9(36.21)	2.3(-18.84,23.44)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 Bodily Pain)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	15.8(39.96)	13(41.11)	2.8(-20.89,26.49)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 Bodily Pain)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	24.5(39.96)	27.9(41.84)	-3.4(-27.30,20.50)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(SF-36 Bodily Pain)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	13.9(43.08)	9(43.06)	4.9(-20.27,30.07)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(EQ-5D Pain/Discomfort)	6 weeks	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-0.2(1.20)	-0.3(1.22)	0.1(-0.61,0.81)	Not Significant (P-value>.05)
Huber, E. O., 2015	Moderate Quality	Other(EQ-5D Pain/Discomfort)	3 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-0.3(1.20)	-0.3(1.22)	0(-0.71,0.71)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huber, E. O., 2015	Moderate Quality	Other(EQ-5D Pain/Discomfort)	12 months	22	23	Preop Neuromuscular Training & Knee School	Preop Knee School	MeanDiff	-0.3(1.20)	-0.2(0.98)	-0.1(-0.74,0.54)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Pain(WOMAC Pain)	8 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	4.7(2.40)	5(3.40)	-0.3(-2.43,1.83)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Pain(WOMAC Pain)	26 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	2.4(2.70)	2.3(2.00)	0.1(-1.64,1.84)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Pain(SF-36 Pain)	8 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	59.8(16.40)	68.1(16.60)	-8.3(-20.32,3.72)	Not Significant (P-value>.05)
Rooks, D. S., 2006	High Quality	Pain(SF-36 Pain)	26 weeks	14	15	Yes Preop Exercise	No Preop Exercise (education as intervention)	MeanDiff	71.2(19.30)	68.1(25.10)	3.1(-13.13,19.33)	Treatment 1 Significant (P-value<.05)
Villadsen, A., 2014	Moderate Quality	Pain(KOOS - Pain)	6 weeks	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-8(-15.50,-0.40)	Significant (P-value<.05) favors Neuromuscular Exercise Program
Villadsen, A., 2014	Moderate Quality	Pain(KOOS - Pain)	3 months	41	40	Neuromuscular Exercise Program and Standard Education	Standard Education only	MeanDiff	. %	. %	-5.5(-13.00,2.90)	Not Significant (P-value>.05)

Table 11: PICO 1 part 3- Education vs No Education: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huang, Sw, 2012	Moderate Quality	Adverse Event(DVT)	Post-Op	126	117	Preoperative Rehab Education Program	No Preop Education	RR	3.97%	2.56%	1.55(0.38,6.33)	Not Significant (P-value>.05)
Huang, Sw, 2012	Moderate Quality	Adverse Event(Infection)	Post-Op	126	117	Preoperative Rehab Education Program	No Preop Education	RR	1.59%	0.85%	1.86(0.17,20.21)	Not Significant (P-value>.05)

Table 12: PICO 1 part 3- Education vs No Education: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huang, Sw, 2012	Moderate Quality	Function(Ambulation Status)	5 days	126	117	Preoperative Rehab Education Program	No Preop Education	RR	85.71%	81.20%	1.06(0.94,1.18)	Not Significant (P-value>.05)
Huang, Sw, 2012	Moderate Quality	Function(Knee Range of Motion)	1 day	126	117	Preoperative Rehab Education Program	No Preop Education	MeanDiff	30(11.00)	30(12.00)	0(-2.90,2.90)	Not Significant (P-value>.05)
Huang, Sw, 2012	Moderate Quality	Function(Knee Range of Motion)	5 days	126	117	Preoperative Rehab Education Program	No Preop Education	MeanDiff	76(22.00)	74(20.00)	2(-3.28,7.28)	Not Significant (P-value>.05)

Table 13: PICO 1 part 3- Education vs No Education: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huang, Sw, 2012	Moderate Quality	Other(Length of Stay)	Discharge	126	117	Preoperative Rehab Education Program	No Preop Education	MeanDiff	7(2.00)	8(1.00)	-1(-1.39,-0.61)	Treatment 1 Significant (P-value<.05)

Table 14: PICO 1 part 3- Education vs No Education: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Huang, Sw, 2012	Moderate Quality	Pain(VAS - Pain)	1 day	126	117	Preoperative Rehab Education Program	No Preop Education	MeanDiff	4.5(1.30)	4.4(1.20)	0.1(-0.21,0.41)	Not Significant (P-value>.05)
Huang, Sw, 2012	Moderate Quality	Pain(VAS - Pain)	5 days	126	117	Preoperative Rehab Education Program	No Preop Education	MeanDiff	2.4(0.70)	2.5(0.60)	-0.1(-0.26,0.06)	Not Significant (P-value>.05)

Table 15: PICO 1 part 4- e-learning education vs standard education: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Culliton, S. E., 2018	Moderate Quality	Other(SF-12 Mental Health Composite)	1 year	154	165	Online e-learning	Standard Education	Author Reported	55.32(.)	55.54(.)	NA	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Function(SF-12 Physical Composite Score)	1 year	154	165	Online e-learning	Standard Education	Author Reported	42.34(.)	43.22(.)	NA	Not Significant (P-value>.05)

Table 16: PICO 1 part 4- e-learning education vs standard education: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Culliton, S. E., 2018	Moderate Quality	Function(KOOS - Sport and Rec)	1 year	154	165	Online e-learning	Standard Education	Author Reported	56.37(.)	53.35(.)	NA	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Function(KOOS - ADL)	1 year	154	165	Online e-learning	Standard Education	Author Reported	81.49(.)	83.69(.)	NA	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Function(UCLA Activity Score)	1 year	154	165	Online e-learning	Standard Education	Author Reported	5.55(.)	5.63(.)	NA	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Function(KSS - Function)	1 year	154	165	Online e-learning	Standard Education	Author Reported	64.75(.)	68.18(.)	NA	Control group favored (p = .0 Significant (P-value<.05)

Table 17: PICO 1 part 4- e-learning education vs standard education: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Culliton, S. E., 2018	Moderate Quality	Other(Post-op Expectations Not Met)	1 year	154	165	Online e-learning	Standard Education	RR	21.43%	21.82%	1.3(-7.80,10.40)	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Other(KSS - Expectations)	1 year	154	165	Online e-learning	Standard Education	Author Reported	9.27(.)	9.21(.)	NA	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Other(KSS - Patient Satisfaction)	1 year	154	165	Online e-learning	Standard Education	Author Reported	31.56(.)	32.15(.)	NA	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Other(Social Role Participation Questionnaire - Importance)	1 year	154	165	Online e-learning	Standard Education	Author Reported	3.87(.)	3.88(.)	NA	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Other(Patient Acceptable Symptom State - Satisfaction)	1 year	154	165	Online e-learning	Standard Education	RR	63.89(.)	63.89(.)	0.6(-8.40,9.60)	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Other(Social Role Participation Questionnaire - Performance)	1 year	154	165	Online e-learning	Standard Education	Author Reported	3.77(.)	3.85(.)	NA	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Other(HAD - Anxiety)	1 year	154	154	Online e-learning	Standard Education	RR	3.4(.)	2.81(.)	1.00(0.89,1.12)	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Other(Social Role Participation Questionnaire - Limitations)	1 year	154	165	Online e-learning	Standard Education	Author Reported	1.55(.)	1.5(.)	NA	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Other(KOOS - QoL)	1 year	154	165	Online e-learning	Standard Education	Author Reported	63.89(.)	65.83(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Culliton, S. E., 2018	Moderate Quality	Other(KOOS - Symptoms)	1 year	154	165	Online e-learning	Standard Education	Author Reported	74.56(.)	76.32(.)	NA	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Other(HAD - Depression)	1 year	154	165	Online e-learning	Standard Education	Author Reported	2.52(.)	2.49(.)	NA	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Other(KSS - Symptoms)	1 year	154	165	Online e-learning	Standard Education	Author Reported	18.9(.)	19.84(.)	NA	Control Group Favored (p = .0 Significant (P-value<.05)

Table 18: PICO 1 part 4- e-learning education vs standard education: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Culliton, S. E., 2018	Moderate Quality	Pain(KOOS - Pain)	1 year	154	165	Online e-learning	Standard Education	Author Reported	80.1(.)	82.62(.)	NA	Not Significant (P-value>.05)
Culliton, S. E., 2018	Moderate Quality	Pain(Pain Catastrophizing Scale - Rumination)	1 year	154	165	Online e-learning	Standard Education	Author Reported	2.16(.)	1.51(.)	NA	Control Group Favored (p = .0 Significant (P-value<.05)
Culliton, S. E., 2018	Moderate Quality	Pain(Pain Catastrophizing Scale - Helplessness)	1 year	154	165	Online e-learning	Standard Education	Author Reported	2.32(.)	1.76(.)	NA	Control group favored (p = .0 Significant (P-value<.05)
Culliton, S. E., 2018	Moderate Quality	Pain(Pain Catastrophizing Scale - Magnification)	1 year	154	165	Online e-learning	Standard Education	Author Reported	1.03(.)	0.69(.)	NA	Control Group Favored (p = .0 Significant (P-value<.05)

Table 19: PICO 1 part 5- Home PT vs In Patient PT: Composite

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mitchell, C., 2005	High Quality	Function(SF-36; SF-6D)	3 month s	57	57	Home PT	Hospital	MeanDif	0.57(0.09)	0.56(0.12)	0.01(-0.03,0.05)	Not Significant (P-value>.05)

Table 20: PICO 1 part 5- Home PT vs In Patient PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mitchell, C., 2005	High Quality	Function(SF-36; physical function)	3 months	57	57	Home PT	Hospital	MeanDiff	41.6(22.20)	43.3(27.60)	-1.7(-10.90,7.50)	Not Significant (P-value>.05)
Mitchell, C., 2005	High Quality	Function(WOMAC- Physical Function)	3 months	57	57	Home PT	Hospital	MeanDiff	24.9(13.40)	26.4(14.90)	-1.5(-6.70,3.70)	Not Significant (P-value>.05)
Mitchell, C., 2005	High Quality	Function(WOMAC- Stiffness)	3 months	57	57	Home PT	Hospital	MeanDiff	3.5(1.40)	3.6(2.10)	-0.1(-0.76,0.56)	Not Significant (P-value>.05)
Mitchell, C., 2005	High Quality	Function(SF-36; Role Physical)	3 months	57	57	Home PT	Hospital	MeanDiff	27.6(37.10)	23.2(36.20)	4.4(-9.06,17.86)	Not Significant (P-value>.05)

Table 21: PICO 1 part 5- Home PT vs In Patient PT: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mitchell, C., 2005	High Quality	Other(Inpatient stay (days))	3 months	56	55	Home PT	Hospital	MeanDiff	9.2(3.40)	9.6(3.00)	-0.4(-1.59,0.79)	Not Significant (P-value>.05)
Mitchell, C., 2005	High Quality	Function(SF-36; Energy)	3 months	57	57	Home PT	Hospital	MeanDiff	50.7(19.50)	48.2(23.70)	2.5(-5.47,10.47)	Not Significant (P-value>.05)
Mitchell, C., 2005	High Quality	Function(SF-36; General Health)	3 months	57	57	Home PT	Hospital	MeanDiff	61(23.40)	61(22.90)	0(-8.50,8.50)	Not Significant (P-value>.05)
Mitchell, C., 2005	High Quality	Function(SF-36; Mental Health)	3 months	57	57	Home PT	Hospital	MeanDiff	68(20.40)	71.2(20.00)	-3.2(-10.62,4.22)	Not Significant (P-value>.05)
Mitchell, C., 2005	High Quality	Function(SF-36; Role Emotional)	3 months	57	57	Home PT	Hospital	MeanDiff	48(46.70)	45.6(44.80)	2.4(-14.40,19.20)	Not Significant (P-value>.05)
Mitchell, C., 2005	High Quality	Function(SF-36; Social Functioning)	3 months	57	57	Home PT	Hospital	MeanDiff	64.1(26.60)	60.8(33.10)	3.3(-7.72,14.32)	Not Significant (P-value>.05)

Table 22: PICO 1 part 5- Home PT vs In Patient PT: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mitchell, C., 2005	High Quality	Pain(SF-36; Bodily Pain)	3 months	57	57	Home PT	Hospital	MeanDiff	46.6(20.60)	48.5(26.80)	-1.9(-10.68,6.88)	Not Significant (P-value>.05)
Mitchell, C., 2005	High Quality	Function(WOMAC- Pain)	3 months	57	57	Home PT	Hospital	MeanDiff	6.8(3.70)	6.9(4.30)	-0.1(-1.57,1.37)	Not Significant (P-value>.05)

Table 23: PICO 1 part 6- Preop PT vs Education: Composite

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Soni, A., 2012	Moderate Quality	Other(Oxford Knee Score)	3 month s	.	.	Preop Combined PT and Accupuncture	Standard Exercise and Advice Leaflet	Author Reporte d	. %	. %	2.2(- 4.30,8.7 0)	Not Significant (P-value>.05)

Table 24: PICO 1 part 6- Preop PT vs Education: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Soni, A., 2012	Moderate Quality	Function(50-meter Timed Walk)	3 months	.	.	Preop Combined PT and Accupuncture	Standard Exercise and Advice Leaflet	Author Reported	. %	. %	-9.1(-31.00,12.70)	Not Significant (P-value>.05)

Table 25: PICO 1 part 6- Preop PT vs Education: Other

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Soni, A., 2012	Moderate Quality	Other(Hospital Anxiety Depression Score - Anxiety)	3 month s	.	.	Preop Combined PT and Accupuncture	Standard Exercise and Advice Leaflet	Author Reporte d	. %	. %	0.2(- 2.70,3.0 0)	Not Significant (P-value>.05)
Soni, A., 2012	Moderate Quality	Other(Hospital Anxiety and Depression Scores - Depression)	3 month s	.	.	Preop Combined PT and Accupuncture	Standard Exercise and Advice Leaflet	Author Reporte d	. %	. %	0.3(- 2.30,2.9 0)	Not Significant (P-value>.05)

Table 26: PICO 1 part 6- Preop PT vs Education: Pain

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Soni, A., 2012	Moderate Quality	Pain(VAS - Pain)	3 month s	.	.	Preop Combined PT and Accupuncture	Standard Exercise and Advice Leaflet	Author Reporte d	. %	. %	-0.8(-2.60,1.10)	Not Significant (P-value>.05)

PICO 2: CPM and Mobilization

Quality Evaluation Tables PICO 2

QE - Intervention - Observational

Study	Design	Participant Recruitment	Allocation	Confounding Variables	Follow-Up Length	Other Bias? (If retrospective comparative, mark Yes)	Inclusion	Strength
Gildone, A., 2007							Include	Low Quality
Ververeli, P. A., 1995							Include	Low Quality

QE - Intervention - Randomized

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Alkire, M. R., 2010							Include	High Quality
Beaupre, L. A., 2001							Include	High Quality
Can, F., 2003							Include	Moderate Quality
Chiarello, C. M., 1997							Include	Moderate Quality
Chow, T. P., 2010							Include	High Quality
Codine, Ph, 2004							Include	Moderate Quality
De Fine, M., 2017							Include	Moderate Quality
Denis, M., 2006							Include	High Quality
Gibbons, C. E., 2001							Include	Moderate Quality
Herbold, J. A., 2014							Include	Moderate Quality

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Horton, T. C., 2002							Include	High Quality
Kumar, P. J., 1996							Include	Moderate Quality
Lenssen, T. A., 2008							Include	High Quality
Li, B., 2012							Include	High Quality
Li, B., 2017							Include	High Quality
Licciardone, J. C., 2004							Include	High Quality
Ma, T., 2008							Include	High Quality
MacDonald, S. J., 2000							Include	Moderate Quality
Mau-Moeller, A, 2014							Include	High Quality
Montgomery, F., 1996							Include	Moderate Quality
Pongkunakorn, A., 2014							Include	Low Quality
Pope, R. O., 1997							Include	Moderate Quality
Tanaka, Y., 2017							Include	High Quality
Worland, R. L., 1998							Include	Moderate Quality

Meta-Analysis Results

Figure 8: Meta-Analysis: CPM vs No CPM - Function

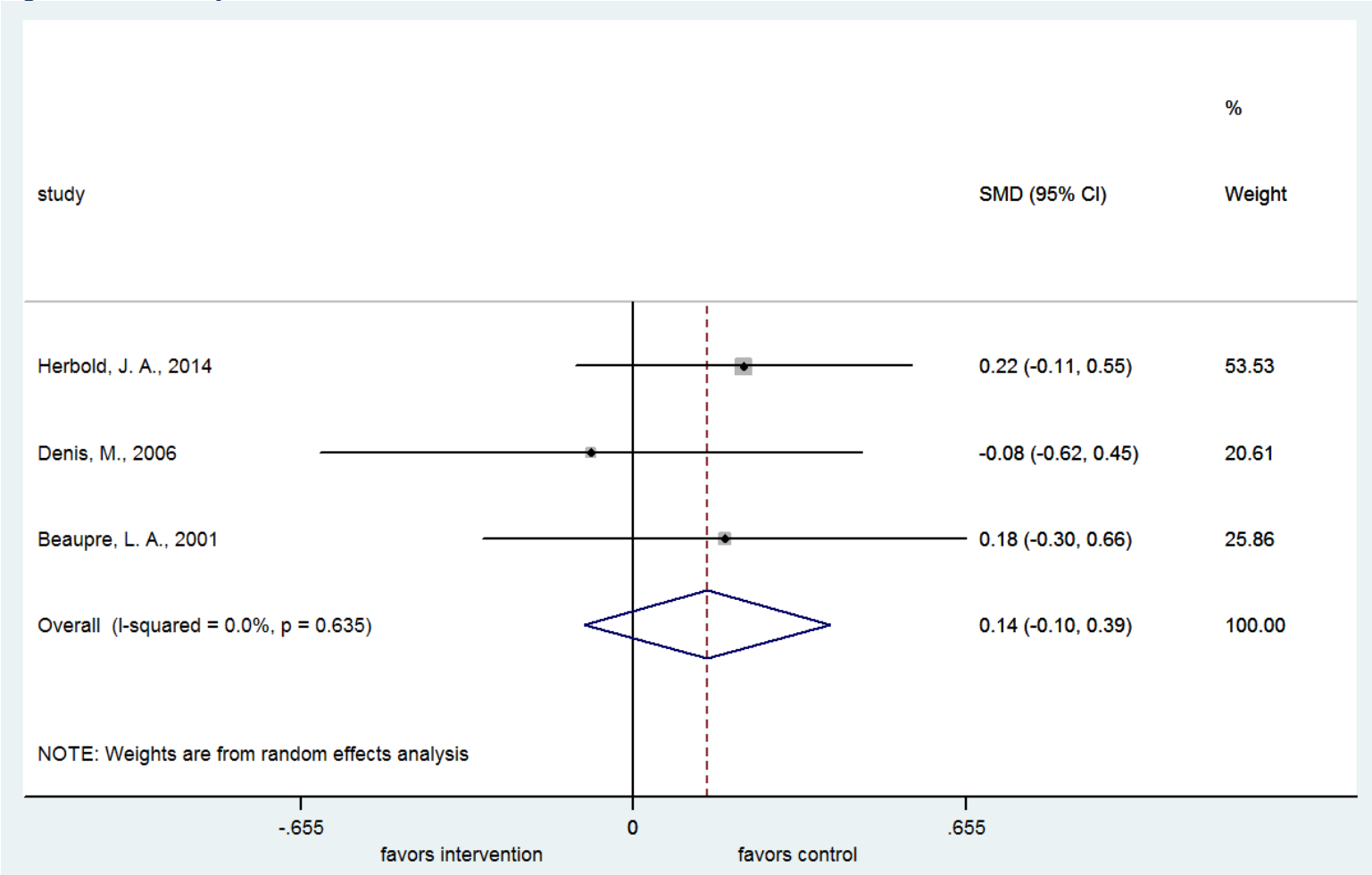
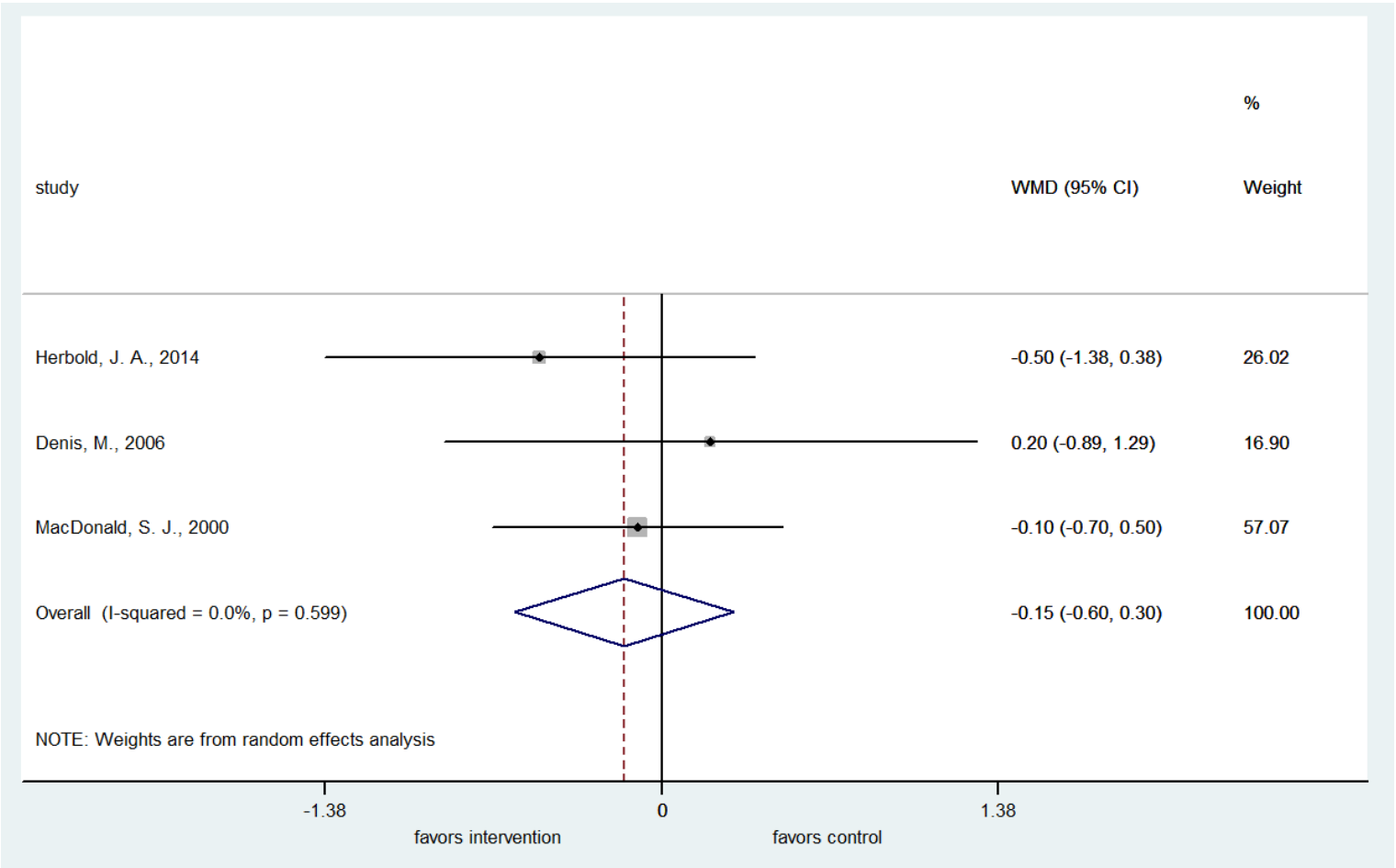


Figure 9: Meta-Analysis: CPM vs No CPM – Length of Hospital Stay



Summary of Findings

Figure 10: Summary of Findings-PICO 2 part 1: CPM vs No CPM

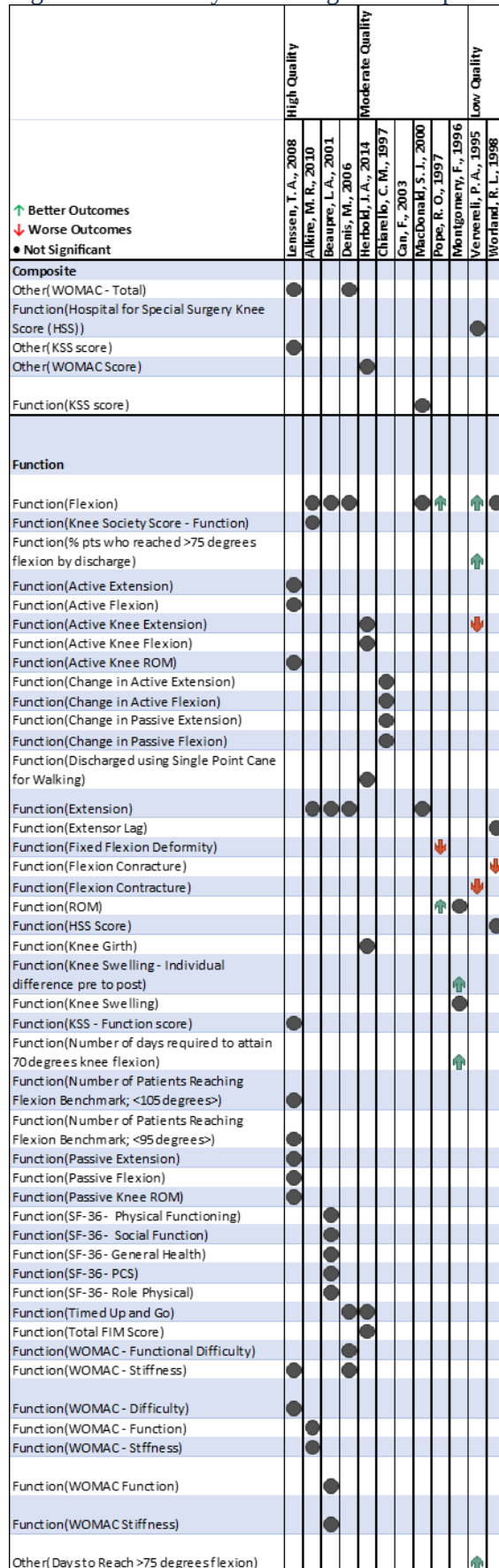


Figure 11: Summary of Findings-PICO 2 part 1: CPM vs No CPM continued

	High Quality	Moderate Quality	Low Quality
	Lenssen, T. A., 2008 Alkire, M. R., 2010 Beaupre, L. A., 2001 Denis, M., 2006 Herbold, J. A., 2014 Chiarello, C. M., 1997 Can, F., 2003 MacDonald, S. J., 2000 Pope, R. O., 1997 Montgomery, F., 1996 Ververeli, P. A., 1995 Worland, R. L., 1998		
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant			
Complications			
Adverse Event(Deep Vein Thrombosis)			
Adverse Event(DVT)			
Other(Manipulation)			
Adverse Event(Stitch Abscess)			
Adverse Event(Soft Tissue Injury or Nerve Damage)			
Adverse Event(Maximal Wound Swelling (mm) (greatest postop-preop circumferential change))			
Adverse Event(Manipulation under Anesthesia)			
Adverse Event(Complications (total))			
Adverse Event(Erythema)			
Adverse Event(Superficial Vein Thrombosis)			
Adverse Event(Knee Manipulation)			
Adverse Event(Scar Bleeding)			
Adverse Event(Knee Hematoma)			
Adverse Event(Hematoma)			
Adverse Event(Manipulation)			
Adverse Event(Mild Infection)			
Adverse Event(Swelling)			
Other			
Other(SF-36 - Mental Health)			
Other(Length of Stay) (Length of Stay - Theoretical)			
Other(Length of Stay - Real)			
Other(Combined LOS beginning with acute care hospital stay through post acute hospitalization)			
Other(Duration of Hospitalization)			
Other(Satisfaction with Treatment)			
Other(Satisfaction with Results)			
Other(Discharge to Home)			
Other(SF-36 - MCS)			
Pain(SF-36 - Role Emotional)			
Function(SF-36 - Vitality)			
Pain			
Pain(WOMAC - Pain)			
Pain(Visual Analog Data)			
Pain(KSS - Pain)			
Pain(VAS _ Pain)			
Pain(VAS - Pain at Rest)			
Pain(SF-36 - Bodily Pain)			

Figure 12: Summary of Findings-PICO 2 part 2: CPM vs CPM

	High Quality		
	Moderate Quality		
	Denis, M., 2006	MacDonald, S. J., 2000	Pope, R. O., 1997
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant			
Complications			
Adverse Event(Deep Vein Thrombosis)	●		
Adverse Event(Superficial Vein Thrombosis)	●		
Adverse Event(Knee Manipulation)	●		
Adverse Event(Scar Bleeding)	●		
Adverse Event(Knee Hematoma)	●		
Composite			
Other(WOMAC - Total)	●		
Function(KSS score)		●	
Function			
Function(Flexion)	●	●	●
Function(Extension)	●	●	
Function(Fixed Flexion Deformity)			●
Function(ROM)			●
Function(Timed Up and Go)	●		
Function(WOMAC - Functional Difficulty)	●		
Function(WOMAC - Stiffness)	●		
Other			
Other(Length of Stay)		●	
(Length of Stay - Theoretical)	●		
Other(Length of Stay - Real)	●		
Pain			
Pain(WOMAC - Pain)	↑		

Figure 13: Summary of Findings-PICO 2 part 3: Sling vs CPM

	Mau-Moeller, A, 2014	High Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant		
Composite		
Other(WOMAC - Total)		●
Other(SF-36 - Total)		●
Function		
Function(Active Extension)		●
Function(Active Flexion)	↑	
Function(HSS - Flexion Deformity)		●
Function(HSS - Function)		●
Function(HSS - Instability)		●
Function(HSS - ROM)	↑	
Function(HSS - Strength)		●
Function(HSS - Total)		●
Function(Passive Extension)		●
Function(Passive Flexion)	↑	
Function(Physical Activity - Lying/Sitting)		●
Function(Physical Activity - Sit to Stand Transition)		●
Function(Physical Activity - Standing)		●
Function(Physical Activity - Stepping)		●
Function(Postural Control (Eyes Closed) - Area)		●
Function(Postural Control (Eyes Closed) - Sway (anterior-posterior))		●
Function(Postural Control (Eyes Closed) - Sway (medio-lateral))		●
Function(Postural Control (Eyes Closed) - Velocity (anterior-posterior))	↑	
Function(Postural Control (Eyes Closed) - Velocity (medio-lateral))		●
Function(Postural Control (Eyes Open) - Area)		●
Function(Postural Control (Eyes Open) - Sway (anterior-posterior))		●
Function(Postural Control (Eyes Open) - Sway (medio-lateral))		●
Function(Postural Control (Eyes Open) - Velocity (anterior-posterior))		●
Function(Postural Control (Eyes Open) - Velocity (medio-lateral))		●
Function(SF-36 - Physical Health)		●
Function(Step Count)		●
Function(WOMAC - Functional Difficulty)		●
Function(WOMAC - Stiffness)		●
Other		
Other(SF-36 - Mental Health)		●
Other(Length of Hospital Stay)		●
Pain		
Pain(WOMAC - Pain)		●
Pain(VAS Pain)		●
Pain(HSS - Pain)		●

Figure 14: Summary of Findings-PICO 2 part 4: Mobilization vs CPM

	High Quality	Moderate Quality	Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Beaupre, L. A., 2001	Kumar, P. J., 1996	Pongkunakorn, A., 2014
Complications			
Adverse Event(Readmission)			●
Adverse Event(DVT)	↑		
Adverse Event(Manipulation under Anesthesia)			●
Adverse Event(Wound Drainage requiring Withholding Physical Therapy)		●	
Adverse Event(Closed Manipulation)		●	
Adverse Event(Deep Venous Thrombosis)		●	
Adverse Event(Hematoma Evacuation)		●	
Adverse Event(Surgical Wound Bleeding)			●
Adverse Event(Superficial Wound Necrosis)			●
Adverse Event(Complications (total))	●		
Adverse Event(Erythema)	●		
Adverse Event(Hematoma)	●		
Adverse Event(Manipulation)	●		
Adverse Event(Mild Infection)	●		
Adverse Event(Swelling)	●		
Composite			
Other(Knee Society Score)			●
Function			
Function(Knee Society Score - Function)			●
Function(Extension Lag)		●	
Function(Extension)	●		
Function(Flexion Contracture)			●
Function(Flexion)	●		
Function(Passive Extension)		●	
Function(Passive Flexion)		●	↑
Function(SF-36 - Physical Functioning)	●		
Function(SF-36 - Social Function)	●		
Function(SF-36 - General Health)	●		
Function(SF-36 - PCS)	●		
Function(SF-36 - Role Physical)	●		
Function(WOMAC Function)	●		
Function(WOMAC Stiffness)	●		
Other			
Other(SF-36 - Mental Health)	●		
Other(Length of Stay)			●
Other(Average Length of Stay)		●	
Other(Patients Discharged Home (knees))		●	
Other(Patients Sent to Rehabilitation Unit)		●	
Other(SF-36 - MCS)	●		
Pain(SF-36 - Role Emotional)	●		
Function(SF-36 - Vitality)	●		
Pain			
Pain(WOMAC - Pain)	●		
Pain(SF-36 - Bodily Pain)	●		

Figure 15: Summary of Findings-PICO 2 part 5: Mobilization vs No Mobilization

	High Quality
	Beaupre, L. A., 2001
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Complications	
Adverse Event(DVT)	↓
Adverse Event(Complications (total))	●
Adverse Event(Erythema)	●
Adverse Event(Hematoma)	●
Adverse Event(Manipulation)	●
Adverse Event(Mild Infection)	●
Adverse Event(Swelling)	●
Function	
Function(Extension)	●
Function(Flexion)	●
Function(SF-36 - Physical Functioning)	●
Function(SF-36 - Social Function)	●
Function(SF-36 - General Health)	●
Function(SF-36 - PCS)	●
Function(SF-36 - Role Physical)	●
Function(WOMAC Function)	●
Function(WOMAC Stiffness)	●
Other	
Other(SF-36 - Mental Health)	●
Other(SF-36 - MCS)	●
Pain(SF-36 - Role Emotional)	●
Function(SF-36 - Vitality)	●
Pain	
Pain(WOMAC - Pain)	●
Pain(SF-36 - Bodily Pain)	●

Figure 16: Summary of Findings-PICO 2 part 6: Mobilization vs Mobilization

	Low Quality
	Gildone, A., 2007
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Complications	
Adverse Event(Wound Dehiscence)	●
Composite	
Other(KSS)	↑
Other(WOMAC)	↑
Function	
Function(Extensor Strength)	●
Function(Flexor Strength)	●
Function(Passive Flexion)	↑
Pain	
Pain(Pain Verbal Numeric Scale)	↑

Figure 17: Summary of Findings-PICO 2 part 7: Bracing/Splinting vs No Bracing/Splinting

	High Quality	
	Horton, T. C., 2002	Tanaka, Y., 2017
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant		
Complications		
Adverse Event(Wound Complication)	●	
Function		
Function(Active Flexion)	●	
Function(Extension Lag)	●	
Function(Fixed Flexion Deformity)	●	
Function(Rate of change in quadriceps strength)		●
Function(Rate of change in walking speed)		↑
Other		
Other(Post-op Stay)	●	
Pain		
Pain(Number of participants with high NRS scores (>=6) for pain)		●

Figure 18: Summary of Findings-PICO 2 part 8: Bracing/Splinting vs Bracing/Splinting

	High Quality			Moderate Quality	
	Ma, T., 2008	Li, B., 2012	Li, B., 2017	De Fine, M., 2017	Gibbons, C. E., 2001
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant					
Complications					
Adverse Event(DVT)		●	●		
(DVT)	●				
Adverse Event(Wound Infection)		●			
Adverse Event(Common Peroneal Wound Infections)	●				
Adverse Event(Manipulation Under Anaesthesia)	●				
Adverse Event(Superficial Wound Infection)	●				
Adverse Event(Wound Breakdown)	●				
Adverse Event(Complications)				●	
Adverse Event(Superficial Infections)					●
Function					
Function(Range of Motion)	●			●	●
Function(Fixed Flexion Deformity)		●			
Function(Range of Active Knee Flexion)		↑			
Function(Range of Motion/Active Knee Flexion)			↑		
Function(Number of people conducting straight-leg raising initiatives)			↑		
Function(Fixed Flexion Deformity - less than or equal to 10 degrees)				●	
Function(Fixed Flexion Deformity - less than or equal to 5 degrees)				●	
Function(Fixed Flexion Deformity - 0 degrees)				●	
Length Of Stay					
Other(Length of Stay)	●				●
Other(Length of Hospital Stay)				●	

Figure 19: Summary of Findings-PICO 2 part 9: Manual Intervention vs No Manual Intervention

	Licciardone, J. C., 2004	High Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant		
Function		
Function(FIM - Communication - change from Rehab Unit Admission to Discharge)	●	
Function(FIM - Locomotion - change from Rehab Unit Admission to Discharge)	●	
Function(FIM - Social Cognition - change from Rehab Unit Admission to Discharge)	↑	
Function(FIM Mobility - change from Rehab Unit Admission to Discharge)	●	
Function(FIM Self Care - change from Rehab Unit Admission to Discharge)	●	
Function(FIM Sphincter Control - change from Rehab Unit Admission to Discharge)	●	
Function(FIM Total Score- change from Rehab Unit Admission to Discharge)	●	
Function(SF-36 - General Health - change from Rehab Admission to 4 wks after Discharge)	●	
Function(SF-36 - Role Limitations, Physical - - change from Rehab Admission to 4 wks after Discharge)	↓	
Function(SF-36 Physical Functioning - change from Rehab Admission to 4 wks after Discharge)	●	
Other		
Other(Length of Stay - at Rehab Unit Discharge)	↓	
Other(SF-36 - Role Limitations, emotional- - change from Rehab Admission to 4 wks after Discharge)	●	
Other(SF-36 - Mental Health - change from Rehab Admission to 4 wks after Discharge)	↑	
Other(Rehabilitation Efficiency)	↓	
Function(SF-36 - Social Functioning - change from Rehab Admission to 4 wks after Discharge)	●	
Function(SF-36 - Vitality - change from Rehab Admission to 4 wks after Discharge)	↓	
Pain		
(SF-36 - Bodily Pain - change from Rehab Admission to 4 wks after Discharge)	●	

Figure 20: Summary of Findings-PICO 2 part 10: Stretching vs Stretching

	High Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Chow, T. P., 2010
Function	
Function(Active Range of Knee Flexion)	
Function(Passive Range of Knee Flexion)	

Figure 21: Summary of Findings-PICO 2 part 11: Resistive ROM vs No Resistive ROM

	Moderate Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Codine, Ph, 2004
Composite	
Other(KSS - "Knee Fields")	●
Function	
Function(Knee Extension)	●
Function(Knee Flexion)	●
Function(KSS - "Function Fields")	●
Function(Max Torque - Hamstrings)	●
Function(Max Torque - Quadriceps)	●

Detailed Data Findings

Table 27: PICO 2 part 1- CPM vs No CPM: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Alkire, M. R., 2010	High Quality	Adverse Event(Manipulation)	3 months	32	32	CPM	No CPM	RR	6.25%	6.25%	1.00(0.15,6.67)	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Adverse Event(Stitch Abscess)	Post-Op	32	32	CPM	No CPM	RR	3.13%	3.13%	1.00(0.07,15.31)	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Adverse Event(Soft Tissue Injury or Nerve Damage)	Post-Op	32	32	CPM	No CPM	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Adverse Event(DVT)	Post-Op	32	32	CPM	No CPM	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Complications (total))	Post-Op	40	40	CPM	No Intervention	RR	10.00%	10.00%	1.00(0.27,3.72)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Erythema)	Post-Op	40	40	CPM	No Intervention	RD	2.50%	0.00%	0.03(-0.02,0.07)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Manipulation)		40	40	CPM	No Intervention	RD	2.50%	0.00%	0.03(-0.02,0.07)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Mild Infection)	Post-Op	40	40	CPM	No Intervention	RD	0.00%	2.50%	-0.03(-0.07,0.02)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Swelling)	Post-Op	40	40	CPM	No Intervention	RD	5.00%	0.00%	0.05(-0.02,0.12)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(DVT)	Post-Op	40	40	CPM	No Intervention	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Adverse Event(Hematoma)		40	40	CPM	No Intervention	RR	2.50%	2.50%	1.00(0.06,15.44)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Superficial Vein Thrombosis)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	RD	0.00%	3.70%	-0.04(-0.11,0.03)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Knee Manipulation)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Scar Bleeding)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	RD	0.00%	3.70%	-0.04(-0.11,0.03)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Knee Hematoma)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	RR	3.70%	3.70%	1.00(0.07,15.18)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Deep Vein Thrombosis)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	RD	3.70%	0.00%	0.04(-0.03,0.11)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Deep Vein Thrombosis)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Knee Hematoma)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	RR	3.85%	3.70%	1.04(0.07,15.75)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Scar Bleeding)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	RR	7.69%	3.70%	2.08(0.20,21.55)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Superficial Vein Thrombosis)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	RR	3.85%	3.70%	1.04(0.07,15.75)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Knee Manipulation)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Lenssen, T. A., 2008	High Quality	Adverse Event(Manipulation Under Anesthesia)	Post-Op	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	RR	3.33%	3.33%	1.00(0.07,15.26)	Not Significant (P-value>.05)
Ververeli, P. A., 1995	Low Quality	Adverse Event(Maximal Wound Swelling (mm) (greatest postop-preop circumferential change))	Post-Op	51	52	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	MeanDiff	23.5(17.90)	22.2(13.10)	1.3(-4.77,7.37)	Not Significant (P-value>.05)
Ververeli, P. A., 1995	Low Quality	Adverse Event(Manipulation under Anesthesia)	Post-Op	51	52	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	RD	0.00%	9.62%	-0.10(-0.18,-0.02)	Treatment 1 Significant (P-value<.05)

Table 28: PICO 2 part 1- CPM vs No CPM: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Denis, M., 2006	High Quality	Other(WOMAC - Total)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	MeanDiff	32.2(20.60)	37.1(22.60)	-4.9(-16.43,6.63)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Other(WOMAC - Total)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	MeanDiff	41.2(17.60)	37.1(22.60)	4.1(-6.78,14.98)	Not Significant (P-value>.05)
Herbold, J. A., 2014	Moderate Quality	Other(WOMAC Score)	Discharge	70	71	CPM 2hrs and Conventional PT	Conventional PT Only	MeanDiff	30.2(14.60)	33.3(14.40)	-3.1(-7.89,1.69)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Other(WOMAC - total)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	69.9(15.90)	65.4(16.40)	4.5(-3.67,12.67)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Other(KSS score)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	67.6(19.60)	67.3(14.90)	0.3(-8.51,9.11)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Other(KSS score)	6 weeks	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	77.3(14.90)	73.6(13.80)	3.7(-3.57,10.97)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Other(WOMAC - total)	6 weeks	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	75(13.60)	74.5(16.10)	0.5(-7.04,8.04)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Other(KSS score)	3 months	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	80.4(5.30)	78.8(9.20)	1.6(-2.20,5.40)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Lenssen, T. A., 2008	High Quality	Other(WOMAC - total)	3 months	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	80.5(7.70)	82.8(0.50)	-2.3(-5.06,0.46)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Function(KSS score)	52 weeks	40	40	70-110 degrees CPM	No CPM	MeanDiff	165(18.00)	166(25.00)	-1(-10.55,8.55)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Function(KSS score)	52 weeks	40	40	0-50 degrees CPM	No CPM	MeanDiff	166(23.00)	166(25.00)	0(-10.53,10.53)	Not Significant (P-value>.05)
Ververeli, P. A., 1995	Low Quality	Function(Hospital for Special Surgery Knee Score (HSS))	2 years	48	49	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	MeanDiff	84.5(12.10)	81.3(11.10)	3.2(-1.42,7.82)	Not Significant (P-value>.05)

Table 29: PICO 2 part 1- CPM vs No CPM: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Alkire, M. R., 2010	High Quality	Function(Extension)	1 day	32	32	CPM	No CPM	Author Reported	16(.)	14(.)	NA	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Function(Extension)	2 days	32	32	CPM	No CPM	Author Reported	14(.)	12(.)	NA	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Function(Extension)	2 weeks	32	32	CPM	No CPM	Author Reported	6(.)	5(.)	NA	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Function(Extension)	6 weeks	32	32	CPM	No CPM	Author Reported	2(.)	3(.)	NA	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Function(WOMAC - Function)	3 months	32	32	CPM	No CPM	Author Reported	18(.)	14(.)	NA	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Function(WOMAC - Stiffness)	3 months	32	32	CPM	No CPM	Author Reported	4.2(.)	3(.)	NA	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Function(Knee Society Score - Function)	3 months	32	32	CPM	No CPM	Author Reported	63(.)	62(.)	NA	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Function(Extension)	3 months	32	32	CPM	No CPM	Author Reported	1.4(.)	0.1(.)	NA	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Function(Flexion)	1 day	32	32	CPM	No CPM	Author Reported	68(.)	65(.)	NA	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Function(Flexion)	2 days	32	32	CPM	No CPM	Author Reported	73(.)	74(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Alkire, M. R., 2010	High Quality	Function(Flexion)	2 weeks	32	32	CPM	No CPM	Author Reported	95(.)	96(.)	NA	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Function(Flexion)	6 weeks	32	32	CPM	No CPM	Author Reported	109(.)	108(.)	NA	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Function(Flexion)	3 months	32	32	CPM	No CPM	Author Reported	109(.)	114(.)	NA	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Flexion)	Discharge	40	40	CPM	No Intervention	MeanDiff	61(14.00)	65(13.00)	-4(-9.92,1.92)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Extension)	Discharge	40	40	CPM	No Intervention	MeanDiff	-8(4.00)	-8(4.00)	0(-1.75,1.75)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(WOMAC Function)	3 months	34	34	CPM	No Intervention	MeanDiff	73(13.00)	72(17.00)	1(-6.19,8.19)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Role Physical)	3 months	36	34	CPM	No Intervention	MeanDiff	19(26.00)	28(41.00)	-9(-25.19,7.19)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Physical Functioning)	3 months	36	34	CPM	No Intervention	MeanDiff	46(18.00)	45(20.00)	1(-7.93,9.93)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(WOMAC Stiffness)	3 months	34	34	CPM	No Intervention	MeanDiff	63(15.00)	62(18.00)	1(-6.88,8.88)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Extension)	3 months	33	32	CPM	No Intervention	MeanDiff	-4(4.00)	-3(6.00)	-1(-3.49,1.49)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - General Health)	3 months	36	34	CPM	No Intervention	MeanDiff	69(21.00)	69(19.00)	0(-9.37,9.37)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Function(Flexion)	3 months	33	32	CPM	No Intervention	MeanDiff	94(11.00)	91(11.00)	3(-2.35,8.35)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(WOMAC Stiffness)	6 months	34	34	CPM	No Intervention	MeanDiff	65(21.00)	69(19.00)	-4(-13.52,5.52)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Extension)	6 months	33	32	CPM	No Intervention	MeanDiff	-4(4.00)	-2(5.00)	-2(-4.21,0.21)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(WOMAC Function)	6 months	34	34	CPM	No Intervention	MeanDiff	74(15.00)	77(18.00)	-3(-10.88,4.88)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - General Health)	6 months	36	34	CPM	No Intervention	MeanDiff	73(21.00)	70(22.00)	3(-7.09,13.09)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Physical Functioning)	6 months	36	34	CPM	No Intervention	MeanDiff	46(20.00)	55(27.00)	-9(-20.18,2.18)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Flexion)	6 months	33	32	CPM	No Intervention	MeanDiff	98(13.00)	94(21.00)	4(-4.52,12.52)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Role Physical)	6 months	36	34	CPM	No Intervention	MeanDiff	40(40.00)	43(40.00)	-3(-21.75,15.75)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Vitality)	3 months	36	34	CPM	No Intervention	MeanDiff	53(20.00)	56(17.00)	-3(-11.68,5.68)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - PCS)	3 months	36	34	CPM	No Intervention	MeanDiff	34(7.00)	34(9.00)	0(-3.79,3.79)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Social Function)	3 months	36	34	CPM	No Intervention	MeanDiff	75(23.00)	69(24.00)	6(-5.02,17.02)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Social Function)	6 months	36	34	CPM	No Intervention	MeanDiff	81(22.00)	79(25.00)	2(-9.06,13.06)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Vitality)	6 months	36	34	CPM	No Intervention	MeanDiff	60(18.00)	59(21.00)	1(-8.19,10.19)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - PCS)	6 months	36	34	CPM	No Intervention	MeanDiff	36(10.00)	38(10.00)	-2(-6.69,2.69)	Not Significant (P-value>.05)
Chiarello, C. M., 1997	Moderate Quality	Function(Change in Active Extension)	14 days	11	10	CPM Long duration, to ROM of Patient Tolerance	No CPM (Control)	MeanDiff	-0.7(1.80)	-0.7(1.00)	0(-1.23,1.23)	Not Significant (P-value>.05)
Chiarello, C. M., 1997	Moderate Quality	Function(Change in Passive Flexion)	14 days	11	10	CPM Long duration, to ROM of Patient Tolerance	No CPM (Control)	MeanDiff	3.9(2.40)	3.5(2.00)	0.4(-1.48,2.28)	Not Significant (P-value>.05)
Chiarello, C. M., 1997	Moderate Quality	Function(Change in Active Flexion)	14 days	11	10	CPM Long duration, to ROM of Patient Tolerance	No CPM (Control)	MeanDiff	4.1(3.70)	1.6(2.00)	2.5(-0.01,5.01)	Not Significant (P-value>.05)
Chiarello, C. M., 1997	Moderate Quality	Function(Change in Passive Extension)	14 days	11	10	CPM Long duration, to ROM of Patient Tolerance	No CPM (Control)	MeanDiff	-0.71(1.40)	-0.5(0.30)	-0.21(-1.06,0.64)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(Extension)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	MeanDiff	-6.5(3.70)	-8(3.50)	1.5(-0.42,3.42)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(Timed Up and Go)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	MeanDiff	52.3(34.90)	41.9(21.40)	10.4(-5.04,25.84)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(Flexion)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	MeanDiff	83.3(11.90)	80.4(11.80)	2.9(-3.42,9.22)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Denis, M., 2006	High Quality	Function(WOMAC - Stiffness)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	MeanDiff	50.1(24.10)	53.8(26.10)	-3.7(-17.10,9.70)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(WOMAC - Functional Difficulty)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	MeanDiff	31(23.90)	33(22.70)	-2(-14.43,10.43)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(WOMAC - Functional Difficulty)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	MeanDiff	40(20.20)	33(22.70)	7(-4.56,18.56)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(Flexion)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	MeanDiff	78.7(10.60)	80.4(11.80)	-1.7(-7.73,4.33)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(Extension)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	MeanDiff	-7(3.70)	-8(3.50)	1(-0.94,2.94)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(Timed Up and Go)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	MeanDiff	50.7(22.60)	41.9(21.40)	8.8(-3.06,20.66)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(WOMAC - Stiffness)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	MeanDiff	59.3(19.30)	53.8(26.10)	5.5(-6.83,17.83)	Not Significant (P-value>.05)
Herbold, J. A., 2014	Moderate Quality	Function(Discharged using Single Point Cane for Walking)	Discharge	70	71	CPM 2hrs and Conventional PT	Conventional PT Only	RR	90.00%	87.32%	1.03(0.92,1.16)	Not Significant (P-value>.05)
Herbold, J. A., 2014	Moderate Quality	Function(Timed Up and Go)	Discharge	70	71	CPM 2hrs and Conventional PT	Conventional PT Only	MeanDiff	19.9(7.50)	19.8(6.10)	0.1(-2.16,2.36)	Not Significant (P-value>.05)
Herbold, J. A., 2014	Moderate Quality	Function(Active Knee Flexion)	Discharge	70	71	CPM 2hrs and Conventional PT	Conventional PT Only	MeanDiff	83.5(10.00)	86.4(7.90)	-2.9(-5.88,0.08)	Not Significant (P-value>.05)
Herbold, J. A., 2014	Moderate Quality	Function(Active Knee Extension)	Discharge	70	71	CPM 2hrs and Conventional PT	Conventional PT Only	MeanDiff	-2.7(2.80)	-3.3(3.30)	0.6(-0.41,1.61)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Herbold, J. A., 2014	Moderate Quality	Function(Total FIM Score)	Discharge	70	71	CPM 2hrs and Conventional PT	Conventional PT Only	MeanDiff	107(4.10)	107.8(3.20)	-0.8(-2.02,0.42)	Not Significant (P-value>.05)
Herbold, J. A., 2014	Moderate Quality	Function(Knee Girth)	Discharge	70	71	CPM 2hrs and Conventional PT	Conventional PT Only	MeanDiff	46.1(5.30)	46.2(5.00)	-0.1(-1.80,1.60)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(WOMAC - Stiffness)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	5(1.80)	4.8(1.60)	0.2(-0.66,1.06)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Active Flexion)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	89.9(9.10)	86.7(8.50)	3.2(-1.26,7.66)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Passive Flexion)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	93(8.80)	89.7(9.60)	3.3(-1.36,7.96)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Passive Extension)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	4.3(3.10)	5.7(4.60)	-1.4(-3.38,0.58)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Active Knee ROM)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	83.6(11.40)	78.6(8.70)	5(-0.13,10.13)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Active Extension)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	6.3(3.90)	8.1(4.80)	-1.8(-4.01,0.41)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Passive Knee ROM)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	88.7(10.40)	84(9.90)	4.7(-0.44,9.84)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Lenssen, T. A., 2008	High Quality	Function(KSS - Function score)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	43(14.60)	39.8(21.10)	3.2(-5.98,12.38)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(WOMAC - Difficulty)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	49.1(11.90)	45.3(12.30)	3.8(-2.32,9.92)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Passive Knee ROM)	6 weeks	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	96.9(13.40)	95.5(14.20)	1.4(-5.59,8.39)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Active Knee ROM)	6 weeks	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	91.9(13.60)	91.8(14.30)	0.1(-6.96,7.16)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(WOMAC - Stiffness)	6 weeks	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	5.4(1.50)	4.8(1.50)	0.6(-0.16,1.36)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Active Extension)	6 weeks	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	6.3(4.00)	6.9(5.40)	-0.6(-3.00,1.80)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(KSS - Function score)	6 weeks	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	59.8(10.00)	56.2(15.80)	3.6(-3.09,10.29)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Active Flexion)	6 weeks	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	98.2(11.70)	98.7(11.20)	-0.5(-6.30,5.30)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Lenssen, T. A., 2008	High Quality	Function(WOMAC - Difficulty)	6 weeks	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	53(9.50)	52.7(12.00)	0.3(-5.18,5.78)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Active Extension)	3 months	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	4.8(3.90)	4.7(0.61)	0.1(-1.31,1.51)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Passive Knee ROM)	3 months	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	106.1(14.10)	106.2(3.70)	-0.1(-5.32,5.12)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(KSS - Function score)	3 months	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	72.4(11.40)	65.5(2.10)	6.9(2.75,11.05)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Active Flexion)	3 months	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	105.7(2.50)	106.2(0.60)	-0.5(-1.42,0.42)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(WOMAC - Stiffness)	3 months	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	5.5(1.40)	5.3(1.60)	0.2(-0.56,0.96)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(WOMAC - Difficulty)	3 months	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	57.6(4.20)	58.6(8.40)	-1(-4.36,2.36)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Active Knee ROM)	3 months	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	100.9(4.80)	102(4.30)	-1.1(-3.41,1.21)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Lenssen, T. A., 2008	High Quality	Function(Number of Patients Reaching Flexion Benchmark; <105 degrees>)	17 days	.	.	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Number of Patients Reaching Flexion Benchmark; <95 degrees>)	17 days	.	.	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Number of Patients Reaching Flexion Benchmark; <95 degrees>)	6 weeks	.	.	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Function(Number of Patients Reaching Flexion Benchmark; <105 degrees>)	6 weeks	.	.	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Function(Flexion)	6 weeks	40	40	70-110 degrees CPM	No CPM	MeanDiff	101(13.00)	104(14.00)	-3(-8.92,2.92)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Function(Extension)	52 weeks	40	40	70-110 degrees CPM	No CPM	MeanDiff	2(2.00)	2(3.00)	0(-1.12,1.12)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Function(Flexion)	52 weeks	40	40	70-110 degrees CPM	No CPM	MeanDiff	112(8.00)	112(9.00)	0(-3.73,3.73)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Function(Flexion)	6 weeks	40	40	0-50 degrees CPM	No CPM	MeanDiff	98(11.00)	104(14.00)	-6(-11.52,-0.48)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Function(Extension)	52 weeks	40	40	0-50 degrees CPM	No CPM	MeanDiff	2(2.00)	2(3.00)	0(-1.12,1.12)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
MacDonald, S. J., 2000	Moderate Quality	Function(Flexion)	52 weeks	40	40	0-50 degrees CPM	No CPM	MeanDiff	113(8.00)	112(9.00)	1(-2.73,4.73)	Not Significant (P-value>.05)
Montgomery, F., 1996	Moderate Quality	Function(Knee Swelling)	Discharge	28	32	CPM	Active Physical Therapy	MeanDiff	44(4.00)	44(3.00)	0(-1.81,1.81)	Not Significant (P-value>.05)
Montgomery, F., 1996	Moderate Quality	Function(ROM)	Discharge	28	32	CPM	Active Physical Therapy	MeanDiff	77(8.00)	76(6.00)	1(-2.62,4.62)	Not Significant (P-value>.05)
Montgomery, F., 1996	Moderate Quality	Function(Knee Swelling - Individual difference pre to post)	Discharge	28	32	CPM	Active Physical Therapy	MeanDiff	1.3(2.00)	4.6(8.00)	-3.3(-6.17,-0.43)	Treatment 1 Significant (P-value<.05)
Montgomery, F., 1996	Moderate Quality	Function(Number of days required to attain 70 degrees knee flexion)	Post-Op	28	32	CPM	Active Physical Therapy	MeanDiff	5(2.00)	7(3.00)	-2(-3.28,-0.72)	Treatment 1 Significant (P-value<.05)
Pope, R. O., 1997	Moderate Quality	Function(Fixed Flexion Deformity)	1 week	20	19	CPM 0 to 70 degrees	No CPM	MeanDiff	8.2(8.44)	6.2(6.67)	2(-2.76,6.76)	Not Significant (P-value>.05)
Pope, R. O., 1997	Moderate Quality	Function(Flexion)	1 year	20	19	CPM 0 to 70 degrees	No CPM	MeanDiff	102(16.20)	100(16.23)	2(-8.18,12.18)	Not Significant (P-value>.05)
Pope, R. O., 1997	Moderate Quality	Function(ROM)	1 year	20	19	CPM 0 to 70 degrees	No CPM	Author Reported	96.8(17.11)	92.9(85.10)	3.9(,,)	Not Significant (P-value>.05)
Pope, R. O., 1997	Moderate Quality	Function(Fixed Flexion Deformity)	1 year	20	19	CPM 0 to 70 degrees	No CPM	MeanDiff	5.3(5.93)	7.1(6.23)	-1.8(-5.62,2.02)	Not Significant (P-value>.05)
Pope, R. O., 1997	Moderate Quality	Function(ROM)	1 week	18	19	CPM 0 to 40 degrees	No CPM	MeanDiff	58.6(20.13)	50.5(20.24)	8.1(-4.91,21.11)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Pope, R. O., 1997	Moderate Quality	Function(Fixed Flexion Deformity)	1 year	18	19	CPM 0 to 40 degrees	No CPM	MeanDiff	6.9(6.28)	7.1(6.23)	-0.2(-4.23,3.83)	Not Significant (P-value>.05)
Pope, R. O., 1997	Moderate Quality	Function(ROM)	1 year	18	19	CPM 0 to 40 degrees	No CPM	Author Reported	96.9(17.32)	92.9(85.10)	4(.,.)	Not Significant (P-value>.05)
Pope, R. O., 1997	Moderate Quality	Function(Flexion)	1 year	18	19	CPM 0 to 40 degrees	No CPM	MeanDiff	103.8(16.23)	100(16.23)	3.8(-6.66,14.26)	Not Significant (P-value>.05)
Pope, R. O., 1997	Moderate Quality	Function(ROM)	1 week	20	19	CPM 0 to 70 degrees	No CPM	MeanDiff	69.5(20.08)	50.5(20.24)	19(6.34,31.66)	Treatment 1 Significant (P-value<.05)
Pope, R. O., 1997	Moderate Quality	Function(Flexion)	1 week	20	19	CPM 0 to 70 degrees	No CPM	MeanDiff	78.3(18.48)	56.8(18.68)	21.5(9.83,33.17)	Treatment 1 Significant (P-value<.05)
Pope, R. O., 1997	Moderate Quality	Function(Flexion)	1 week	18	19	CPM 0 to 40 degrees	No CPM	MeanDiff	70.3(18.62)	56.8(18.68)	13.5(1.48,25.52)	Treatment 1 Significant (P-value<.05)
Pope, R. O., 1997	Moderate Quality	Function(Fixed Flexion Deformity)	1 week	18	19	CPM 0 to 40 degrees	No CPM	MeanDiff	11.3(7.36)	6.2(6.67)	5.1(0.57,9.63)	Treatment 2 Significant (P-value<.05)
Ververeli, P. A., 1995	Low Quality	Function(Flexion)	2 years	48	49	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	MeanDiff	109.8(8.00)	107.8(9.40)	2(-1.47,5.47)	Not Significant (P-value>.05)
Ververeli, P. A., 1995	Low Quality	Function(Active Knee Extension)	2 years	48	49	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	MeanDiff	-2.2(3.70)	-2.6(4.20)	0.4(-1.17,1.97)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ververeli, P. A., 1995	Low Quality	Function(Flexion Contracture)	2 years	48	49	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	MeanDiff	2.2(3.70)	2.3(3.80)	-0.1(-1.59,1.39)	Not Significant (P-value>.05)
Ververeli, P. A., 1995	Low Quality	Other(Days to Reach >75 degrees flexion)	Post-Op	51	52	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	MeanDiff	8(2.20)	9.5(3.20)	-1.5(-2.56,-0.44)	Treatment 1 Significant (P-value<.05)
Ververeli, P. A., 1995	Low Quality	Function(Flexion)	Discharge	51	52	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	MeanDiff	81.3(13.00)	71.2(9.50)	10.1(5.70,14.50)	Treatment 1 Significant (P-value<.05)
Ververeli, P. A., 1995	Low Quality	Function(% pts who reached >75 degrees flexion by discharge)	Post-Op	51	52	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	RR	96.08%	38.46%	2.50(1.76,3.54)	Treatment 1 Significant (P-value<.05)
Ververeli, P. A., 1995	Low Quality	Function(Flexion Contracture)	Discharge	51	52	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	MeanDiff	9.3(4.20)	6.4(3.30)	2.9(1.44,4.36)	Treatment 2 Significant (P-value<.05)
Ververeli, P. A., 1995	Low Quality	Function(Active Knee Extension)	Discharge	51	52	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	MeanDiff	-12.5(4.90)	-8.8(4.20)	-3.7(-5.46,-1.94)	Treatment 2 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Worland, R. L., 1998	Low Quality	Function(Flexion)	2 weeks	37	43	CPM Home Therapy	Home PT with Therapist	MeanDiff	96.3(13.40)	98.4(9.20)	-2.1(-7.22,3.02)	Not Significant (P-value>.05)
Worland, R. L., 1998	Low Quality	Function(Flexion)	6 weeks	37	43	CPM Home Therapy	Home PT with Therapist	MeanDiff	105.7(10.40)	105.6(8.50)	0.1(-4.11,4.31)	Not Significant (P-value>.05)
Worland, R. L., 1998	Low Quality	Function(Flexion Conracture)	6 weeks	37	43	CPM Home Therapy	Home PT with Therapist	MeanDiff	1.3(2.80)	0.8(1.80)	0.5(-0.55,1.55)	Not Significant (P-value>.05)
Worland, R. L., 1998	Low Quality	Function(Flexion)	6 months	37	43	CPM Home Therapy	Home PT with Therapist	MeanDiff	117.6(7.20)	118.1(5.80)	-0.5(-3.40,2.40)	Not Significant (P-value>.05)
Worland, R. L., 1998	Low Quality	Function(HSS Score)	6 months	37	43	CPM Home Therapy	Home PT with Therapist	MeanDiff	95.3(2.80)	95.7(3.00)	-0.4(-1.67,0.87)	Not Significant (P-value>.05)
Worland, R. L., 1998	Low Quality	Function(Extensor Lag)	6 months	37	43	CPM Home Therapy	Home PT with Therapist	MeanDiff	0(0.00)	0.06(0.40)	-0.06(-0.18,0.06)	Not Significant (P-value>.05)
Worland, R. L., 1998	Low Quality	Function(Flexion Conracture)	6 months	37	43	CPM Home Therapy	Home PT with Therapist	MeanDiff	0.3(1.10)	0.4(1.30)	-0.1(-0.63,0.43)	Not Significant (P-value>.05)
Worland, R. L., 1998	Low Quality	Function(Flexion Conracture)	2 weeks	37	43	CPM Home Therapy	Home PT with Therapist	MeanDiff	4.2(5.40)	2.1(3.30)	2.1(0.10, 4.10)	Treatment 2 Significant (P-value<.05)

Table 30: PICO 2 part 1- CPM vs No CPM: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Alkire, M. R., 2010	High Quality	Other(Length of Stay)	Post-Op	32	32	CPM	No CPM	Author Reported	2.24(.)	2.3(.)	NA	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Other(SF-36 - Mental Health)	3 months	36	34	CPM	No Intervention	MeanDiff	79(17.00)	74(19.00)	5(-3.46,13.46)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Other(SF-36 - Mental Health)	6 months	36	34	CPM	No Intervention	MeanDiff	83(13.00)	79(19.00)	4(-3.67,11.67)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Other(SF-36 - MCS)	3 months	36	34	CPM	No Intervention	MeanDiff	54(10.00)	55(9.00)	-1(-5.45,3.45)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Other(SF-36 - MCS)	6 months	36	34	CPM	No Intervention	MeanDiff	57(8.00)	56(9.00)	1(-3.00,5.00)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(SF-36 - Role Emotional)	3 months	36	34	CPM	No Intervention	MeanDiff	68(41.00)	81(34.00)	-13(-30.61,4.61)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(SF-36 - Role Emotional)	6 months	36	34	CPM	No Intervention	MeanDiff	73(39.00)	84(32.00)	-11(-27.67,5.67)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	(Length of Stay - Theoretical)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	MeanDiff	7.6(1.80)	7.5(1.40)	0.1(-0.76,0.96)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	(Length of Stay - Theoretical)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	MeanDiff	7.9(1.60)	7.5(1.40)	0.4(-0.41,1.21)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Other(Length of Stay - Real)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	MeanDiff	8(2.10)	7.8(2.00)	0.2(-0.89,1.29)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Denis, M., 2006	High Quality	Other(Length of Stay - Real)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	MeanDiff	8.1(2.00)	7.8(2.00)	0.3(-0.78,1.38)	Not Significant (P-value>.05)
Herbold, J. A., 2014	Moderate Quality	Other(Combined LOS beginning with acute care hospital stay through post acute hospitalization)	Discharge	70	71	CPM 2hrs and Conventional PT	Conventional PT Only	MeanDiff	12.1(2.30)	12.6(3.00)	-0.5(-1.38,0.38)	Not Significant (P-value>.05)
Herbold, J. A., 2014	Moderate Quality	Other(Length of Stay)	Discharge	70	71	CPM 2hrs and Conventional PT	Conventional PT Only	MeanDiff	8.3(1.70)	8.7(2.70)	-0.4(-1.14,0.34)	Not Significant (P-value>.05)
Herbold, J. A., 2014	Moderate Quality	Other(Discharge to Home)	Discharge	70	71	CPM 2hrs and Conventional PT	Conventional PT Only	RR	98.57%	98.59%	1.00(0.96,1.04)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Other(Satisfaction with Treatment)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	8.2(0.80)	8.5(0.70)	-0.3(-0.68,0.08)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Other(Satisfaction with Results)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	7.4(1.40)	7.8(1.50)	-0.4(-1.13,0.33)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Other(Satisfaction with Treatment)	6 weeks	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	8.3(0.88)	8.7(0.84)	-0.4(-0.84,0.04)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Other(Satisfaction with Results)	6 weeks	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	8.1(1.00)	8.4(1.00)	-0.3(-0.81,0.21)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Other(Satisfaction with Results)	3 months	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	8.6(0.80)	8.2(1.50)	0.4(-0.21,1.01)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Lenssen, T. A., 2008	High Quality	Other(Satisfaction with Treatment)	3 months	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	8.6(0.77)	8.5(0.88)	0.1(-0.32,0.52)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Other(Length of Stay)	Discharge	40	40	70-110 degrees CPM	No CPM	MeanDiff	5(1.50)	5.1(1.20)	-0.1(-0.70,0.50)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Other(Length of Stay)	Discharge	40	40	0-50 degrees CPM	No CPM	MeanDiff	5.2(1.30)	5.1(1.20)	0.1(-0.45,0.65)	Not Significant (P-value>.05)
Montgomery, F., 1996	Moderate Quality	Other(Duration of Hospitalization)	Discharge	28	32	CPM	Active Physical Therapy	MeanDiff	9(3.00)	10(4.00)	-1(-2.78,0.78)	Not Significant (P-value>.05)
Ververeli, P. A., 1995	Low Quality	Other(Length of Stay)	Discharge	51	52	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	MeanDiff	12.1(3.10)	12(3.00)	0.1(-1.08,1.28)	Not Significant (P-value>.05)

Table 31: PICO 2 part 1- CPM vs No CPM: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Alkire, M. R., 2010	High Quality	Pain(WOMAC - Pain)	3 months	32	32	CPM	No CPM	Author Reported	3.2(.)	3.5(.)	NA	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(SF-36 - Bodily Pain)	3 months	36	34	CPM	No Intervention	MeanDiff	56(18.00)	55(22.00)	1(-8.45,10.45)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(WOMAC - Pain)	3 months	34	34	CPM	No Intervention	MeanDiff	73(17.00)	73(18.00)	0(-8.32,8.32)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(WOMAC - Pain)	6 months	34	34	CPM	No Intervention	MeanDiff	76(15.00)	79(16.00)	-3(-10.37,4.37)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(SF-36 - Bodily Pain)	6 months	36	34	CPM	No Intervention	MeanDiff	57(19.00)	64(22.00)	-7(-16.65,2.65)	Not Significant (P-value>.05)
Can, F., 2003	Moderate Quality	Pain(KSS - Pain)	Discharge	16	16	CPM and Standard Post-op Rehab	Standard Post-op Rehab only	MeanDiff	35.65(9.32)	35.15(9.11)	0.5(-5.89,6.89)	Not Significant (P-value>.05)
Can, F., 2003	Moderate Quality	Pain(VAS _ Pain)	1 day	16	16	CPM and Standard Post-op Rehab	Standard Post-op Rehab only	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Can, F., 2003	Moderate Quality	Pain(VAS _ Pain)	3 weeks	16	16	CPM and Standard Post-op Rehab	Standard Post-op Rehab only	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Can, F., 2003	Moderate Quality	Pain(VAS _ Pain)	3 months	16	16	CPM and Standard Post-op Rehab	Standard Post-op Rehab only	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Can, F., 2003	Moderate Quality	Pain(KSS - Pain)	3 months	16	16	CPM and Standard Post-op Rehab	Standard Post-op Rehab only	MeanDiff	45.1(8.63)	45.17(7.12)	-0.07(-5.55,5.41)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Denis, M., 2006	High Quality	Pain(WOMAC - Pain)	Discharge	27	27	CPM 2hrs Daily and Conventional PT	Conventional PT Only	MeanDiff	27.7(17.10)	39.8(24.80)	-12.1(-23.46,-0.74)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Pain(WOMAC - Pain)	Discharge	26	27	CPM 35min Daily and Conventional PT	Conventional PT Only	MeanDiff	36.8(15.60)	39.8(24.80)	-3(-14.11,8.11)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Pain(WOMAC - Pain)	17 days	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	15.8(4.70)	15.3(4.10)	0.5(-1.73,2.73)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Pain(WOMAC - Pain)	6 weeks	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	16(3.70)	16.6(4.00)	-0.6(-2.55,1.35)	Not Significant (P-value>.05)
Lenssen, T. A., 2008	High Quality	Pain(WOMAC - Pain)	3 months	30	30	Home CPM and PT and In-Hospital CPM and PT	Home PT and In-Hospital CPM and PT only	MeanDiff	17.3(3.80)	17.5(0.90)	-0.2(-1.60,1.20)	Not Significant (P-value>.05)
Montgomery, F., 1996	Moderate Quality	Pain(VAS - Pain at Rest)	1 day	28	32	CPM	Active Physical Therapy	Author Reported	7(.)	8(.)	NA	Not Significant (P-value>.05)
Montgomery, F., 1996	Moderate Quality	Pain(VAS - Pain at Rest)	3 days	28	32	CPM	Active Physical Therapy	Author Reported	4(.)	5(.)	NA	Not Significant (P-value>.05)
Montgomery, F., 1996	Moderate Quality	Pain(VAS - Pain at Rest)	5 days	28	32	CPM	Active Physical Therapy	Author Reported	5(.)	5(.)	NA	Not Significant (P-value>.05)
Ververeli, P. A., 1995	Low Quality	Pain(Visual Analog Data)	1 day	.	.	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ververeli, P. A., 1995	Low Quality	Pain(Visual Analog Data)	3 days	.	.	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Ververeli, P. A., 1995	Low Quality	Pain(Visual Analog Data)	5 days	.	.	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Ververeli, P. A., 1995	Low Quality	Pain(Visual Analog Data)	7 days	.	.	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Ververeli, P. A., 1995	Low Quality	Pain(Visual Analog Data)	10 days	.	.	CPM initiated in recovery room. Patients used device approx 20 hours per day for 7 days.	No CPM	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 32: PICO 2 part 2- CPM vs CPM: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Denis, M., 2006	High Quality	Adverse Event(Dep Vein Thrombosis)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	RD	3.70%	0.00%	0.04(-0.03,0.11)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Knee Hematoma)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	RR	3.70%	3.85%	0.96(0.06,14.60)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Superficial Vein Thrombosis)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	RD	0.00%	3.85%	-0.04(-0.11,0.04)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Knee Manipulation)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Adverse Event(Scar Bleeding)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	RD	0.00%	7.69%	-0.08(-0.18,0.03)	Not Significant (P-value>.05)

Table 33: PICO 2 part 2- CPM vs CPM: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Denis, M., 2006	High Quality	Other(WOMAC - Total)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	MeanDiff	32.2(20.60)	41.2(17.60)	-9(-19.30,1.30)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Function(KSS score)	52 weeks	40	40	70-110 degrees CPM	0-50 degrees CPM	MeanDiff	165(18.00)	166(23.00)	-1(-10.05,8.05)	Not Significant (P-value>.05)

Table 34: PICO 2 part 2- CPM vs CPM: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Denis, M., 2006	High Quality	Function(WOMAC - Stiffness)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	MeanDiff	50.1(24.10)	59.3(19.30)	-9.2(-20.93,2.53)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(Timed Up and Go)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	MeanDiff	52.3(34.90)	50.7(22.60)	1.6(-14.17,17.37)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(Extension)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	MeanDiff	-6.5(3.70)	-7(3.70)	0.5(-1.49,2.49)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(Flexion)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	MeanDiff	83.3(11.90)	78.7(10.60)	4.6(-1.46,10.66)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Function(WOMAC - Functional Difficulty)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	MeanDiff	31(23.90)	40(20.20)	-9(-20.90,2.90)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Function(Flexion)	6 weeks	40	40	70-110 degrees CPM	0-50 degrees CPM	MeanDiff	101(13.00)	98(11.00)	3(-2.28,8.28)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Function(Flexion)	52 weeks	40	40	70-110 degrees CPM	0-50 degrees CPM	MeanDiff	112(8.00)	113(8.00)	-1(-4.51,2.51)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Function(Extension)	52 weeks	40	40	70-110 degrees CPM	0-50 degrees CPM	MeanDiff	2(2.00)	2(2.00)	0(-0.88,0.88)	Not Significant (P-value>.05)
Pope, R. O., 1997	Moderate Quality	Function(Flexion)	1 week	20	18	CPM 0 to 70 degrees	CPM 0 to 40 degrees	MeanDiff	78.3(18.48)	70.3(18.62)	8(-3.81,19.81)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Pope, R. O., 1997	Moderate Quality	Function(ROM)	1 week	20	18	CPM 0 to 70 degrees	CPM 0 to 40 degrees	MeanDiff	69.5(20.08)	58.6(20.13)	10.9(-1.90,23.70)	Not Significant (P-value>.05)
Pope, R. O., 1997	Moderate Quality	Function(Fixed Flexion Deformity)	1 week	20	18	CPM 0 to 70 degrees	CPM 0 to 40 degrees	MeanDiff	8.2(8.44)	11.3(7.36)	-3.1(-8.12,1.92)	Not Significant (P-value>.05)
Pope, R. O., 1997	Moderate Quality	Function(ROM)	1 year	20	18	CPM 0 to 70 degrees	CPM 0 to 40 degrees	MeanDiff	96.8(17.11)	96.9(17.32)	-0.1(-11.07,10.87)	Not Significant (P-value>.05)
Pope, R. O., 1997	Moderate Quality	Function(Fixed Flexion Deformity)	1 year	20	18	CPM 0 to 70 degrees	CPM 0 to 40 degrees	MeanDiff	5.3(5.93)	6.9(6.28)	-1.6(-5.50,2.30)	Not Significant (P-value>.05)
Pope, R. O., 1997	Moderate Quality	Function(Flexion)	1 year	20	18	CPM 0 to 70 degrees	CPM 0 to 40 degrees	MeanDiff	102(16.20)	103.8(16.23)	-1.8(-12.13,8.53)	Not Significant (P-value>.05)

Table 35: PICO 2 part 2- CPM vs CPM: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Denis, M., 2006	High Quality	(Length of Stay - Theoretical)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	MeanDiff	7.6(1.80)	7.9(1.60)	-0.3(-1.22,0.62)	Not Significant (P-value>.05)
Denis, M., 2006	High Quality	Other(Length of Stay - Real)	Discharge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	MeanDiff	8(2.10)	8.1(2.00)	-0.1(-1.20,1.00)	Not Significant (P-value>.05)
MacDonald, S. J., 2000	Moderate Quality	Other(Length of Stay)	Discharge	40	40	70-110 degrees CPM	0-50 degrees CPM	MeanDiff	5(1.50)	5.2(1.30)	-0.2(-0.82,0.42)	Not Significant (P-value>.05)

Table 36: PICO 2 part 2- CPM vs CPM: Pain

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Denis, M., 2006	High Quality	Pain(WOMAC - Pain)	Discha rge	27	26	CPM 2hrs Daily and Conventional PT	CPM 35min Daily and Conventional PT	MeanDi f	27.7(17. 10)	36.8(15. 60)	-9.1(- 17.91,- 0.29)	Not Significant (P-value>.05)

Table 37: PICO 2 part 3- Sling vs CPM: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mau-Moeller, A, 2014	High Quality	Other(WOMAC - Total)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	69.6(18.10)	67.3(18.10)	2.3(-9.21,13.81)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Other(WOMAC - Total)	3 months	19	19	Sling Exercise	CPM	MeanDiff	73.2(12.50)	67.7(12.50)	5.5(-2.45,13.45)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(HSS - Total)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	71.6(9.70)	70.8(9.70)	0.8(-5.37,6.97)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(HSS - Total)	3 months	19	19	Sling Exercise	CPM	MeanDiff	81.6(10.20)	79.2(10.20)	2.4(-4.09,8.89)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Other(SF-36 - Total)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	50.9(14.30)	52.3(14.30)	-1.4(-10.49,7.69)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Other(SF-36 - Total)	3 months	19	19	Sling Exercise	CPM	MeanDiff	63.5(16.30)	61.3(16.30)	2.2(-8.17,12.57)	Not Significant (P-value>.05)

Table 38: PICO 2 part 3- Sling vs CPM: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mau-Moeller, A, 2014	High Quality	Function(Active Extension)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	1.6(3.20)	1.7(3.20)	-0.1(-2.13,1.93)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(WOMAC - Functional Difficulty)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	44.9(12.90)	43.7(12.90)	1.2(-7.00,9.40)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Passive Extension)	Discharge	19	19	Sling Exercise	CPM	Author Reported	0.7(1.60)	. %	.(,..)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(WOMAC - Stiffness)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	6(1.50)	6.4(1.50)	-0.4(-1.35,0.55)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Active Flexion)	3 months	19	19	Sling Exercise	CPM	MeanDiff	101.4(9.60)	103.3(9.60)	-1.9(-8.00,4.20)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Active Extension)	3 months	19	19	Sling Exercise	CPM	MeanDiff	3.8(5.40)	2(5.40)	1.8(-1.63,5.23)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Passive Flexion)	3 months	19	19	Sling Exercise	CPM	MeanDiff	104.1(8.60)	107.1(8.60)	-3(-8.47,2.47)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Passive Extension)	3 months	19	19	Sling Exercise	CPM	MeanDiff	2.8(4.10)	0.8(4.10)	2(-0.61,4.61)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(WOMAC - Functional Difficulty)	3 months	19	19	Sling Exercise	CPM	MeanDiff	49.4(8.30)	47.2(8.30)	2.2(-3.08,7.48)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(WOMAC - Stiffness)	3 months	19	19	Sling Exercise	CPM	MeanDiff	5.5(1.60)	5.1(1.60)	0.4(-0.62,1.42)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Open) - Sway (anterior-posterior))	Discharge	19	19	Sling Exercise	CPM	MeanDiff	8.77(4.11)	7.86(4.11)	0.91(-1.70,3.52)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Open) - Area)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	1.63(0.83)	1.62(0.83)	0.01(-0.52,0.54)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Open) - Velocity (medio-lateral))	Discharge	19	19	Sling Exercise	CPM	MeanDiff	17.87(7.59)	18.03(7.59)	-0.16(-4.99,4.67)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Open) - Velocity (anterior-posterior))	Discharge	19	19	Sling Exercise	CPM	MeanDiff	24.39(8.72)	22.39(8.72)	2(-3.55,7.55)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Open) - Sway (medio-lateral))	Discharge	19	19	Sling Exercise	CPM	MeanDiff	6.61(2.73)	7.29(2.73)	-0.68(-2.42,1.06)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(SF-36 - Physical Health)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	40(14.00)	37.6(14.00)	2.4(-6.50,11.30)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Open) - Sway (anterior-posterior))	3 months	19	19	Sling Exercise	CPM	MeanDiff	7.29(2.95)	6.17(2.95)	1.12(-0.76,3.00)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Open) - Velocity (medio-lateral))	3 months	19	19	Sling Exercise	CPM	MeanDiff	15.7(8.59)	18.32(8.59)	-2.62(-8.08,2.84)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mau-Moeller, A, 2014	High Quality	Function(SF-36 - Physical Health)	3 months	19	19	Sling Exercise	CPM	MeanDiff	52.5(19.70)	52.6(19.70)	-0.1(-12.63,12.43)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Open) - Area)	3 months	19	19	Sling Exercise	CPM	MeanDiff	1.42(0.62)	1.44(0.62)	-0.02(-0.41,0.37)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Open) - Sway (medio-lateral))	3 months	19	19	Sling Exercise	CPM	MeanDiff	6.25(2.18)	6.12(2.18)	0.13(-1.26,1.52)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Open) - Velocity (anterior-posterior))	3 months	19	19	Sling Exercise	CPM	MeanDiff	19.64(8.00)	20.13(8.00)	-0.49(-5.58,4.60)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Closed) - Velocity (medio-lateral))	Discharge	19	19	Sling Exercise	CPM	MeanDiff	18.61(5.59)	17.37(5.59)	1.24(-2.31,4.79)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Closed) - Sway (anterior-posterior))	Discharge	19	19	Sling Exercise	CPM	MeanDiff	9.12(3.98)	7.54(3.98)	1.58(-0.95,4.11)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Closed) - Sway (medio-lateral))	Discharge	19	19	Sling Exercise	CPM	MeanDiff	6.84(2.55)	7.13(2.55)	-0.29(-1.91,1.33)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Closed) - Area)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	3.83(1.41)	3.23(1.41)	0.6(-0.30,1.50)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Closed) - Sway (medio-lateral))	3 months	19	19	Sling Exercise	CPM	MeanDiff	6.36(2.01)	6.03(2.01)	0.33(-0.95,1.61)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Closed) - Sway (anterior-posterior))	3 months	19	19	Sling Exercise	CPM	MeanDiff	7.99(2.31)	7.33(2.31)	0.66(-0.81,2.13)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Closed) - Velocity (medio-lateral))	3 months	19	19	Sling Exercise	CPM	MeanDiff	16.95(7.25)	17.2(7.25)	-0.25(-4.86,4.36)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Closed) - Velocity (anterior-posterior))	3 months	19	19	Sling Exercise	CPM	MeanDiff	20.44(6.66)	19.41(6.66)	1.03(-3.21,5.27)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Closed) - Area)	3 months	19	19	Sling Exercise	CPM	MeanDiff	3.19(2.09)	3.68(2.09)	-0.49(-1.82,0.84)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Physical Activity - Stepping)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	1.4(0.80)	1.3(0.80)	0.1(-0.41,0.61)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Physical Activity - Lying/Sitting)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	112(3.40)	111.5(3.40)	0.5(-1.66,2.66)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Physical Activity - Standing)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	7.1(2.70)	6.1(2.70)	1(-0.72,2.72)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Step Count)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	4685(3087.00)	4151(3087.00)	534(-1429.05,2497.05)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Physical Activity - Sit to Stand Transition)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	156.4(56.30)	129.2(56.30)	27.2(-8.60,63.00)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mau-Moeller, A, 2014	High Quality	Function(Physical Activity - Standing)	3 months	19	19	Sling Exercise	CPM	MeanDiff	25.3(6.00)	25.5(6.00)	-0.2(-4.02,3.62)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Physical Activity - Stepping)	3 months	19	19	Sling Exercise	CPM	MeanDiff	9.5(3.60)	9.4(3.60)	0.1(-2.19,2.39)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Physical Activity - Sit to Stand Transition)	3 months	19	19	Sling Exercise	CPM	MeanDiff	330.5(102.40)	320.8(102.40)	9.7(-55.42,74.82)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Physical Activity - Lying/Sitting)	3 months	19	19	Sling Exercise	CPM	MeanDiff	134.4(9.10)	132.3(9.10)	2.1(-3.69,7.89)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Step Count)	3 months	19	19	Sling Exercise	CPM	MeanDiff	42037(14412.00)	36203(14412.00)	5834(-3330.71,14998.71)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(HSS - Flexion Deformity)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	10(0.00)	10(0.00)	0(0.00,0.00)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(HSS - Strength)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	8.9(1.30)	9.7(1.30)	-0.8(-1.63,0.03)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(HSS - Instability)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	10(0.00)	10(0.00)	0(0.00,0.00)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(HSS - Function)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	9.7(3.40)	10(3.40)	-0.3(-2.46,1.86)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(HSS - Strength)	3 months	19	19	Sling Exercise	CPM	MeanDiff	10(0.00)	10(0.00)	0(0.00,0.00)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(HSS - ROM)	3 months	19	19	Sling Exercise	CPM	MeanDiff	12.7(1.80)	12.9(1.80)	-0.2(-1.34,0.94)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mau-Moeller, A, 2014	High Quality	Function(HSS - Function)	3 months	19	19	Sling Exercise	CPM	MeanDiff	16.7(3.10)	17.7(3.10)	-1(-2.97,0.97)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(HSS - Flexion Deformity)	3 months	19	19	Sling Exercise	CPM	MeanDiff	10(0.00)	10(0.00)	0(0.00,0.00)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(HSS - Instability)	3 months	19	19	Sling Exercise	CPM	MeanDiff	10(0.00)	10(0.00)	0(0.00,0.00)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Function(Active Flexion)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	91.8(6.90)	87.4(6.90)	4.4(0.01, 8.79)	Treatment 1 Significant (P-value<.05)
Mau-Moeller, A, 2014	High Quality	Function(Passive Flexion)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	95.3(7.40)	89.2(7.40)	6.1(1.39, 10.81)	Treatment 1 Significant (P-value<.05)
Mau-Moeller, A, 2014	High Quality	Function(Postural Control (Eyes Closed) - Velocity (anterior-posterior))	Discharge	19	19	Sling Exercise	CPM	MeanDiff	25.71(6.44)	21.21(6.44)	4.5(0.40, 8.60)	Treatment 1 Significant (P-value<.05)
Mau-Moeller, A, 2014	High Quality	Function(HSS - ROM)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	12.3(1.00)	11.5(1.00)	0.8(0.16, 1.44)	Treatment 1 Significant (P-value<.05)

Table 39: PICO 2 part 3- Sling vs CPM: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mau-Moeller, A, 2014	High Quality	Other(SF-36 - Mental Health)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	68.1(18.10)	66.2(18.10)	1.9(-9.61,13.41)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Other(SF-36 - Mental Health)	3 months	19	19	Sling Exercise	CPM	MeanDiff	72.7(18.20)	69.4(18.20)	3.3(-8.27,14.87)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Other(Length of Hospital Stay)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	9.99(0.31)	10.52(0.32)	-0.53(-0.73,-0.33)	Not Significant (P-value>.05)

Table 40: PICO 2 part 3- Sling vs CPM: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Mau-Moeller, A, 2014	High Quality	Pain(WOMAC - Pain)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	15.2(3.70)	14.9(3.70)	0.3(-2.05,2.65)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Pain(WOMAC - Pain)	3 months	19	19	Sling Exercise	CPM	MeanDiff	15.2(3.60)	14.7(3.60)	0.5(-1.79,2.79)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Pain(VAS Pain)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	1.22(1.73)	1.78(1.73)	-0.56(-1.66,0.54)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Pain(HSS - Pain)	Discharge	19	19	Sling Exercise	CPM	MeanDiff	24.3(6.40)	22.3(6.40)	2(-2.07,6.07)	Not Significant (P-value>.05)
Mau-Moeller, A, 2014	High Quality	Pain(HSS - Pain)	3 months	19	19	Sling Exercise	CPM	MeanDiff	23.1(6.10)	20.9(6.10)	2.2(-1.68,6.08)	Not Significant (P-value>.05)

Table 41: PICO 2 part 4- Mobilization vs CPM: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Adverse Event(Erythema)	Post-Op	40	40	CPM	Slider Board	RD	2.50%	0.00%	0.03(-0.02,0.07)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Complications (total))	Post-Op	40	40	CPM	Slider Board	RR	10.00%	15.00%	0.67(0.20,2.18)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Swelling)	Post-Op	40	40	CPM	Slider Board	RD	5.00%	0.00%	0.05(-0.02,0.12)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Mild Infection)	Post-Op	40	40	CPM	Slider Board	RD	0.00%	2.50%	-0.03(-0.07,0.02)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Manipulation)		40	40	CPM	Slider Board	RR	2.50%	2.50%	1.00(0.06,15.44)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(DVT)	Post-Op	40	40	CPM	Slider Board	RD	0.00%	10.00%	-0.10(-0.19,-0.01)	Treatment 1 Significant (P-value<.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Hematoma)		40	40	CPM	Slider Board	RR	2.50%	2.50%	1.00(0.06,15.44)	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Adverse Event(Wound Drainage requiring Withholding Physical Therapy)	Post-Op	33	40	Drop and Dangle	Continuous Passive Motion	RR	9.09%	27.50%	0.33(0.10,1.09)	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Adverse Event(Closed Manipulation)	Post-Op	33	40	Drop and Dangle	Continuous Passive Motion	RR	9.09%	2.50%	3.64(0.40,33.34)	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Adverse Event(Deep Venous Thrombosis)	Post-Op	33	40	Drop and Dangle	Continuous Passive Motion	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Kumar, P. J., 1996	Moderate Quality	Adverse Event(Hematoma Evacuation)	Post-Op	33	40	Drop and Dangle	Continuous Passive Motion	RR	3.03%	7.50%	0.40(0.04,3.70)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Adverse Event(Manipulation Under Anesthesia)	6 weeks	36	33	Drop and Dangle	CPM	RR	2.78%	3.03%	0.92(0.06,14.07)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Adverse Event(Surgical Wound Bleeding)	6 days	36	33	Drop and Dangle	CPM	RD	0.00%	3.03%	-0.03(-0.09,0.03)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Adverse Event(Readmission)	2 weeks	36	33	Drop and Dangle	CPM	RD	2.78%	0.00%	0.03(-0.03,0.08)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Adverse Event(Superficial Wound Necrosis)	1 year	36	33	Drop and Dangle	CPM	RD	2.78%	0.00%	0.03(-0.03,0.08)	Not Significant (P-value>.05)

Table 42: PICO 2 part 4- Mobilization vs CPM: Composite

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Pongkunakorn, A., 2014	Low Quality	Other(Knee Society Score)	1 year	36	33	Drop and Dangle	CPM	MeanDiff	88.8(8.90)	92(7.10)	-3.2(-6.98,0.58)	Not Significant (P-value>.05)

Table 43: PICO 2 part 4- Mobilization vs CPM: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Function(Flexion)	Discharge	40	40	CPM	Slider Board	MeanDiff	61(14.00)	62(17.00)	-1(-7.82,5.82)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Extension)	Discharge	40	40	CPM	Slider Board	MeanDiff	-8(4.00)	-8(4.00)	0(-1.75,1.75)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Extension)	3 months	33	28	CPM	Slider Board	MeanDiff	-4(4.00)	-4(3.00)	0(-1.76,1.76)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - General Health)	3 months	36	32	CPM	Slider Board	MeanDiff	69(21.00)	68(19.00)	1(-8.51,10.51)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(WOMAC Function)	3 months	34	32	CPM	Slider Board	MeanDiff	73(13.00)	72(17.00)	1(-6.33,8.33)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Physical Functioning)	3 months	36	32	CPM	Slider Board	MeanDiff	46(18.00)	45(21.00)	1(-8.36,10.36)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(WOMAC Stiffness)	3 months	34	32	CPM	Slider Board	MeanDiff	63(15.00)	63(21.00)	0(-8.85,8.85)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Flexion)	3 months	33	28	CPM	Slider Board	MeanDiff	94(11.00)	96(14.00)	-2(-8.40,4.40)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Role Physical)	3 months	36	32	CPM	Slider Board	MeanDiff	19(26.00)	36(41.00)	-17(-33.55,-0.45)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(WOMAC Function)	6 months	34	32	CPM	Slider Board	MeanDiff	74(15.00)	81(15.00)	-7(-14.24,0.24)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Function(SF-36 - General Health)	6 months	36	32	CPM	Slider Board	MeanDiff	73(21.00)	72(18.00)	1(-8.27,10.27)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Extension)	6 months	33	28	CPM	Slider Board	MeanDiff	-4(4.00)	-2(3.00)	-2(-3.76,-0.24)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Physical Functioning)	6 months	36	32	CPM	Slider Board	MeanDiff	46(20.00)	53(24.00)	-7(-17.58,3.58)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Flexion)	6 months	33	28	CPM	Slider Board	MeanDiff	98(13.00)	96(22.00)	2(-7.28,11.28)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(WOMAC Stiffness)	6 months	34	32	CPM	Slider Board	MeanDiff	65(21.00)	73(19.00)	-8(-17.65,1.65)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Role Physical)	6 months	36	32	CPM	Slider Board	MeanDiff	40(40.00)	51(43.00)	-11(-30.82,8.82)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - PCS)	3 months	36	32	CPM	Slider Board	MeanDiff	34(7.00)	35(9.00)	-1(-4.87,2.87)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Social Function)	3 months	36	32	CPM	Slider Board	MeanDiff	75(23.00)	71(25.00)	4(-7.47,15.47)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Vitality)	3 months	36	32	CPM	Slider Board	MeanDiff	53(20.00)	59(19.00)	-6(-15.27,3.27)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - PCS)	6 months	36	32	CPM	Slider Board	MeanDiff	36(10.00)	38(10.00)	-2(-6.76,2.76)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Vitality)	6 months	36	32	CPM	Slider Board	MeanDiff	60(18.00)	65(19.00)	-5(-13.83,3.83)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Social Function)	6 months	36	32	CPM	Slider Board	MeanDiff	81(22.00)	79(28.00)	2(-10.07,14.07)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Physical Functioning)	3 months	32	34	Slider Board	No Intervention	MeanDiff	45(21.00)	45(20.00)	0(-9.91,9.91)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Extension)	6 months	28	32	Slider Board	No Intervention	MeanDiff	-2(3.00)	-2(5.00)	0(-2.06,2.06)	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Function(Passive Extension)	5 days	33	40	Drop and Dangle	Continuous Passive Motion	Author Reported	9.2(.)	9.3(.)	NA	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Function(Extension Lag)	5 days	33	40	Drop and Dangle	Continuous Passive Motion	Author Reported	8.3(.)	6.8(.)	NA	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Function(Passive Flexion)	5 days	33	40	Drop and Dangle	Continuous Passive Motion	Author Reported	84.5(.)	83.1(.)	NA	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Function(Passive Extension)	6 weeks	33	40	Drop and Dangle	Continuous Passive Motion	Author Reported	6.4(.)	5.8(.)	NA	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Function(Passive Flexion)	6 weeks	33	40	Drop and Dangle	Continuous Passive Motion	Author Reported	104.1(.)	104.9(.)	NA	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Function(Extension Lag)	6 weeks	33	40	Drop and Dangle	Continuous Passive Motion	Author Reported	0.6(.)	1.3(.)	NA	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Function(Passive Extension)	3 months	33	40	Drop and Dangle	Continuous Passive Motion	Author Reported	2.3(.)	4.3(.)	NA	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Function(Passive Flexion)	3 months	33	40	Drop and Dangle	Continuous Passive Motion	Author Reported	114.6(.)	111.1(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Kumar, P. J., 1996	Moderate Quality	Function(Extension Lag)	3 months	33	40	Drop and Dangle	Continuous Passive Motion	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Function(Passive Flexion)	3 days	36	33	Drop and Dangle	CPM	MeanDiff	86.4(12.10)	84.7(12.20)	1.7(-4.04,7.44)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Function(Passive Flexion)	4 days	36	33	Drop and Dangle	CPM	MeanDiff	91.3(10.00)	91.9(9.20)	-0.6(-5.13,3.93)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Function(Passive Flexion)	5 days	36	33	Drop and Dangle	CPM	MeanDiff	95.7(6.00)	92.4(10.70)	3.3(-0.84,7.44)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Function(Passive Flexion)	6 days	36	33	Drop and Dangle	CPM	MeanDiff	98.1(5.90)	96.4(7.50)	1.7(-1.50,4.90)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Function(Passive Flexion)	7 days	36	33	Drop and Dangle	CPM	MeanDiff	98.2(7.20)	97.5(5.00)	0.7(-2.21,3.61)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Function(Flexion Contracture)	6 weeks	36	33	Drop and Dangle	CPM	MeanDiff	7.1(7.10)	5.3(5.30)	1.8(-1.14,4.74)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Function(Passive Flexion)	6 weeks	36	33	Drop and Dangle	CPM	MeanDiff	99.8(10.40)	103.9(10.40)	-4.1(-9.01,0.81)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Function(Knee Society Score - Function)	1 year	36	33	Drop and Dangle	CPM	MeanDiff	89(7.40)	91.1(7.20)	-2.1(-5.55,1.35)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Function(Flexion Contracture)	1 year	36	33	Drop and Dangle	CPM	MeanDiff	1.5(4.20)	1.9(4.10)	-0.4(-2.36,1.56)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Function(Passive Flexion)	1 year	36	33	Drop and Dangle	CPM	MeanDiff	112(10.40)	111.6(12.60)	0.4(-5.08,5.88)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Pongkunakorn, A., 2014	Low Quality	Function(Passive Flexion)	Discharge	36	33	Drop and Dangle	CPM	MeanDiff	100.6(6.80)	96.4(10.20)	4.2(0.07, 8.33)	Treatment 1 Significant (P-value<.05)
Pongkunakorn, A., 2014	Low Quality	Function(Passive Flexion)	1 day	36	33	Drop and Dangle	CPM	MeanDiff	67(14.20)	59.1(3.20)	7.9(3.13, 12.67)	Treatment 1 Significant (P-value<.05)
Pongkunakorn, A., 2014	Low Quality	Function(Passive Flexion)	2 days	36	33	Drop and Dangle	CPM	MeanDiff	76.6(14.20)	69.8(13.30)	6.8(0.31, 13.29)	Treatment 1 Significant (P-value<.05)

Table 44: PICO 2 part 4- Mobilization vs CPM: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Other(SF-36 - Mental Health)	3 months	36	32	CPM	Slider Board	MeanDiff	79(17.00)	78(18.00)	1(-7.35,9.35)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Other(SF-36 - Mental Health)	6 months	36	32	CPM	Slider Board	MeanDiff	83(13.00)	79(20.00)	4(-4.13,12.13)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Other(SF-36 - MCS)	3 months	36	32	CPM	Slider Board	MeanDiff	54(10.00)	53(11.00)	1(-4.02,6.02)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Other(SF-36 - MCS)	6 months	36	32	CPM	Slider Board	MeanDiff	57(8.00)	57(10.00)	0(-4.34,4.34)	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Other(Average Length of Stay)		33	40	Drop and Dangle	Continuous Passive Motion	Author Reported	12.5(.)	12.1(.)	NA	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Other(Patients Discharged Home (knees))	Discharge	33	40	Drop and Dangle	Continuous Passive Motion	RR	45.45%	42.50%	1.07(0.64,1.80)	Not Significant (P-value>.05)
Kumar, P. J., 1996	Moderate Quality	Other(Patients Sent to Rehabilitation Unit)		33	40	Drop and Dangle	Continuous Passive Motion	RR	54.55%	57.50%	0.95(0.63,1.43)	Not Significant (P-value>.05)
Pongkunakorn, A., 2014	Low Quality	Other(Length of Stay)	Discharge	36	33	Drop and Dangle	CPM	MeanDiff	8.3(1.70)	7.4(2.10)	0.9(-0.01,1.81)	Not Significant (P-value>.05)

Table 45: PICO 2 part 4- Mobilization vs CPM: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Pain(SF-36 - Bodily Pain)	3 months	36	32	CPM	Slider Board	MeanDiff	56(18.00)	49(20.00)	7(-2.09,16.09)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(WOMAC - Pain)	3 months	34	32	CPM	Slider Board	MeanDiff	73(17.00)	75(19.00)	-2(-10.72,6.72)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(WOMAC - Pain)	6 months	34	32	CPM	Slider Board	MeanDiff	76(15.00)	85(15.00)	-9(-16.24,-1.76)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(SF-36 - Bodily Pain)	6 months	36	32	CPM	Slider Board	MeanDiff	57(19.00)	59(21.00)	-2(-11.56,7.56)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(SF-36 - Role Emotional)	3 months	36	32	CPM	Slider Board	MeanDiff	68(41.00)	61(38.00)	7(-11.78,25.78)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(SF-36 - Role Emotional)	6 months	36	32	CPM	Slider Board	MeanDiff	73(39.00)	86(31.00)	-13(-29.66,3.66)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(WOMAC - Pain)	6 months	32	34	Slider Board	No Intervention	MeanDiff	85(15.00)	79(16.00)	6(-1.48,13.48)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(SF-36 - Bodily Pain)	6 months	32	34	Slider Board	No Intervention	MeanDiff	59(21.00)	64(22.00)	-5(-15.37,5.37)	Not Significant (P-value>.05)

Table 46: PICO 2 part 5- Mobilization vs No Mobilization: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Adverse Event(Erythema)	Post-Op	40	40	Slider Board	No Intervention	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Hematoma)		40	40	Slider Board	No Intervention	RR	2.50%	2.50%	1.00(0.06,15.44)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Manipulation)		40	40	Slider Board	No Intervention	RD	2.50%	0.00%	0.03(-0.02,0.07)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Swelling)	Post-Op	40	40	Slider Board	No Intervention	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Mild Infection)	Post-Op	40	40	Slider Board	No Intervention	RR	2.50%	2.50%	1.00(0.06,15.44)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(Complications (total))	Post-Op	40	40	Slider Board	No Intervention	RR	15.00%	10.00%	1.50(0.46,4.92)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Adverse Event(DVT)	Post-Op	40	40	Slider Board	No Intervention	RD	10.00%	0.00%	0.10(0.01,0.19)	Treatment 2 Significant (P-value<.05)

Table 47: PICO 2 part 5- Mobilization vs No Mobilization: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Function(Extension)	Discharge	40	40	Slider Board	No Intervention	MeanDiff	-8(4.00)	-8(4.00)	0(-1.75,1.75)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Flexion)	Discharge	40	40	Slider Board	No Intervention	MeanDiff	62(17.00)	65(13.00)	-3(-9.63,3.63)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Flexion)	3 months	28	32	Slider Board	No Intervention	MeanDiff	96(14.00)	91(11.00)	5(-1.44,11.44)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(WOMAC Function)	3 months	32	34	Slider Board	No Intervention	MeanDiff	72(17.00)	72(17.00)	0(-8.21,8.21)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Role Physical)	3 months	32	34	Slider Board	No Intervention	MeanDiff	36(41.00)	28(41.00)	8(-11.79,27.79)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - General Health)	3 months	32	34	Slider Board	No Intervention	MeanDiff	68(19.00)	69(19.00)	-1(-10.17,8.17)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(WOMAC Stiffness)	3 months	32	34	Slider Board	No Intervention	MeanDiff	63(21.00)	62(18.00)	1(-8.46,10.46)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Extension)	3 months	28	32	Slider Board	No Intervention	MeanDiff	-4(3.00)	-3(6.00)	-1(-3.36,1.36)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(Flexion)	6 months	28	32	Slider Board	No Intervention	MeanDiff	96(22.00)	94(21.00)	2(-8.92,12.92)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(WOMAC Stiffness)	6 months	32	34	Slider Board	No Intervention	MeanDiff	73(19.00)	69(19.00)	4(-5.17,13.17)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Function(SF-36 - General Health)	6 months	32	34	Slider Board	No Intervention	MeanDiff	72(18.00)	70(22.00)	2(-7.67,11.67)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(WOMAC Function)	6 months	32	34	Slider Board	No Intervention	MeanDiff	81(15.00)	77(18.00)	4(-3.98,11.98)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Physical Functioning)	6 months	32	34	Slider Board	No Intervention	MeanDiff	53(24.00)	55(27.00)	-2(-14.31,10.31)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Role Physical)	6 months	32	34	Slider Board	No Intervention	MeanDiff	51(43.00)	43(40.00)	8(-12.07,28.07)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Vitality)	3 months	32	34	Slider Board	No Intervention	MeanDiff	59(19.00)	56(17.00)	3(-5.72,11.72)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - PCS)	3 months	32	34	Slider Board	No Intervention	MeanDiff	35(9.00)	34(9.00)	1(-3.34,5.34)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Social Function)	3 months	32	34	Slider Board	No Intervention	MeanDiff	71(25.00)	69(24.00)	2(-9.84,13.84)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Vitality)	6 months	32	34	Slider Board	No Intervention	MeanDiff	65(19.00)	59(21.00)	6(-3.65,15.65)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - PCS)	6 months	32	34	Slider Board	No Intervention	MeanDiff	38(10.00)	38(10.00)	0(-4.83,4.83)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Function(SF-36 - Social Function)	6 months	32	34	Slider Board	No Intervention	MeanDiff	79(28.00)	79(25.00)	0(-12.83,12.83)	Not Significant (P-value>.05)

Table 48: PICO 2 part 5- Mobilization vs No Mobilization: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Other(SF-36 - Mental Health)	3 months	32	34	Slider Board	No Intervention	MeanDiff	78(18.00)	74(19.00)	4(-4.93,12.93)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Other(SF-36 - Mental Health)	6 months	32	34	Slider Board	No Intervention	MeanDiff	79(20.00)	79(19.00)	0(-9.42,9.42)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Other(SF-36 - MCS)	3 months	32	34	Slider Board	No Intervention	MeanDiff	53(11.00)	55(9.00)	-2(-6.87,2.87)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Other(SF-36 - MCS)	6 months	32	34	Slider Board	No Intervention	MeanDiff	57(10.00)	56(9.00)	1(-3.60,5.60)	Not Significant (P-value>.05)

Table 49: PICO 2 part 5- Mobilization vs No Mobilization: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Beaupre, L. A., 2001	High Quality	Pain(WOMAC - Pain)	3 months	32	34	Slider Board	No Intervention	MeanDiff	75(19.00)	73(18.00)	2(-6.94,10.94)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(SF-36 - Bodily Pain)	3 months	32	34	Slider Board	No Intervention	MeanDiff	49(20.00)	55(22.00)	-6(-16.13,4.13)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(SF-36 - Role Emotional)	3 months	32	34	Slider Board	No Intervention	MeanDiff	61(38.00)	81(34.00)	-20(-37.43,-2.57)	Not Significant (P-value>.05)
Beaupre, L. A., 2001	High Quality	Pain(SF-36 - Role Emotional)	6 months	32	34	Slider Board	No Intervention	MeanDiff	86(31.00)	84(32.00)	2(-13.20,17.20)	Not Significant (P-value>.05)

Table 50: PICO 2 part 6- Mobilization vs Mobilization: Complications

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Gildone, A., 2007	Low Quality	Adverse Event(Wound dehiscence)	Post-Op	24	24	Flexion Postop Mobilization	Extension Postop Mobilization	RD	12.50%	0.00%	0.13(-0.01,0.26)	Not Significant (P-value>.05)

Table 51: PICO 2 part 6- Mobilization vs Mobilization: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Gildone, A., 2007	Low Quality	Other(KSS)	12 weeks	24	24	Flexion Postop Mobilization	Extension Postop Mobilization	Author Reported	169.2(.)	158.73(.)	NA	Not Significant (P-value>.05)
Gildone, A., 2007	Low Quality	Other(KSS)	6 weeks	24	24	Flexion Postop Mobilization	Extension Postop Mobilization	Author Reported	144.12(.)	122.79(.)	NA	Flexion group favored (p=0.03 Significant (P-value<.05)
Gildone, A., 2007	Low Quality	Other(WOMAC)	12 weeks	24	24	Flexion Postop Mobilization	Extension Postop Mobilization	Author Reported	34.45(.)	43.25(.)	NA	Flexion group favored (p = 0. Significant (P-value<.05)

Table 52: PICO 2 part 6- Mobilization vs Mobilization: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Gildone, A., 2007	Low Quality	Function(Extensor Strength)	6 weeks	24	24	Flexion Postop Mobilization	Extension Postop Mobilization	Author Reported	3.66(.)	3.2(.)	NA	Not Significant (P-value>.05)
Gildone, A., 2007	Low Quality	Function(Flexor Strength)	6 weeks	24	24	Flexion Postop Mobilization	Extension Postop Mobilization	Author Reported	3.41(.)	3.2(.)	NA	Not Significant (P-value>.05)
Gildone, A., 2007	Low Quality	Function(Extensor Strength)	12 weeks	24	24	Flexion Postop Mobilization	Extension Postop Mobilization	Author Reported	4(.)	3.91(.)	NA	Not Significant (P-value>.05)
Gildone, A., 2007	Low Quality	Function(Flexor Strength)	12 weeks	24	24	Flexion Postop Mobilization	Extension Postop Mobilization	Author Reported	3.83(.)	3.91(.)	NA	Not Significant (P-value>.05)
Gildone, A., 2007	Low Quality	Function(Passive Flexion)	6 weeks	24	24	Flexion Postop Mobilization	Extension Postop Mobilization	Author Reported	109.79(.)	101.04(.)	NA	Flexion group favored (p = 0. Significant (P-value<.05)
Gildone, A., 2007	Low Quality	Function(Passive Flexion)	12 weeks	24	24	Flexion Postop Mobilization	Extension Postop Mobilization	Author Reported	116.66(.)	110.83(.)	NA	Flexion group favored (p = 0. Significant (P-value<.05)

Table 53: PICO 2 part 6- Mobilization vs Mobilization: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Gildone, A., 2007	Low Quality	Pain(Pain Verbal Numeric Scale)	6 weeks	24	24	Flexion Postop Mobilization	Extension Postop Mobilization	Author Reported	3.041(.)	3.75(.)	NA	Flexion group favored (p = 0. Significant (P-value<.05)
Gildone, A., 2007	Low Quality	Pain(Pain Verbal Numeric Scale)	12 weeks	24	24	Flexion Postop Mobilization	Extension Postop Mobilization	Author Reported	1.33(.)	2.25(.)	NA	Flexion group favored (p = 0. Significant (P-value<.05)

Table 54: PICO 2 part 7- Bracing/Splinting vs No Bracing/Splinting: Complications

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Horton, T. C., 2002	High Quality	Adverse Event(Wound Complication)	NR	27	28	Splint	No Splint	RD	0.00%	3.57%	-0.04(-0.10,0.03)	Not Significant (P-value>.05)

Table 55: PICO 2 part 7- Bracing/Splinting vs No Bracing/Splinting: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Horton, T. C., 2002	High Quality	Function(Fixed Flexion Deformity)	3 months	27	28	Splint	No Splint	MeanDiff	3.8(4.90)	2.9(4.40)	0.9(-1.56,3.36)	Not Significant (P-value>.05)
Horton, T. C., 2002	High Quality	Function(Extension Lag)	3 months	27	28	Splint	No Splint	MeanDiff	3.8(4.90)	2.9(4.40)	0.9(-1.56,3.36)	Not Significant (P-value>.05)
Horton, T. C., 2002	High Quality	Function(Active Flexion)	3 months	27	28	Splint	No Splint	MeanDiff	94(12.70)	95.9(12.90)	-1.9(-8.67,4.87)	Not Significant (P-value>.05)
Tanaka, Y., 2017	High Quality	Function(Rate of change in quadriceps strength)	2 weeks	13	13	Hybrid Assistive Limb	Conventional Rehab	MeanDiff	172.4(28.40)	62.2(85.70)	110.2(-53.35,273.75)	Not Significant (P-value>.05)
Tanaka, Y., 2017	High Quality	Function(Rate of change in quadriceps strength)	3 weeks	13	13	Hybrid Assistive Limb	Conventional Rehab	MeanDiff	249.2(362.60)	94.3(115.00)	154.9(-51.89,361.69)	Not Significant (P-value>.05)
Tanaka, Y., 2017	High Quality	Function(Rate of change in walking speed)	3 weeks	13	13	Hybrid Assistive Limb	Conventional Rehab	MeanDiff	20(22.30)	16.2(16.30)	3.8(-11.22,18.82)	Not Significant (P-value>.05)
Tanaka, Y., 2017	High Quality	Function(Rate of change in walking speed)	2 weeks	13	13	Hybrid Assistive Limb	Conventional Rehab	MeanDiff	9.5(11.20)	0(10.00)	9.5(1.34,17.66)	Treatment 1 Significant (P-value<.05)

Table 56: PICO 2 part 7- Bracing/Splinting vs No Bracing/Splinting: Other

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Horton, T. C., 2002	High Quality	Other(Post-op Stay)		27	28	Splint	No Splint	Author Reporte d	14(.)	14(.)	NA	Not Significant (P-value>.05)

Table 57: PICO 2 part 7- Bracing/Splinting vs No Bracing/Splinting: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Tanaka, Y., 2017	High Quality	Pain(Number of participants with high NRS scores (≥ 6) for pain)	1 week	13	13	Hybrid Assistive Limb	Conventional Rehab	RR	7.69%	46.15%	0.17(0.02,1.20)	Not Significant (P-value>.05)
Tanaka, Y., 2017	High Quality	Pain(Number of participants with high NRS scores (≥ 6) for pain)	2 weeks	13	13	Hybrid Assistive Limb	Conventional Rehab	RR	15.38%	38.46%	0.40(0.09,1.70)	Not Significant (P-value>.05)
Tanaka, Y., 2017	High Quality	Pain(Number of participants with high NRS scores (≥ 6) for pain)	3 weeks	13	13	Hybrid Assistive Limb	Conventional Rehab	RD	0.00%	7.69%	-0.08(-0.22,0.07)	Not Significant (P-value>.05)

Table 58: PICO 2 part 8- Bracing/Splinting vs Bracing/Splinting: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
De Fine, M., 2017	Moderate Quality	Adverse Event(Complications)	Post-Op	31	31	High-flexion (70 degrees)	Mild-flexion (30 degrees)	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Gibbons, C. E., 2001	Moderate Quality	Adverse Event(Superficial Infections)		30	30	Cryocuff Cold Therapy	Robert Jones Bandage	RR	6.67%	6.67%	1.00(0.15,6.64)	Not Significant (P-value>.05)
Li, B., 2012	High Quality	Adverse Event(DVT)	Post-Op	55	55	Flexion	Extension	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Li, B., 2012	High Quality	Adverse Event(Wound Infection)	Post-Op	55	55	Flexion	Extension	RR	1.82%	1.82%	1.00(0.06,15.59)	Not Significant (P-value>.05)
Li, B., 2017	High Quality	Adverse Event(DVT)	Post-Op	54	54	Flexion: Leg elevated 25 cm at the ankle over a backing pad with a 20-cm backing pad being set behind the upper calf to bend the knee mildly	Extension: Leg elevated 25 cm at the ankle over a backing pad with full extension of the knee	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Ma, T., 2008	High Quality	Adverse Event(DVT)	6 weeks	49	46	Flexion	Extension	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Ma, T., 2008	High Quality	Adverse Event(Common Peroneal Wound Infections)	6 weeks	49	46	Flexion	Extension	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Ma, T., 2008	High Quality	Adverse Event(Manipulation Under Anaesthesia)	6 weeks	49	46	Flexion	Extension	RR	2.04%	2.17%	0.94(0.06,14.58)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ma, T., 2008	High Quality	Adverse Event(Superficial Wound Infection)	6 weeks	49	46	Flexion	Extension	RR	4.08%	4.35%	0.94(0.14,6.39)	Not Significant (P-value>.05)
Ma, T., 2008	High Quality	Adverse Event(Wound Breakdown)	6 weeks	49	46	Flexion	Extension	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)

Table 59: PICO 2 part 8- Bracing/Splinting vs Bracing/Splinting: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
De Fine, M., 2017	Moderate Quality	Function(Fixed Flexion Deformity - less than or equal to 10 degrees)		31	31	High-flexion (70 degrees)	Mild-flexion (30 degrees)	RR	6.45%	9.68%	0.67(0.12,3.72)	Not Significant (P-value>.05)
De Fine, M., 2017	Moderate Quality	Function(Fixed Flexion Deformity - less than or equal to 5 degrees)	7 days	31	31	High-flexion (70 degrees)	Mild-flexion (30 degrees)	RR	19.35%	6.45%	3.00(0.66,13.73)	Not Significant (P-value>.05)
De Fine, M., 2017	Moderate Quality	Function(Fixed Flexion Deformity - 0 degrees)	7 days	31	31	High-flexion (70 degrees)	Mild-flexion (30 degrees)	RR	74.19%	83.87%	0.88(0.68,1.15)	Not Significant (P-value>.05)
De Fine, M., 2017	Moderate Quality	Function(ROM)	7 days	31	31	High-flexion (70 degrees)	Mild-flexion (30 degrees)	MeanDiff	86.2(13.20)	86.7(10.50)	-0.5(-6.44,5.44)	Not Significant (P-value>.05)
Gibbons, C. E., 2001	Moderate Quality	Function(Range of Motion)	10 days	30	30	Cryocuff Cold Therapy	Robert Jones Bandage	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Li, B., 2012	High Quality	Function(Fixed Flexion Deformity)	3 days	55	55	Flexion	Extension	MeanDiff	4.4(1.20)	4.6(1.60)	-0.2(-0.73,0.33)	Not Significant (P-value>.05)
Li, B., 2012	High Quality	Function(Fixed Flexion Deformity)	7 days	55	55	Flexion	Extension	MeanDiff	3.2(1.00)	3.5(1.10)	-0.3(-0.69,0.09)	Not Significant (P-value>.05)
Li, B., 2012	High Quality	Function(Fixed Flexion Deformity)	6 weeks	55	55	Flexion	Extension	MeanDiff	1.6(0.70)	1.9(0.90)	-0.3(-0.60,0.00)	Not Significant (P-value>.05)
Li, B., 2012	High Quality	Function(Range of Active Knee Flexion)	6 weeks	55	55	Flexion	Extension	MeanDiff	98(21.00)	96(19.00)	2(-5.48,9.48)	Not Significant (P-value>.05)
Li, B., 2012	High Quality	Function(Range of Active Knee Flexion)	3 days	55	55	Flexion	Extension	MeanDiff	64(12.00)	51(18.00)	13(7.28, 18.72)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Li, B., 2012	High Quality	Function(Range of Active Knee Flexion)	7 days	55	55	Flexion	Extension	MeanDiff	80(15.00)	71(13.00)	9(3.75,14.25)	Treatment 1 Significant (P-value<.05)
Li, B., 2017	High Quality	Function(Range of Motion/Active Knee Flexion)	Baseline	54	54	Flexion: Leg elevated 25 cm at the ankle over a backing pad with a 20-cm backing pad being set behind the upper calf to bend the knee mildly	Extension: Leg elevated 25 cm at the ankle over a backing pad with full extension of the knee	MeanDiff	94.1(16.80)	96.1(17.40)	-2(-8.45,4.45)	Not Significant (P-value>.05)
Li, B., 2017	High Quality	Function(Number of people conducting straight-leg raising initiatively)	1 day	54	54	Flexion: Leg elevated 25 cm at the ankle over a backing pad with a 20-cm backing pad being set behind the upper calf to bend the knee mildly	Extension: Leg elevated 25 cm at the ankle over a backing pad with full extension of the knee	RR	57.41%	53.70%	1.07(0.6,1.50)	Not Significant (P-value>.05)
Li, B., 2017	High Quality	Function(Number of people conducting straight-leg raising initiatively)	7 days	54	54	Flexion: Leg elevated 25 cm at the ankle over a backing pad with a 20-cm backing pad being set behind the upper calf to bend the knee mildly	Extension: Leg elevated 25 cm at the ankle over a backing pad with full extension of the knee	RR	94.44%	83.33%	1.13(0.9,1.30)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Li, B., 2017	High Quality	Function(Range of Motion/Active Knee Flexion)	6 weeks	54	54	Flexion: Leg elevated 25 cm at the ankle over a backing pad with a 20-cm backing pad being set behind the upper calf to bend the knee mildly	Extension: Leg elevated 25 cm at the ankle over a backing pad with full extension of the knee	MeanDiff	98.4(16.10)	97.1(15.40)	1.3(-4.64,7.24)	Not Significant (P-value>.05)
Li, B., 2017	High Quality	Function(Number of people conducting straight-leg raising initiatives)	3 days	54	54	Flexion: Leg elevated 25 cm at the ankle over a backing pad with a 20-cm backing pad being set behind the upper calf to bend the knee mildly	Extension: Leg elevated 25 cm at the ankle over a backing pad with full extension of the knee	RR	85.19%	61.11%	1.39(1.10,1.77)	Treatment 1 Significant (P-value<.05)
Li, B., 2017	High Quality	Function(Range of Motion/Active Knee Flexion)	3 days	54	54	Flexion: Leg elevated 25 cm at the ankle over a backing pad with a 20-cm backing pad being set behind the upper calf to bend the knee mildly	Extension: Leg elevated 25 cm at the ankle over a backing pad with full extension of the knee	MeanDiff	65.3(11.90)	52.6(18.80)	12.7(6.77,18.63)	Treatment 1 Significant (P-value<.05)
Li, B., 2017	High Quality	Function(Range of Motion/Active Knee Flexion)	7 days	54	54	Flexion: Leg elevated 25 cm at the ankle over a backing pad with a 20-cm backing pad being set behind the upper calf to bend the knee mildly	Extension: Leg elevated 25 cm at the ankle over a backing pad with full extension of the knee	MeanDiff	82.4(11.70)	77.3(12.50)	5.1(0.53,9.67)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ma, T., 2008	High Quality	Function(Range of Motion)	6 weeks	49	46	Flexion	Extension	MeanDiff	94(14.00)	98(13.00)	-4(-9.43,1.43)	Not Significant (P-value>.05)

Table 60: PICO 2 part 8- Bracing/Splinting vs Bracing/Splinting: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
De Fine, M., 2017	Moderate Quality	Other(Length of Hospital Stay)	Discharge	31	31	High-flexion (70 degrees)	Mild-flexion (30 degrees)	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Gibbons, C. E., 2001	Moderate Quality	Other(Length of Stay)	Discharge	30	30	Cryocuff Cold Therapy	Robert Jones Bandage	Author Reported	13(.)	11(.)	NA	Not Significant (P-value>.05)
Ma, T., 2008	High Quality	Other(Length of Stay)	Discharge	49	46	Flexion	Extension	MeanDiff	7.43(3.00)	7.11(2.40)	0.32(-0.77,1.41)	Not Significant (P-value>.05)

Table 61: PICO 2 part 9- Manual Intervention vs No Manual Intervention: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Licciardone, J. C., 2004	High Quality	Function(FIM - Locomotion - change from Rehab Unit Admission to Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	2.9(1.00)	3.3(1.10)	-0.4(-1.19,0.39)	Not Significant (P-value>.05)
Licciardone, J. C., 2004	High Quality	Function(FIM Self Care - change from Rehab Unit Admission to Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	1.5(0.60)	1.7(0.60)	-0.2(-0.65,0.25)	Not Significant (P-value>.05)
Licciardone, J. C., 2004	High Quality	Function(FIM - Communication - change from Rehab Unit Admission to Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	0(0.10)	0(0.00)	0(-0.04,0.04)	Not Significant (P-value>.05)
Licciardone, J. C., 2004	High Quality	Function(SF-36 Physical Functioning - change from Rehab Admission to 4 wks after Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	-4.3(28.90)	-3.8(28.90)	-0.5(-21.96,20.96)	Not Significant (P-value>.05)
Licciardone, J. C., 2004	High Quality	Function(SF-36 - General Health - change from Rehab Admission to 4 wks after Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	2.5(16.40)	5.3(10.40)	-2.8(-12.40,6.80)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Licciardone, J. C., 2004	High Quality	Function(SF-36 - Social Functioning - change from Rehab Admission to 4 wks after Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	16.3(41.90)	17.2(25.90)	-0.9(-25.17,23.37)	Not Significant (P-value>.05)
Licciardone, J. C., 2004	High Quality	Function(FIM Mobility - change from Rehab Unit Admission to Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	2.3(0.90)	2.5(0.90)	-0.2(-0.87,0.47)	Not Significant (P-value>.05)
Licciardone, J. C., 2004	High Quality	Function(FIM Sphincter Control - change from Rehab Unit Admission to Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	2.4(1.50)	1.2(1.80)	1.2(-0.06,2.46)	Not Significant (P-value>.05)
Licciardone, J. C., 2004	High Quality	Function(FIM Total Score-change from Rehab Unit Admission to Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	27.1(7.80)	26.6(8.10)	0.5(-5.43,6.43)	Not Significant (P-value>.05)
Licciardone, J. C., 2004	High Quality	Function(FIM - Social Cognition - change from Rehab Unit Admission to Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	0.1(0.20)	0(0.00)	0.1(0.01,0.19)	Treatment 1 Significant (P-value<.05)
Licciardone, J. C., 2004	High Quality	Function(SF-36 - Role Limitations, Physical - - change from Rehab Admission to 4 wks after Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	-15(41.00)	9.4(18.60)	-24.4(-45.86,-2.94)	Treatment 2 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Licciardone, J. C., 2004	High Quality	Function(SF-36 - Vitality - change from Rehab Admission to 4 wks after Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	8.3(19.20)	29.4(29.90)	-21.1(-40.77,-1.43)	Treatment 2 Significant (P-value<.05)

Table 62: PICO 2 part 9- Manual Intervention vs No Manual Intervention: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Licciardone, J. C., 2004	High Quality	Other(SF-36 - Role Limitations, emotional- - change from Rehab Admission to 4 wks after Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	26.7(45.80)	29.2(51.80)	-2.5(-39.39,34.39)	Not Significant (P-value>.05)
Licciardone, J. C., 2004	High Quality	Other(SF-36 - Mental Health - change from Rehab Admission to 4 wks after Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	14.4(20.60)	3(10.00)	11.4(0.41,22.39)	Treatment 1 Significant (P-value<.05)
Licciardone, J. C., 2004	High Quality	Other(Rehabilitation Efficiency)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	2.1(0.80)	3.4(1.00)	-1.3(-1.99,-0.61)	Treatment 2 Significant (P-value<.05)
Licciardone, J. C., 2004	High Quality	Other(Length of Stay - at Rehab Unit Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	15(6.70)	8.3(3.00)	6.7(3.20, 10.20)	Treatment 2 Significant (P-value<.05)

Table 63: PICO 2 part 9- Manual Intervention vs No Manual Intervention: Pain

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Licciardone, J. C., 2004	High Quality	(SF-36 - Bodily Pain - change from Rehab Admission to 4 wks after Discharge)	Post-Op	19	11	Osteopathic Manipulative Treatment	Sham Treatment	MeanDiff	21.5(28.40)	23(26.70)	-1.5(-21.80,18.80)	Not Significant (P-value>.05)

Table 64: PICO 2 part 10- Stretching vs Stretching: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Chow, T. P., 2010	High Quality	Function(Active Range of Knee Flexion)	Post-Op	33	32	Proprioceptive Neuromuscular Facilitation	Active Stretching	MeanDiff	78.9(10.98)	78.3(13.34)	0.6(-5.72,6.92)	Not Significant (P-value>.05)
Chow, T. P., 2010	High Quality	Function(Passive Range of Knee Flexion)	Post-Op	33	32	Proprioceptive Neuromuscular Facilitation	Active Stretching	MeanDiff	84.6(11.18)	83.9(11.86)	0.7(-5.24,6.64)	Not Significant (P-value>.05)
Chow, T. P., 2010	High Quality	Function(Passive Range of Knee Flexion)	2 weeks	33	32	Proprioceptive Neuromuscular Facilitation	Active Stretching	MeanDiff	99.5(11.03)	97.5(11.90)	2(-4.61,8.61)	Not Significant (P-value>.05)
Chow, T. P., 2010	High Quality	Function(Active Range of Knee Flexion)	2 weeks	33	32	Proprioceptive Neuromuscular Facilitation	Active Stretching	MeanDiff	93.9(11.15)	92(12.15)	1.9(-4.71,8.51)	Not Significant (P-value>.05)
Chow, T. P., 2010	High Quality	Function(Passive Range of Knee Flexion)	Post-Op	33	35	Proprioceptive Neuromuscular Facilitation	Passive Stretching	MeanDiff	84.6(11.18)	83.5(13.21)	1.1(-5.06,7.26)	Not Significant (P-value>.05)
Chow, T. P., 2010	High Quality	Function(Active Range of Knee Flexion)	Post-Op	33	35	Proprioceptive Neuromuscular Facilitation	Passive Stretching	MeanDiff	78.9(10.98)	78.3(12.54)	0.6(-5.27,6.47)	Not Significant (P-value>.05)
Chow, T. P., 2010	High Quality	Function(Active Range of Knee Flexion)	2 weeks	33	35	Proprioceptive Neuromuscular Facilitation	Passive Stretching	MeanDiff	93.9(11.15)	95.6(11.25)	-1.7(-7.57,4.17)	Not Significant (P-value>.05)
Chow, T. P., 2010	High Quality	Function(Passive Range of Knee Flexion)	2 weeks	33	35	Proprioceptive Neuromuscular Facilitation	Passive Stretching	MeanDiff	99.5(11.03)	101.5(11.83)	-2(-8.01,4.01)	Not Significant (P-value>.05)
Chow, T. P., 2010	High Quality	Function(Passive Range of Knee Flexion)	Post-Op	32	35	Active Stretching	Passive Stretching	MeanDiff	83.9(11.86)	83.5(13.21)	0.4(-5.90,6.70)	Not Significant (P-value>.05)
Chow, T. P., 2010	High Quality	Function(Active Range of Knee Flexion)	Post-Op	32	35	Active Stretching	Passive Stretching	MeanDiff	78.3(13.34)	78.3(12.54)	0(-6.52,6.52)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Chow, T. P., 2010	High Quality	Function(Active Range of Knee Flexion)	2 weeks	32	35	Active Stretching	Passive Stretching	MeanDiff	92(12.15)	95.6(11.25)	-3.6(-10.14,2.94)	Not Significant (P-value>.05)
Chow, T. P., 2010	High Quality	Function(Passive Range of Knee Flexion)	2 weeks	32	35	Active Stretching	Passive Stretching	MeanDiff	97.5(11.90)	101.5(11.83)	-4(-10.67,2.67)	Not Significant (P-value>.05)

Table 65: PICO 2 part 11- Resistive ROM vs No Resistive ROM: Composite

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Codine, Ph, 2004	Moderate Quality	Other(KSS - "Knee Fields")	40 days	30	30	Eccentric Isokinetic Strengthening + Standard Rehab	Standard Rehab	MeanDiff	81.78(10 .97)	76.46(15 .38)	5.32(- 1.44,12. 08)	Not Significant (P-value>.05)

Table 66: PICO 2 part 11- Resistive ROM vs No Resistive ROM: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Codine, Ph, 2004	Moderate Quality	Function(Knee Flexion)	30 days	30	30	Eccentric Isokinetic Strengthening + Standard Rehab	Standard Rehab	MeanDiff	102.32(7.75)	104.64(7.80)	-2.32(-6.25,1.61)	Not Significant (P-value>.05)
Codine, Ph, 2004	Moderate Quality	Function(Knee Extension)	30 days	30	30	Eccentric Isokinetic Strengthening + Standard Rehab	Standard Rehab	MeanDiff	-2.67(3.72)	-1.25(2.20)	-1.42(-2.97,0.13)	Not Significant (P-value>.05)
Codine, Ph, 2004	Moderate Quality	Function(Max Torque - Quadriceps)	30 days	30	30	Eccentric Isokinetic Strengthening + Standard Rehab	Standard Rehab	MeanDiff	37.59(18.02)	30.09(12.83)	7.5(-0.42,15.42)	Not Significant (P-value>.05)
Codine, Ph, 2004	Moderate Quality	Function(Max Torque - Hamstrings)	30 days	30	30	Eccentric Isokinetic Strengthening + Standard Rehab	Standard Rehab	MeanDiff	52.78(25.35)	43.57(24.96)	9.21(-3.52,21.94)	Not Significant (P-value>.05)
Codine, Ph, 2004	Moderate Quality	Function(KSS - "Function Fields")	40 days	40	30	Eccentric Isokinetic Strengthening + Standard Rehab	Standard Rehab	MeanDiff	70.71(16.85)	66.92(15.26)	3.79(-3.77,11.35)	Not Significant (P-value>.05)

PICO 3: Cryotherapy

Quality Evaluation Tables

QE - Intervention - Observational

Study	Design	Participant Recruitment	Allocation	Confounding Variables	Follow-Up Length	Other Bias? (If retrospective comparative, mark Yes)	Inclusion	Strength
Morsi, E., 2002							Include	Low Quality

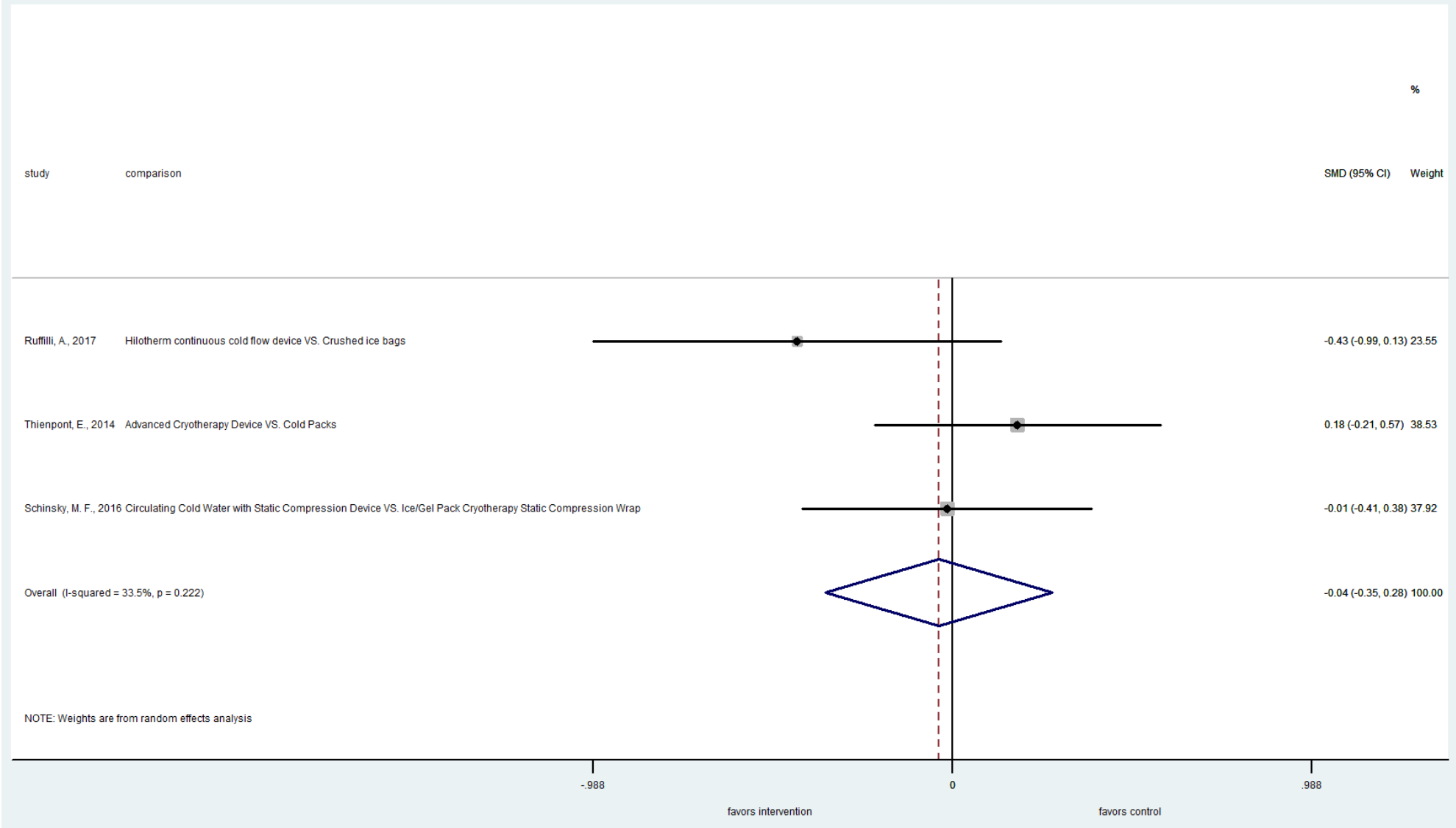
QE - Intervention - Randomized

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Demoulin, C., 2012							Include	Moderate Quality
Desteli, E. E., 2015							Include	High Quality
Gibbons, C. E., 2001							Include	Moderate Quality
He, B. J., 2013							Include	High Quality
Pan, L., 2015							Include	Moderate Quality
Radkowski, C. A., 2007							Include	High Quality
Rakel, Ba, 2014							Include	High Quality
Ruffilli, A., 2017							Include	High Quality
Rui, W., 2017							Include	High Quality
Schinsky, M. F., 2016							Include	High Quality
Su, E. P., 2012							Include	High Quality
Thienpont, E., 2014							Include	Moderate Quality

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Tsang, R. C., 2007	●	●	●	●	●	●	Include	High Quality
Tzeng, C. Y., 2015	◐	●	●	●	●	●	Include	High Quality
Wang, T. J., 2015	◐	◐	○	●	●	○	Include	Moderate Quality

Meta-Analysis Results

Figure 22: Meta-Analysis: Cryotherapy Device vs. Standard Cold Packs - Pain



Summary of Findings

Figure 23: Summary of Findings-PICO 3 part 1: Cryotherapy vs No Cryotherapy

	High Quality	Low Quality
Better Outcomes Worse Outcomes Not Significant	Rui, W., 2017	Morsi, E., 2002
Complications		
Adverse Event(Periprosthetic Fracture)		
Adverse Event(DVT)		
Adverse Event(Adverse Events)		
Adverse Event(Wound Healing)		
Adverse Event(Incision Complication)		
Adverse Event(Adverse events (overall))		
Adverse Event(Periprosthetic joint infection)		
Adverse Event(Acute Myocardial Infarction)		
Adverse Event(Cerebral Stroke)		
Function		
Function(Patients Reaching Full Extension (<5 degrees))		
Function(Patients Reaching 90 degrees of Flexion)		
Function(Average Knee Range of Motion)		
Function(Active ROM)		
Other		
Other(Time of reaching 90 degrees knee flexion)		
Other(Knee Girth)		
Pain		
Pain(VAS - Pain)		
Pain(Verbal Analog Pain Scale)		

Figure 24: Summary of Findings-PICO 3 part 2: Cryotherapy vs Cryotherapy

	High Quality				Moderate Quality			
	Radkowski, C. A., 2007	Destefi, E. E., 2015	Su, E. P., 2012	Schinsky, M. F., 2016	Ruffilli, A., 2017	Pan, L., 2015	Demoulin, C., 2012	Thienpont, E., 2014
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant								
Complications								
Adverse Event(Manipulation under Anesthesia)			●					
Adverse Event(Superficial Wound Infection)								
Adverse Event(Adverse Events)	●		●					
Adverse Event(Adverse Event)							●	
Other(Hematoma)								●
Adverse Event(Post-operative Complication)					●			
Function								
Function(Active Extension)								↓
Function(Active Flexion)								
Function(Extension)			●	●				
Function(Flexion)			●	●				
Function(Timed Up and Go Test)			●					
Function(Six Minute Walk Test)			●					
Function(Active Straight Leg Raising)								●
Function(Walking Without Aid)								●
Function(Active ROM)					●			
Other(Difference in knee circumference at patellar apex from baseline)					↑			
Other(Difference in knee circumference at 10cm over the superior patellar pole from baseline)					●			
Other(Difference in knee circumference at 15cm under the superior patellar pole from baseline)					●			
Function(Thigh/Knee Circumference Difference from Pre-op Measure)				●				
Function(Girth - measured at superior, middle and inferior to patella)			●					
Function(Girth at 10 cm Above Joint Line)							●	
Function(Girth at 5cm Below Joint Line)							●	
Function(Girth at Joint Line)							●	
Function(Bilateral Knee Girth - 5cm above patella)						↑		
Function(Bilateral Knee Girth - 5cm below patella)						↑		
Length Of Stay								
Other(Length of Stay)				●				
Other(Hospital Stay)								●
Other								
Other(Overall Satisfaction with Cooling Device)				●				
Other(Swelling)								●
Other(Patient Satisfaction)			↑					
Pain								
Pain(VAS - Pain)			●			↑	●	
Pain(Verbal Analog Pain Scale)	●							
Pain(Verbal Rating Pain Score)		●						
Pain(Numerical Rating System (NRS))				●				
Pain(Average Pain Level in Previous 24 hrs)				●				
Pain(VAS Pain Movement)								●
Pain(VAS Pain at rest)								●
Pain(VAS Pain Walking)								●

Figure 25: Summary of Findings-PICO 3 part 3: Cryotherapy vs Taping/Bracing

	Moderate Quality
	Gibbons, C. E., 2001
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Pain	
Pain(Pain Scores)	

Figure 26: Summary of Findings-PICO 3 part 4: TENS vs No TENS

	High Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Rake J, Ba, 2014
Pain(Heat Pain Threshold at the Anterior Tibialis)	●
Pain(Heat Pain Threshold at the Knee)	●
Pain(Pain during Active Extension)	●
Pain(Pain during Active Flexion)	●
Pain(Pain during Gait Speed Test)	●
Pain(Pressure Pain Threshold at the Anterior Tibialis)	●
Pain(Pressure Pain Threshold at the Knee)	●
Pain(Pain at Rest)	●

Figure 27: Summary of Findings-PICO 3 part 5: Acupuncture vs No Acupuncture

	High Quality		
	Tsang, R. C., 2007	Tzeng, C. Y., 2015	He, B. J., 2013
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant			
Complications			
Adverse Event(Rate of Vomiting over 48hr Period Post-op)		●	
Adverse Event(Rate of Analgesia-related Uroshesis)			↑
Adverse Event(Rate of Analgesia-related Nausea and Vomiting)			↑
Adverse Event(Rate of Analgesia-related Dizziness and Drowsiness)			↑
Composite			
Other(HSS Score)			↑
Function			
Function(Active ROM (L leg))	●		
Function(Active ROM (R leg))	●		
Function(ROM)			●
Function(Passive ROM (L leg))	●		
Function(Passive ROM (R leg))	●		
Function(Timed-up-and-go (TUG))	●		
Pain			
Pain(VAS - Pain Intensity)			↑
Pain(Overall Average of Mean Pain Rating at Maximum During Exercise)	●		
Pain(Overall Average of Mean Pain Rating at Rest)	●		
Pain(Pain at Rest - Chinese version of Roland-Morris Disability Questionnaire)	●		
Pain(Pain at Maximum During Exercise - Chinese version of Roland-Morris Disability Questionnaire)	●		

Figure 28: Summary of Findings-PICO 3 part 6: Biofeedback for Pain and CPM vs CPM Only

	Moderate Quality
	Wang, T. J., 2015
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Pain	
Pain(Day 2 Post-CPM Pain Rating)	●
Pain(Day 3 Post-CPM Pain Rating)	●
Pain(Day 5 Post-CPM Pain Rating)	↑
Pain(Day 1 Pre-CPM Pain Rating)	●
Pain(Day 2 Pre-CPM Pain Rating)	●
Pain(Day 3 Pre-CPM Pain Rating)	●
Pain(Day 4 Pre-CPM Pain Rating)	●
Pain(Day 5 Pre-CPM Pain Rating)	●
Pain(Day 1 Post-CPM Pain Rating)	↑
Pain(Day 4 Post-CPM Pain Rating)	↑

Detailed Data Findings

Table 67: PICO 3 part 1- Cryotherapy vs No Cryotherapy: Complications

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Morsi, E., 2002	Low Quality	Adverse Event(Wound Healing)	Post-Op	.	.	Continuous-flow cooling device	No cooling device	Author Reporte d	. %	. %	NA	Not Significant (P-value>.05)

Table 68: PICO 3 part 1- Cryotherapy vs No Cryotherapy: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Morsi, E., 2002	Low Quality	Function(Patients Reaching Full Extension (<5 degrees))	2 weeks	30	31	Continuous-flow cooling device	No cooling device	RR	50.00%	45.16%	1.11(0.65,1.88)	Not Significant (P-value>.05)
Morsi, E., 2002	Low Quality	Function(Patients Reaching 90 degrees of Flexion)	2 weeks	30	30	Continuous-flow cooling device	No cooling device	RR	80.00%	63.33%	1.26(0.91,1.75)	Not Significant (P-value>.05)
Morsi, E., 2002	Low Quality	Function(Average Knee Range of Motion)	6 weeks	30	30	Continuous-flow cooling device	No cooling device	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Morsi, E., 2002	Low Quality	Function(Patients Reaching Full Extension (<5 degrees))	6 weeks	30	30	Continuous-flow cooling device	No cooling device	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Morsi, E., 2002	Low Quality	Function(Average Knee Range of Motion)	1 week	30	30	Continuous-flow cooling device	No cooling device	MeanDiff	68(14.80)	54(11.04)	14(7.39, 20.61)	Treatment 1 Significant (P-value<.05)

Table 69: PICO 3 part 1- Cryotherapy vs No Cryotherapy: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Morsi, E., 2002	Low Quality	Pain(VAS - Pain)	Post-Op	30	30	Continuous-flow cooling device	No cooling device	MeanDiff	4.2(0.74)	6.3(1.30)	-2.1(-2.64,-1.56)	Treatment 1 Significant (P-value<.05)
Rui, W., 2017	High Quality	Pain(VAS pain)	Baseline	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	3.9(1.10)	3.8(1.30)	0.1(-0.17,0.37)	Not Significant (P-value>.05)
Rui, W., 2017	High Quality	Pain(VAS pain)	3 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	4.3(1.10)	5.1(0.90)	-0.8(-1.03,-0.57)	Treatment 1 Significant (P-value<.05)
Rui, W., 2017	High Quality	Pain(VAS pain)	7 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	3.1(1.10)	3.7(1.40)	-0.6(-0.88,-0.32)	Treatment 1 Significant (P-value<.05)
Rui, W., 2017	High Quality	Pain(VAS pain)	14 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	2.5(1.50)	3.1(1.90)	-0.6(-0.98,-0.22)	Treatment 1 Significant (P-value<.05)
Rui, W., 2017	High Quality	Pain(VAS pain)	21 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	1.7(0.90)	2.3(1.00)	-0.6(-0.81,-0.39)	Treatment 1 Significant (P-value<.05)
Rui, W., 2017	High Quality	Pain(VAS pain)	28 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	1.5(0.60)	2.3(0.90)	-0.8(-0.97,-0.63)	Treatment 1 Significant (P-value<.05)

Table 70: PICO 3 part 2- Cryotherapy vs Cryotherapy: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Demoulin, C., 2012	Moderate Quality	Adverse Event(Adverse Event)	Post-Op	22	22	Gaseous Cryotherapy	Water Circulating Cryocuff	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Demoulin, C., 2012	Moderate Quality	Adverse Event(Adverse Event)	Post-Op	22	22	Gaseous Cryotherapy	Traditional Gel Pack	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Demoulin, C., 2012	Moderate Quality	Adverse Event(Adverse Event)	Post-Op	22	22	Water Circulating Cryocuff	Traditional Gel Pack	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Desteli, E. E., 2015	High Quality	Adverse Event(Superficial Wound Infection)	Post-Op	42	45	Cryoceutical Treatment	Standard Cryotherapy	RR	4.76%	11.11%	0.43(0.09,2.09)	Not Significant (P-value>.05)
Radkowski, C. A., 2007	High Quality	Adverse Event(Adverse Events)	Post-Op	28	36	45 degree Cryotherapy	75 degree Cryotherapy	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Adverse Event(Adverse Events)	6 weeks	.	.	Cryopneumatic Device	Ice and Static Compression	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Adverse Event(Manipulation Under Anesthesia)	6 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	RR	5.83%	8.33%	0.70(0.24,2.00)	Not Significant (P-value>.05)
Thienpont, E., 2014	Moderate Quality	Adverse Event(Hematoma)	6 weeks	50	50	Advanced Cryotherapy Device	Cold Packs	RR	44.00%	46.00%	0.96(0.62,1.48)	Not Significant (P-value>.05)

Table 71: PICO 3 part 2- Cryotherapy vs Cryotherapy: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at patellar apex from baseline)	1 day	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	3.6(2.60)	4.6(3.50)	-1(-2.70,0.70)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at 10cm over the superior patellar pole from baseline)	1 day	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	3.5(2.60)	2.5(1.90)	1(-0.27,2.27)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at 15cm under the superior patellar pole from baseline)	1 day	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	2.9(1.80)	3(2.20)	-0.1(-1.21,1.01)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at 15cm under the superior patellar pole from baseline)	3 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	3.1(3.50)	4.4(2.90)	-1.3(-3.09,0.49)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at 10cm over the superior patellar pole from baseline)	3 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	4.1(2.80)	3.7(2.90)	0.4(-1.18,1.98)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at patellar apex from baseline)	3 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	4.1(3.00)	4.9(2.10)	-0.8(-2.25,0.65)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at 15cm under the superior patellar pole from baseline)	7 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	2.9(2.90)	3.3(1.80)	-0.4(-1.75,0.95)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at 10cm over the superior patellar pole from baseline)	7 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	3.8(2.80)	4.9(2.30)	-1.1(-2.53,0.33)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Function(Active ROM)	7 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	73.7(17.50)	75.6(25.80)	-1.9(-14.04,10.24)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at patellar apex from baseline)	7 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	3.2(3.40)	5(2.80)	-1.8(-3.53,-0.07)	Not Significant (P-value>.05)
Schinsky, M. F., 2016	High Quality	Function(Extension)	Discharge	49	48	Circulating Cold Water with Static Compression Device	Ice/Gel Pack Cryotherapy Static Compression Wrap	MeanDiff	8.32(6.95)	6(7.94)	2.32(-0.65,5.29)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Schinsky, M. F., 2016	High Quality	Function(Flexion)	Discharge	49	48	Circulating Cold Water with Static Compression Device	Ice/Gel Pack Cryotherapy Static Compression Wrap	MeanDiff	75.92(15.71)	79.48(11.69)	-3.56(-9.06,1.94)	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Function(Extension)	2 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	1.5(.)	1.6(.)	NA	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Function(Timed Up and Go Test)	2 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	4.5(.)	5(.)	NA	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Function(Flexion)	2 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	-33(.)	-28.7(.)	NA	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Function(Six Minute Walk Test)	2 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	-118.2(.)	-107.7(.)	NA	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Function(Extension)	6 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	-1.7(.)	-1.5(.)	NA	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Function(Six Minute Walk Test)	6 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	29.4(.)	7.9(.)	NA	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Function(Timed Up and Go Test)	6 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	-1.5(.)	-2.4(.)	NA	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Function(Flexion)	6 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	-9.5(.)	-8.6(.)	NA	Not Significant (P-value>.05)
Thienpont, E., 2014	Moderate Quality	Function(Active Straight Leg Raising)	1 day	50	50	Advanced Cryotherapy Device	Cold Packs	RR	88.00%	78.00%	1.13(0.94,1.35)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Thienpont, E., 2014	Moderate Quality	Function(Walking Without Aid)	1 day	50	50	Advanced Cryotherapy Device	Cold Packs	RR	70.00%	76.00%	0.92(0.73,1.17)	Not Significant (P-value>.05)
Thienpont, E., 2014	Moderate Quality	Function(Active Extension)	4 days	50	50	Advanced Cryotherapy Device	Cold Packs	MeanDiff	-1.5(2.50)	-1.5(4.00)	0(-1.31,1.31)	Not Significant (P-value>.05)
Thienpont, E., 2014	Moderate Quality	Function(Active Flexion)	4 days	50	50	Advanced Cryotherapy Device	Cold Packs	MeanDiff	88.5(12.50)	92(20.00)	-3.5(-10.04,3.04)	Not Significant (P-value>.05)
Thienpont, E., 2014	Moderate Quality	Function(Active Extension)	42 days	50	50	Advanced Cryotherapy Device	Cold Packs	MeanDiff	-0.5(0.70)	-0.6(0.80)	0.1(-0.19,0.39)	Not Significant (P-value>.05)
Thienpont, E., 2014	Moderate Quality	Function(Active Flexion)	42 days	50	50	Advanced Cryotherapy Device	Cold Packs	MeanDiff	114(12.00)	120(14.00)	-6(-11.11,-0.89)	Treatment 2 Significant (P-value<.05)

Table 72: PICO 3 part 2- Cryotherapy vs Cryotherapy: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Schinsky, M. F., 2016	High Quality	Other(Length of Stay)	Discharge	49	48	Circulating Cold Water with Static Compression Device	Ice/Gel Pack Cryotherapy Static Compression Wrap	MeanDiff	2.27(0.81)	2.35(0.91)	-0.08(-0.42,0.26)	Not Significant (P-value>.05)
Schinsky, M. F., 2016	High Quality	Other(Overall Satisfaction with Cooling Device)	Discharge	49	48	Circulating Cold Water with Static Compression Device	Ice/Gel Pack Cryotherapy Static Compression Wrap	MeanDiff	4.26(0.88)	4.24(0.86)	0.02(-0.33,0.37)	Not Significant (P-value>.05)
Schinsky, M. F., 2016	High Quality	Other(Overall Satisfaction with Cooling Device)	3 weeks	49	48	Circulating Cold Water with Static Compression Device	Ice/Gel Pack Cryotherapy Static Compression Wrap	MeanDiff	4.46(0.90)	4.29(0.93)	0.17(-0.19,0.53)	Not Significant (P-value>.05)
Schinsky, M. F., 2016	High Quality	Other(Overall Satisfaction with Cooling Device)	6 weeks	49	48	Circulating Cold Water with Static Compression Device	Ice/Gel Pack Cryotherapy Static Compression Wrap	MeanDiff	4.41(1.14)	4.29(0.97)	0.12(-0.30,0.54)	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Other(Patient Satisfaction)	6 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	. %	. %	NA	Cryopneumatic device group failed Significant (P-value<.05)
Thienpont, E., 2014	Moderate Quality	Other(Hospital Stay)	Discharge	50	50	Advanced Cryotherapy Device	Cold Packs	MeanDiff	4.8(1.00)	4.8(1.00)	0(-0.39,0.39)	Not Significant (P-value>.05)
Thienpont, E., 2014	Moderate Quality	Other(Swelling)	6 weeks	50	50	Advanced Cryotherapy Device	Cold Packs	MeanDiff	45(4.50)	45.5(5.10)	-0.5(-2.39,1.39)	Not Significant (P-value>.05)

Table 73: PICO 3 part 2- Cryotherapy vs Cryotherapy: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Demoulin, C., 2012	Moderate Quality	Pain(VAS - Pain)	7 days	22	22	Gaseous Cryotherapy	Traditional Gel Pack	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Demoulin, C., 2012	Moderate Quality	Pain(VAS - Pain)	7 days	22	22	Water Circulating Cryocuff	Traditional Gel Pack	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Demoulin, C., 2012	Moderate Quality	Pain(VAS - Pain)	7 days	22	22	Gaseous Cryotherapy	Water Circulating Cryocuff	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Desteli, E. E., 2015	High Quality	Pain(Verbal Rating Pain Score)	24 hours	42	45	Cryoceutical Treatment	Standard Cryotherapy	Author Reported	6.1(.)	6.6(.)	NA	Not Significant (P-value>.05)
Pan, L., 2015	Moderate Quality	Pain(VAS - Pain)	12 hours	34	35	Pressurized Salt Ice Pack	Water Ice Pack	Author Reported	. %	. %	NA	Pressurized intervention group Significant (P-value<.05)
Pan, L., 2015	Moderate Quality	Pain(VAS - Pain)	24 hours	34	35	Pressurized Salt Ice Pack	Water Ice Pack	Author Reported	. %	. %	NA	Pressurized intervention group Significant (P-value<.05)
Pan, L., 2015	Moderate Quality	Pain(VAS - Pain)	48 hours	34	35	Pressurized Salt Ice Pack	Water Ice Pack	Author Reported	. %	. %	NA	Pressurized intervention group Significant (P-value<.05)
Pan, L., 2015	Moderate Quality	Pain(VAS - Pain)	72 hours	34	35	Pressurized Salt Ice Pack	Water Ice Pack	Author Reported	. %	. %	NA	Pressurized intervention group Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Radkowski, C. A., 2007	High Quality	Pain(Verbal Analog Pain Scale)	1 day	28	36	45 degree Cryotherapy	75 degree Cryotherapy	Author Reported	6(.)	5.5(.)	NA	Not Significant (P-value>.05)
Radkowski, C. A., 2007	High Quality	Pain(Verbal Analog Pain Scale)	3 days	28	36	45 degree Cryotherapy	75 degree Cryotherapy	Author Reported	7.1(.)	6.3(.)	NA	Not Significant (P-value>.05)
Radkowski, C. A., 2007	High Quality	Pain(Verbal Analog Pain Scale)	30 days	28	36	45 degree Cryotherapy	75 degree Cryotherapy	Author Reported	6.2(.)	6.5(.)	NA	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Pain(Numerical Rating System (NRS))	1 day	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	2.6(1.80)	3.5(2.30)	-0.9(-2.04,0.24)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Pain(Numerical Rating System (NRS))	3 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	2.1(1.40)	2(1.60)	0.1(-0.73,0.93)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Pain(Numerical Rating System (NRS))	7 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	2(1.60)	1.6(1.50)	0.4(-0.46,1.26)	Not Significant (P-value>.05)
Schinsky, M. F., 2016	High Quality	Pain(Average Pain Level in Previous 24 hrs)	Discharge	49	48	Circulating Cold Water with Static Compression Device	Ice/Gel Pack Cryotherapy Static Compression Wrap	MeanDiff	4.82(2.10)	4.85(2.14)	-0.03(-0.87,0.81)	Not Significant (P-value>.05)
Schinsky, M. F., 2016	High Quality	Pain(Average Pain Level in Previous 24 hrs)	3 weeks	49	48	Circulating Cold Water with Static Compression Device	Ice/Gel Pack Cryotherapy Static Compression Wrap	MeanDiff	2.68(1.68)	2.96(2.20)	-0.28(-1.06,0.50)	Not Significant (P-value>.05)
Schinsky, M. F., 2016	High Quality	Pain(Average Pain Level in Previous 24 hrs)	6 weeks	49	48	Circulating Cold Water with Static Compression Device	Ice/Gel Pack Cryotherapy Static Compression Wrap	MeanDiff	2.36(2.03)	2.26(2.44)	0.1(-0.79,0.99)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Su, E. P., 2012	High Quality	Pain(VAS - Pain)	2 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	-9(.)	-13.5(.)	NA	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Pain(VAS - Pain)	6 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	-23.4(.)	-22.1(.)	NA	Not Significant (P-value>.05)
Thienpont, E., 2014	Moderate Quality	Pain(VAS Pain Movement)	2 days	50	50	Advanced Cryotherapy Device	Cold Packs	MeanDiff	5.5(2.50)	5.5(2.50)	0(-0.98,0.98)	Not Significant (P-value>.05)
Thienpont, E., 2014	Moderate Quality	Pain(VAS Pain at rest)	2 days	50	50	Advanced Cryotherapy Device	Cold Packs	MeanDiff	4(3.00)	3.5(2.50)	0.5(-0.58,1.58)	Not Significant (P-value>.05)
Thienpont, E., 2014	Moderate Quality	Pain(VAS Pain Walking)	2 days	50	50	Advanced Cryotherapy Device	Cold Packs	MeanDiff	5.5(2.50)	4.5(2.00)	1(0.11,1.89)	Not Significant (P-value>.05)

Table 74: PICO 3 part 3- Cryotherapy vs Taping/Bracing: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Gibbons, C. E., 2001	Moderate Quality	Pain(Pain Scores)	Post-Op	30	30	Cryocuff Cold Therapy	Robert Jones Bandage	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 75: PICO 3 part 4- TENS vs No TENS: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Rakel, Ba, 2014	High Quality	Pain(Heat Pain Threshold at the Anterior Tibialis)	Post-Op	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Heat Pain Threshold at the Knee)	Post-Op	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Pain during Active Extension)	Post-Op	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Pain during Active Flexion)	Post-Op	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Pain during Gait Speed Test)	Post-Op	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Pressure Pain Threshold at the Anterior Tibialis)	Post-Op	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Pressure Pain Threshold at the Knee)	Post-Op	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Heat Pain Threshold at the Anterior Tibialis)	6 weeks	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Heat Pain Threshold at the Knee)	6 weeks	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Pain at Rest)	6 weeks	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Rakel, Ba, 2014	High Quality	Pain(Pain during Active Extension)	6 weeks	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Pain during Active Flexion)	6 weeks	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Pain during Gait Speed Test)	6 weeks	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Pressure Pain Threshold at the Anterior Tibialis)	6 weeks	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Rakel, Ba, 2014	High Quality	Pain(Pressure Pain Threshold at the Knee)	6 weeks	122	123	Active TENS	Placebo TENS	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 76: PICO 3 part 5- Acupuncture vs No Acupuncture: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
He, B. J., 2013	High Quality	Adverse Event(Rate of Analgesia-related Uroshesis)	Post-Op	45	45	Auricular Acupressure	Control Group (sham acupuncture)	RR	6.67%	26.67%	0.25(0.08,0.83)	Treatment 1 Significant (P-value<.05)
He, B. J., 2013	High Quality	Adverse Event(Rate of Analgesia-related Nausea and Vomiting)	Post-Op	45	45	Auricular Acupressure	Control Group (sham acupuncture)	RR	17.78%	71.11%	0.25(0.13,0.48)	Treatment 1 Significant (P-value<.05)
He, B. J., 2013	High Quality	Adverse Event(Rate of Analgesia-related Dizziness and Drowsiness)	Post-Op	45	45	Auricular Acupressure	Control Group (sham acupuncture)	RR	4.44%	24.44%	0.18(0.04,0.77)	Treatment 1 Significant (P-value<.05)
Tzeng, C. Y., 2015	High Quality	Adverse Event(Rate of Vomiting over 48hr Period Post-op)	Post-Op	16	14	Electroacupuncture at Points and PCA	Electroacupuncture at Non-points and PCA	RR	50.00%	42.86%	1.17(0.54,2.54)	Not Significant (P-value>.05)
Tzeng, C. Y., 2015	High Quality	Adverse Event(Rate of Vomiting over 48hr Period Post-op)	Post-Op	16	17	Electroacupuncture at Points and PCA	Control Group (patient-controlled analgesia only; 1.5 microgram/mL fentanyl and 0.1% bupivacaine)	RR	50.00%	58.82%	0.85(0.45,1.60)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Tzeng, C. Y., 2015	High Quality	Adverse Event(Rate of Vomiting over 48hr Period Post-op)	Post-Op	14	17	Electroacupuncture at Non-points and PCA	Control Group (patient-controlled analgesia only; 1.5 microgram/mL fentanyl and 0.1% bupivacaine)	RR	42.86%	58.82%	0.73(0.35,1.50)	Not Significant (P-value>.05)

Table 77: PICO 3 part 5- Acupuncture vs No Acupuncture: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
He, B. J., 2013	High Quality	Other(HSS Score)	3 months	45	45	Auricular Acupressure	Control Group (sham acupuncture)	MeanDiff	92.89(6.99)	91.91(7.13)	0.98(-1.94,3.90)	Not Significant (P-value>.05)
He, B. J., 2013	High Quality	Other(HSS Score)	2 weeks	45	45	Auricular Acupressure	Control Group (sham acupuncture)	MeanDiff	80.24(10.68)	73.44(10.80)	6.8(2.36, 11.24)	Treatment 1 Significant (P-value<.05)

Table 78: PICO 3 part 5- Acupuncture vs No Acupuncture: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
He, B. J., 2013	High Quality	Function(ROM)	2 weeks	45	45	Auricular Acupressure	Control Group (sham acupuncture)	MeanDiff	99.78(10.33)	96.33(10.41)	3.45(-0.83,7.73)	Not Significant (P-value>.05)
He, B. J., 2013	High Quality	Function(ROM)	3 months	45	45	Auricular Acupressure	Control Group (sham acupuncture)	MeanDiff	106.58(10.84)	104.67(12.17)	1.91(-2.85,6.67)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Passive ROM (L leg))	4 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	90(15.90)	93.7(18.80)	-3.7(-16.16,8.76)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Passive ROM (R leg))	4 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	94.3(13.50)	90.7(19.50)	3.6(-8.40,15.60)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Active ROM (L leg))	4 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	65.7(21.70)	80.3(21.60)	-14.6(-30.09,0.89)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Active ROM (R leg))	4 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	73.7(15.10)	76(22.60)	-2.3(-16.06,11.46)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Passive ROM (R leg))	8 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	104(11.50)	99.7(10.30)	4.3(-3.51,12.11)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Active ROM (L leg))	8 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	87.7(17.80)	92.1(14.50)	-4.4(-16.02,7.22)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Active ROM (R leg))	8 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	87.7(14.00)	86.9(14.20)	0.8(-9.29,10.89)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Passive ROM (L leg))	8 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	103(13.20)	100.9(13.40)	2.1(-7.42,11.62)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Tsang, R. C., 2007	High Quality	Function(Timed-up-and-go (TUG))	8 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	78.4(30.70)	67.5(48.80)	10.9(-18.28,40.08)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Timed-up-and-go (TUG))	15 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	45.8(31.10)	39.8(33.40)	6(-17.10,29.10)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Active ROM (L leg))	15 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	96.5(17.10)	99.7(15.20)	-3.2(-14.78,8.38)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Active ROM (R leg))	15 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	94(15.00)	93(13.70)	1(-9.28,11.28)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Passive ROM (L leg))	15 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	107.3(15.90)	106(14.70)	1.3(-9.66,12.26)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Function(Passive ROM (R leg))	15 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	107.9(11.30)	101.5(11.90)	6.4(-1.90,14.70)	Not Significant (P-value>.05)

Table 79: PICO 3 part 5- Acupuncture vs No Acupuncture: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
He, B. J., 2013	High Quality	Pain(VAS - Pain Intensity)	12 hours	45	45	Auricular Acupressure	Control Group (sham acupuncture)	MeanDiff	4.78(1.66)	4.85(1.55)	-0.07(-0.73,0.59)	Not Significant (P-value>.05)
He, B. J., 2013	High Quality	Pain(VAS - Pain Intensity)	24 hours	45	45	Auricular Acupressure	Control Group (sham acupuncture)	MeanDiff	4.36(1.53)	4.29(1.33)	0.07(-0.52,0.66)	Not Significant (P-value>.05)
He, B. J., 2013	High Quality	Pain(VAS - Pain Intensity)	36 hours	45	45	Auricular Acupressure	Control Group (sham acupuncture)	MeanDiff	3.86(1.55)	3.93(1.41)	-0.07(-0.68,0.54)	Not Significant (P-value>.05)
He, B. J., 2013	High Quality	Pain(VAS - Pain Intensity)	48 hours	45	45	Auricular Acupressure	Control Group (sham acupuncture)	MeanDiff	3.19(1.45)	3.11(1.32)	0.08(-0.49,0.65)	Not Significant (P-value>.05)
He, B. J., 2013	High Quality	Pain(VAS - Pain Intensity)	3 days	45	45	Auricular Acupressure	Control Group (sham acupuncture)	MeanDiff	3.7(1.40)	4.43(1.47)	-0.73(-1.32,-0.14)	Treatment 1 Significant (P-value<.05)
He, B. J., 2013	High Quality	Pain(VAS - Pain Intensity)	4 days	45	45	Auricular Acupressure	Control Group (sham acupuncture)	MeanDiff	3.47(1.29)	4.1(1.19)	-0.63(-1.14,-0.12)	Treatment 1 Significant (P-value<.05)
He, B. J., 2013	High Quality	Pain(VAS - Pain Intensity)	5 days	45	45	Auricular Acupressure	Control Group (sham acupuncture)	MeanDiff	2.91(1.12)	3.51(1.16)	-0.6(-1.07,-0.13)	Treatment 1 Significant (P-value<.05)
He, B. J., 2013	High Quality	Pain(VAS - Pain Intensity)	7 days	45	45	Auricular Acupressure	Control Group (sham acupuncture)	MeanDiff	2.22(1.02)	2.87(1.08)	-0.65(-1.08,-0.22)	Treatment 1 Significant (P-value<.05)
Tsang, R. C., 2007	High Quality	Pain(Overall Average of Mean Pain Rating at Maximum During Exercise)		.	.	Acupuncture	Sham Acupuncture	Author Reported	. %	. %	-0.8(-2.00,0.40)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Tsang, R. C., 2007	High Quality	Pain(Overall Average of Mean Pain Rating at Rest)	Post-Op	15	15	Acupuncture	Sham Acupuncture	Author Reported	. %	. %	0.4(-0.60,1.30)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Rest - Chinese version of Roland-Morris Disability Questionnaire)	4 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	2.7(2.00)	3.1(2.40)	-0.4(-1.98,1.18)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Maximum During Exercise - Chinese version of Roland-Morris Disability Questionnaire)	4 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	7.9(1.50)	7.3(2.80)	0.6(-1.01,2.21)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Maximum During Exercise - Chinese version of Roland-Morris Disability Questionnaire)	5 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	7.2(1.20)	6.2(2.70)	1(-0.50,2.50)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Rest - Chinese version of Roland-Morris Disability Questionnaire)	5 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	2.8(1.90)	2.5(1.70)	0.3(-0.99,1.59)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Rest - Chinese version of Roland-Morris Disability Questionnaire)	6 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	2.3(2.00)	3(1.90)	-0.7(-2.10,0.70)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Tsang, R. C., 2007	High Quality	Pain(Pain at Maximum During Exercise - Chinese version of Roland-Morris Disability Questionnaire)	6 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	7.3(1.80)	6.1(2.70)	1.2(-0.44,2.84)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Rest - Chinese version of Roland-Morris Disability Questionnaire)	7 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	2(1.90)	3.3(2.10)	-1.3(-2.73,0.13)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Maximum During Exercise - Chinese version of Roland-Morris Disability Questionnaire)	7 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	6.9(1.90)	6(2.20)	0.9(-0.57,2.37)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Maximum During Exercise - Chinese version of Roland-Morris Disability Questionnaire)	8 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	6.8(2.00)	6.1(2.10)	0.7(-0.77,2.17)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Rest - Chinese version of Roland-Morris Disability Questionnaire)	8 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	1.9(1.90)	2.5(1.90)	-0.6(-1.96,0.76)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Maximum During Exercise - Chinese version of Roland-Morris Disability Questionnaire)	11 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	5.9(2.00)	5.7(1.80)	0.2(-1.16,1.56)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Tsang, R. C., 2007	High Quality	Pain(Pain at Rest - Chinese version of Roland-Morris Disability Questionnaire)	11 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	1.9(1.60)	2.6(1.40)	-0.7(-1.78,0.38)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Maximum During Exercise - Chinese version of Roland-Morris Disability Questionnaire)	12 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	5.9(2.20)	4.9(2.20)	1(-0.57,2.57)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Rest - Chinese version of Roland-Morris Disability Questionnaire)	12 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	2.1(1.40)	2.3(1.30)	-0.2(-1.17,0.77)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Maximum During Exercise - Chinese version of Roland-Morris Disability Questionnaire)	13 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	5.7(4.90)	4.9(1.90)	0.8(-1.86,3.46)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Rest - Chinese version of Roland-Morris Disability Questionnaire)	13 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	1.9(1.70)	2.5(1.50)	-0.6(-1.75,0.55)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Maximum During Exercise - Chinese version of Roland-Morris Disability Questionnaire)	14 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	5.5(1.90)	4.9(1.90)	0.6(-0.76,1.96)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Tsang, R. C., 2007	High Quality	Pain(Pain at Rest - Chinese version of Roland-Morris Disability Questionnaire)	14 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	2.4(1.70)	2.1(1.80)	0.3(-0.95,1.55)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Rest - Chinese version of Roland-Morris Disability Questionnaire)	15 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	2.3(2.20)	1.9(1.50)	0.4(-0.95,1.75)	Not Significant (P-value>.05)
Tsang, R. C., 2007	High Quality	Pain(Pain at Maximum During Exercise - Chinese version of Roland-Morris Disability Questionnaire)	15 days	15	15	Acupuncture	Sham Acupuncture	MeanDiff	6.3(2.60)	5.2(2.40)	1.1(-0.69,2.89)	Not Significant (P-value>.05)

Table 80: PICO 3 part 6- Biofeedback for Pain and CPM vs CPM Only: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Wang, T. J., 2015	Moderate Quality	Pain(Day 2 Post-CPM Pain Rating)	2 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	5.06(1.77)	5.27(2.03)	-0.21(-1.13,0.71)	Not Significant (P-value>.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 2 Post-CPM Pain Rating)	2 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	5.06(1.73)	5.39(2.09)	-0.33(-1.26,0.60)	Not Significant (P-value>.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 3 Post-CPM Pain Rating)	3 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	4.03(2.13)	4.73(1.77)	-0.7(-1.64,0.24)	Not Significant (P-value>.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 3 Post-CPM Pain Rating)	3 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	4.21(2.04)	4.7(1.76)	-0.49(-1.41,0.43)	Not Significant (P-value>.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 5 Post-CPM Pain Rating)	5 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	3.58(1.75)	4.16(1.63)	-0.58(-1.40,0.24)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Wang, T. J., 2015	Moderate Quality	Pain(Day 1 Pre-CPM Pain Rating)	1 day	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	4.93(1.82)	5.48(1.87)	-0.55(-1.44,0.34)	Not Significant (P-value>.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 2 Pre-CPM Pain Rating)	2 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	5.21(1.52)	4.72(1.48)	0.49(-0.23,1.21)	Not Significant (P-value>.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 2 Pre-CPM Pain Rating)	2 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	5.06(1.43)	4.67(1.47)	0.39(-0.31,1.09)	Not Significant (P-value>.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 3 Pre-CPM Pain Rating)	3 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	4.58(1.56)	4.21(1.74)	0.37(-0.43,1.17)	Not Significant (P-value>.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 3 Pre-CPM Pain Rating)	3 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	4.36(1.98)	4.12(1.92)	0.24(-0.70,1.18)	Not Significant (P-value>.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 4 Pre-CPM Pain Rating)	4 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	4.32(1.64)	3.88(1.82)	0.44(-0.40,1.28)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Wang, T. J., 2015	Moderate Quality	Pain(Day 4 Pre-CPM Pain Rating)	4 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	4.15(1.75)	4.09(1.84)	0.06(-0.81,0.93)	Not Significant (P-value>.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 5 Pre-CPM Pain Rating)	5 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	3.86(1.35)	3.55(1.91)	0.31(-0.49,1.11)	Not Significant (P-value>.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 5 Pre-CPM Pain Rating)	5 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	3.87(1.59)	3.47(1.90)	0.4(-0.45,1.25)	Not Significant (P-value>.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 1 Post-CPM Pain Rating)	1 day	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	5.9(1.88)	7.33(1.90)	-1.43(-2.34,-0.52)	Treatment 1 Significant (P-value<.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 1 Post-CPM Pain Rating)	1 day	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	5.54(1.97)	7.15(1.60)	-1.61(-2.48,-0.74)	Treatment 1 Significant (P-value<.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 4 Post-CPM Pain Rating)	4 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	3.6(1.92)	4.7(2.02)	-1.1(-2.05,-0.15)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Wang, T. J., 2015	Moderate Quality	Pain(Day 4 Post-CPM Pain Rating)	4 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	3.71(1.79)	4.73(1.93)	-1.02(-1.92,-0.12)	Treatment 1 Significant (P-value<.05)
Wang, T. J., 2015	Moderate Quality	Pain(Day 5 Post-CPM Pain Rating)	5 days	33	33	Biofeedback assisted Progressive Muscle Relaxation and CPM	Usual Care (CPM)	MeanDiff	3.36(1.47)	4.23(1.67)	-0.87(-1.63,-0.11)	Treatment 1 Significant (P-value<.05)

PICO 4: Postoperative Physical Therapist Guidance

No Relevant Studies Found for this PICO Question

PICO 5: Movement Patter Retraining

Study Quality Evaluation Tables

QE - Intervention - Randomized

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Bruun-Olsen, V., 2013	●	●	◐	●	●	●	Include	High Quality
Christiansen, C. L., 2015	●	●	◐	●	●	●	Include	High Quality
Frost, H., 2002	●	◐	●	●	○	●	Include	High Quality
Li, J., 2014	◐	◐	○	●	●	●	Include	Moderate Quality
Liao, C. D., 2015	●	●	○	●	●	●	Include	High Quality
Moffet, H., 2004	●	●	○	◐	●	●	Include	High Quality

Summary of Findings

Figure 29: Summary of Findings-PICO 5 part 1: Functional Training vs No Functional Training

	High Quality		Moderate Quality
	Frost, H., 2002	Moffet, H., 2004	Li, J., 2014
↑ Better Outcomes ↓ Worse Outcomes • Not Significant			
Complications			
Complications(Adverse Event)		•	
Composite			
Function(WOMAC - Total)		↑	
Function			
Function(Flexion)	•		
Function(Leg Extensor Power - Operated Leg)	•		
Function(6 Minute Walk Test)		↑	
Function(Walk Speed)	•		
(Berg Score)			↑
Function(10-meter Sitting-Standing Time)			↑
Function(6 minute Walking Distance)			↑
Function(HSS Score)			↑
Function(Functional Ambulation Score)			•
Function(Knee Joint Kinesthesia Grade)			•
Function(Knee Proprioception Grade)			↑
Function(WOMAC - Functional Difficulty)		↑	
Function(WOMAC - Stiffness)		↑	
Other(SF-36 - PCS)		↑	
Other(SF-36 - Physical Function)		•	
Other(SF-36 - Role-physical)		•	
Other			
Other(SF-36 - General Health)		•	
Other(SF-36 - Mental Health)		↓	
Other(SF-36 - Vitality)		•	
Other(SF-36 - MCS)		↓	
Other(SF-36 - ASHI)		•	
Other(SF-36 - Role Emotional)		•	
Other(SF-36 - Social Function)		•	
Pain			
Pain(Percentage Scoring >4 on Pain)	•		
Pain(Pain Scale)	•		
Pain(WOMAC - Pain)		↑	
Other(SF-36 - Bodily Pain)		•	

Figure 30: Summary of Findings-PICO 5 part 2: Balance Training vs No Balance Training

	High Quality	
	Christiansen, C. L., 2015	Liao, C. D., 2015
↑ Better Outcomes		
↓ Worse Outcomes		
● Not Significant		
Function		
(Weight Bearing Ratio during Five Times Sit to Stand Test)	●	
(Weight-bearing Ratio during Walking (Self-selected Speed))	●	
Function(30-Second Time Chair-Rise Test)		↑
Function(Ankle Moment during FTSST Test)	●	
Function(Ankle Moment during Walking)	●	
Function(Five Time Sit to Stand Test)	●	
Function(Functional Reach to Height Ratio)		↑
Function(Functional Reaching Distance)		↑
Function(Gait Speed)		↑
Function(Hip Moment during FTSST Test)	●	
Function(Hip Moment during Walking)	●	
Function(Knee Moment during FTSST Test)	●	
Function(Knee Moment during Walking)	●	
Function(Single Leg Stand Test, Eyes Closed)		↑
Function(Single Leg Stand Test, Eyes Open)		↑
Function(Stair Climb Test)		↑
Function(Timed Up and Go Test)		↑
Function(Walking Speed)	●	
Function(WOMAC - Physical Function)		↑
Pain		
Pain(WOMAC - Pain)		●

Figure 31: Summary of Findings-PICO 5 part 3: Gait Training vs No Gait Training

	High Quality
	Bruun-Olsen, V., 2013
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Function	
Function(6 Minute Walk Test)	↑
Function(Active Range of Motion)	●
Function(Figure-of-Eight Test)	●
Function(Index of Muscle Function (IMF))	●
Function(KOOS Function)	●
Function(KOOS Sports and Recreation)	↑
Function(Self-efficacy in Activities)	↑
Function(Timed Stair Climbing- Stair up/down)	●
Function(Timed-Stands Test)	●
Other	
Other(KOOS Symptoms)	●
Other(KOOS QOL)	●
Pain	
Pain(KOOS Pain)	●

Detailed Data Tables

Table 81: PICO 5 part 1- Functional Training vs No Functional Training: Complications

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Moffet, H., 2004	High Quality	Adverse Event(Adverse Event)	Post-Op	38	38	Intensive Functional Rehab	Standard Care		0.00%	0.00%		Not Significant (P-value>.05)

Table 82: PICO 5 part 1- Functional Training vs No Functional Training: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Moffet, H., 2004	High Quality	Function(WOMAC - Total)	4 months	38	38	Intensive Functional Rehab	Standard Care	MeanDiff	13.5(14.10)	19.4(17.60)	-5.9(-13.07,1.27)	Treatment 1 Significant (P-value<.05)
Moffet, H., 2004	High Quality	Function(WOMAC - Total)	6 months	38	37	Intensive Functional Rehab	Standard Care	MeanDiff	12(12.80)	18.6(18.50)	-6.6(-13.82,0.62)	Treatment 1 Significant (P-value<.05)
Moffet, H., 2004	High Quality	Function(WOMAC - Total)	12 months	38	31	Intensive Functional Rehab	Standard Care	MeanDiff	11.6(13.80)	15.3(16.30)	-3.7(-10.92,3.52)	Not Significant (P-value>.05)

Table 83: PICO 5 part 1- Functional Training vs No Functional Training: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Frost, H., 2002	High Quality	Function(Walk Speed)	3 months	23	24	Functional Exercise Program	Traditional Exercise Program	MeanDiff	1.42(0.39)	1.39(0.39)	0.03(-0.19,0.25)	Not Significant (P-value>.05)
Frost, H., 2002	High Quality	Function(Flexion)	3 months	23	24	Functional Exercise Program	Traditional Exercise Program	MeanDiff	97.3(12.30)	95(15.20)	2.3(-5.59,10.19)	Not Significant (P-value>.05)
Frost, H., 2002	High Quality	Function(Leg Extensor Power - Operated Leg)	3 months	23	24	Functional Exercise Program	Traditional Exercise Program	MeanDiff	1.2(0.56)	1.2(0.47)	0(-0.30,0.30)	Not Significant (P-value>.05)
Frost, H., 2002	High Quality	Function(Leg Extensor Power - Operated Leg)	6 months	23	24	Functional Exercise Program	Traditional Exercise Program	MeanDiff	1.4(0.63)	1.3(0.61)	0.1(-0.25,0.45)	Not Significant (P-value>.05)
Frost, H., 2002	High Quality	Function(Walk Speed)	6 months	23	24	Functional Exercise Program	Traditional Exercise Program	MeanDiff	1.6(0.52)	1.57(0.04)	0.03(-0.18,0.24)	Not Significant (P-value>.05)
Frost, H., 2002	High Quality	Function(Flexion)	6 months	23	24	Functional Exercise Program	Traditional Exercise Program	MeanDiff	102(9.80)	102(14.40)	0(-7.02,7.02)	Not Significant (P-value>.05)
Frost, H., 2002	High Quality	Function(Walk Speed)	12 months	23	24	Functional Exercise Program	Traditional Exercise Program	MeanDiff	1.63(0.56)	1.49(0.40)	0.14(-0.14,0.42)	Not Significant (P-value>.05)
Frost, H., 2002	High Quality	Function(Leg Extensor Power - Operated Leg)	12 months	23	24	Functional Exercise Program	Traditional Exercise Program	MeanDiff	1.7(0.81)	1.6(0.71)	0.1(-0.34,0.54)	Not Significant (P-value>.05)
Frost, H., 2002	High Quality	Function(Flexion)	12 months	23	24	Functional Exercise Program	Traditional Exercise Program	MeanDiff	103(9.30)	103(16.20)	0(-7.51,7.51)	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(10-meter Sitting-Standing Time)	1 week	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	11.4(1.10)	11.6(1.10)	-0.2(-0.76,0.36)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Li, J., 2014	Moderate Quality	Function(HSS Score)	1 week	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	55(5.80)	54.5(5.60)	0.5(-2.39,3.39)	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(HSS Score)	2 weeks	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	67.9(8.40)	67.6(5.40)	0.3(-3.27,3.87)	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(10-meter Sitting-Standing Time)	2 weeks	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	10.1(1.30)	10.7(1.30)	-0.6(-1.26,0.06)	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Knee Joint Kinesthesia Grade)	1 week	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	0.8(0.41)	0.75(0.44)	0.05(-0.17,0.27)	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(6 minute Walking Distance)	2 weeks	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	515.4(43.00)	496.1(35.10)	19.3(-0.56,39.16)	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Knee Proprioception Grade)	2 weeks	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	2(.)	1.8(0.41)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Knee Joint Kinesthesia Grade)	2 weeks	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	1(.)	0.9(0.31)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Knee Joint Kinesthesia Grade)	1 month	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	1(.)	1(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Li, J., 2014	Moderate Quality	Function(Knee Proprioception Grade)	1 month	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	2(.)	1.9(0.31)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Knee Proprioception Grade)	3 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	2(.)	2(.)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Knee Joint Kinesthesia Grade)	3 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	1(.)	1(.)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Knee Proprioception Grade)	6 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	2(.)	2(.)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Knee Joint Kinesthesia Grade)	6 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	1(.)	1(.)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Knee Proprioception Grade)	12 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	2(.)	2(.)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Knee Joint Kinesthesia Grade)	12 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	1(.)	1(.)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Functional Ambulation Score)	1 week	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	4.6(0.57)	4.5(0.68)	0.1(-0.22,0.42)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Li, J., 2014	Moderate Quality	Function(Functional Ambulation Score)	2 weeks	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	4.9(0.22)	4.9(0.30)	0(-0.13,0.13)	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Functional Ambulation Score)	1 month	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	5(.)	5(.)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Functional Ambulation Score)	3 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	5(.)	5(.)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Functional Ambulation Score)	6 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	5(.)	5(.)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(Functional Ambulation Score)	12 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	Author Reported	5(.)	5(.)	NA	Not Significant (P-value>.05)
Li, J., 2014	Moderate Quality	Function(10-meter Sitting-Standing Time)	1 month	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	9(1.00)	9.9(1.10)	-0.9(-1.43,-0.37)	Treatment 1 Significant (P-value<.05)
Li, J., 2014	Moderate Quality	Function(HSS Score)	1 month	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	77.9(8.70)	72.9(6.90)	5(1.03,8.97)	Treatment 1 Significant (P-value<.05)
Li, J., 2014	Moderate Quality	Function(10-meter Sitting-Standing Time)	3 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	8.7(1.30)	10.1(1.90)	-1.4(-2.22,-0.58)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Li, J., 2014	Moderate Quality	Function(HSS Score)	3 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	81.9(5.00)	76.1(4.30)	5.8(3.44, 8.16)	Treatment 1 Significant (P-value<.05)
Li, J., 2014	Moderate Quality	Function(HSS Score)	6 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	83.9(5.10)	77.9(3.70)	6(3.75, 8.25)	Treatment 1 Significant (P-value<.05)
Li, J., 2014	Moderate Quality	Function(10-meter Sitting-Standing Time)	6 months	30	30	Robot-assisted Walking Training and CPM and NMES	Control (CPM and NMES only)	MeanDiff	8.7(1.70)	11.1(1.90)	-2.4(-3.31, -1.49)	Treatment 1 Significant (P-value<.05)

PICO 6: Swelling/Edema Management

Study Quality Evaluation tables

QE - Intervention - Randomized

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Alkire, M. R., 2010	●	◐	○	●	●	●	Include	High Quality
De Fine, M., 2017	◐	◐	●	○	●	●	Include	Moderate Quality
Demoulin, C., 2012	●	◐	○	●	●	◐	Include	Moderate Quality
Ebert, J. R., 2013	●	●	○	●	●	●	Include	High Quality
Li, B., 2012	●	◐	◐	●	●	●	Include	High Quality
Li, B., 2017	●	◐	●	●	●	●	Include	High Quality
Ma, T., 2008	●	●	○	●	●	◐	Include	High Quality
Pan, L., 2015	◐	◐	○	●	●	●	Include	Moderate Quality
Panni, A. S., 2014	●	◐	◐	●	●	●	Include	High Quality
Ruffilli, A., 2017	●	◐	◐	●	●	●	Include	High Quality
Rui, W., 2017	●	●	○	●	●	●	Include	High Quality
Schinsky, M. F., 2016	●	◐	○	●	●	●	Include	High Quality
Su, E. P., 2012	●	◐	◐	●	●	●	Include	High Quality
Yang, Y., 2015	●	●	●	●	●	●	Include	High Quality

Summary of Findings

Figure 32: Summary of Findings-PICO 6 part 3: Cryotherapy vs No Cryotherapy

	High Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Rui, W., 2017
Complications	
Adverse Event(Periprosthetic Fracture)	●
Adverse Event(DVT)	●
Adverse Event(Adverse Events)	
Adverse Event(Wound Healing)	
Adverse Event(Incision Complication)	●
Adverse Event(Adverse events (overall))	●
Adverse Event(Periprosthetic joint infection)	●
Adverse Event(Acute Myocardial Infarction)	●
Adverse Event(Cerebral Stroke)	●
Function	
Function(Active ROM)	↑
Function(Average Knee Range of Motion)	
Function(Patients Reaching 90 degrees of Flexion)	
Function(Patients Reaching Full Extension (<5 degrees))	
Other	
Other(Knee Girth)	↑
Other(Time of reaching 90 degrees knee flexion)	↑
Pain	
Pain(VAS - Pain)	
Pain(VAS Pain)	↑
Pain(Verbal Analog Pain Scale)	

Figure 33: Summary of Findings-PICO 6 part 4: Cryotherapy vs Cryotherapy

	High Quality		Moderate Quality	
	Su, E. P., 2012	Schinsky, M. F., 2016	Ruffilli, A., 2017	Pan, L., 2015 Demoulin, C., 2012
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant				
Complications				
Adverse Event(Post-operative Complication)			●	
Function				
Function(Active ROM)			●	
Other				
Other(Difference in knee circumference at patellar apex from baseline)			●	
Other(Difference in knee circumference at 10cm over the superior patellar pole from baseline)			●	
Other(Difference in knee circumference at 15cm under the superior patellar pole from baseline)			●	
Other(Thigh/Knee Circumference Difference from Pre-op Measure)		●		
Other(Girth - measured at superior, middle and inferior to patella)	●			
Other(Girth at 10 cm Above Joint Line)				●
Other(Girth at 5cm Below Joint Line)				●
Other(Girth at Joint Line)				●
Other(Bilateral Knee Girth - 5cm above patella)				↑
Other(Bilateral Knee Girth - 5cm below patella)				↑

comparisons: 1- Su compared cryopneumatic device to ice and static compression

Schinsky compared circulating cold water and static compression device to ice/gel pack static compression wrap

Ruffilli compared continuous cold flow device to crushed ice bags

Pan compared pressurized salt ice pack to water ice pack

Demoulin compared gaseous cryotherapy to water circulating cuff and to traditional ice pack.

Figure 34: Summary of Findings-PICO 6 part 6: Positioning vs No Positioning

	High Quality
	Alkire, M. R., 2010
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Function	
Function(Edema)	●

Figure 35: Summary of Findings-PICO 6 part 5: Positioning vs Positioning

	High Quality					Moderate Quality
	Li, B., 2012	Li, B., 2017	Ma, T., 2008	Panni, A. S., 2014	Yang, Y., 2015	De Fine, M., 2017
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant						
Complications						
Adverse Event(DVT)			●		●	
Adverse Event(Local Complications)				●		
Adverse Event(Superficial Infection)			●		●	
Adverse Event(Deep Infection)					●	
Adverse Event(Common Peroneal Wound Infections)			●			
Adverse Event(Manipulation Under Anaesthesia)			●			
Adverse Event(Wound Breakdown)			●			
Function						
Function(Knee Flexion)				↑		
Function(ROM)			●		↑	
Length Of Stay						
Other(LOS)			●		↑	
Other						
Other(Circumference of the knee)		↑				●
Other(Increasing Rate of Knee Circumference)	↑			↑		
Other(Area of Ecchymosis)				↑		
Other(Post-op Knee Circumference)					↑	
Diagnosis						
Adverse Event(DVT)				●		

Figure 36: Summary of Findings-PICO 6 part 7: Manual Lymphatic Drainage vs No Manual Lymphatic Drainage

	High Quality
	Ebert, J. R., 2013
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Function	
Function(Active Knee Extension)	↓
Function(Active Knee Flexion)	↑
Function(KOOS ADL)	●
Function(KOOS Sport and Recreation)	●
Other(Ankle Girth)	●
Other(Calf Girth)	●
Other(Midpatella Girth)	●
Other(Thigh Girth)	●
Other	
Other(KOOS Quality of Life)	●
Other(KOOS Symptoms)	↓
Pain	
Pain(KOOS Pain)	●
Pain(Pain at Rest)	↑

Detailed Data Tables

Table 84: PICO 6 part 3- Cryotherapy vs No Cryotherapy: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Rui, W., 2017	High Quality	Adverse Event(Incision Complication)	Post-Op	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	RR	5.88%	7.19%	0.82(0.35,1.92)	Not Significant (P-value>.05)
Rui, W., 2017	High Quality	Adverse Event(Adverse events (overall))	NA	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	RR	10.46%	9.80%	1.07(0.55,2.08)	Not Significant (P-value>.05)
Rui, W., 2017	High Quality	Adverse Event(Periprosthetic Fracture)	Post-Op	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	RD	0.00%	1.31%	-0.01(-0.03,0.00)	Not Significant (P-value>.05)
Rui, W., 2017	High Quality	Adverse Event(Periprosthetic joint infection)	NA	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	RR	1.31%	1.96%	0.67(0.11,3.93)	Not Significant (P-value>.05)
Rui, W., 2017	High Quality	Adverse Event(DVT)	Post-Op	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	RR	1.96%	1.96%	1.00(0.21,4.88)	Not Significant (P-value>.05)
Rui, W., 2017	High Quality	Adverse Event(Acute Myocardial Infarction)	Post-Op	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	RR	1.31%	1.96%	0.67(0.11,3.93)	Not Significant (P-value>.05)
Rui, W., 2017	High Quality	Adverse Event(Cerebral Stroke)	Post-Op	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	RR	1.96%	0.65%	3.00(0.32,28.52)	Not Significant (P-value>.05)

Table 85: PICO 6 part 3- Cryotherapy vs No Cryotherapy: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Rui, W., 2017	High Quality	Function(Active ROM)	Baseline	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	109.6(15.20)	108.5(14.80)	1.1(-2.26,4.46)	Not Significant (P-value>.05)
Rui, W., 2017	High Quality	Function(Active ROM)	3 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	58(12.40)	53.8(11.20)	4.2(1.55, 6.85)	Treatment 1 Significant (P-value<.05)
Rui, W., 2017	High Quality	Function(Active ROM)	7 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	98(8.40)	89.4(8.20)	8.6(6.74, 10.46)	Treatment 1 Significant (P-value<.05)
Rui, W., 2017	High Quality	Function(Active ROM)	14 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	107.2(9.50)	94.8(10.30)	12.4(10.18,14.62)	Treatment 1 Significant (P-value<.05)
Rui, W., 2017	High Quality	Function(Active ROM)	21 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	115.2(8.60)	103.9(9.40)	11.3(9.28,13.32)	Treatment 1 Significant (P-value<.05)
Rui, W., 2017	High Quality	Function(Active ROM)	28 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	119.8(9.00)	106.2(8.90)	13.6(11.59,15.61)	Treatment 1 Significant (P-value<.05)

Table 86: PICO 6 part 3- Cryotherapy vs No Cryotherapy: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Rui, W., 2017	High Quality	Other(Knee Girth)	Baseline	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	35(3.80)	35.7(3.60)	-0.7(-1.53,0.13)	Not Significant (P-value>.05)
Rui, W., 2017	High Quality	Other(Knee Girth)	3 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	38.2(3.60)	38.3(4.00)	-0.1(-0.95,0.75)	Not Significant (P-value>.05)
Rui, W., 2017	High Quality	Other(Knee Girth)	7 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	37.4(4.20)	37.6(4.00)	-0.2(-1.12,0.72)	Not Significant (P-value>.05)
Rui, W., 2017	High Quality	Other(Time of reaching 90 degrees knee flexion)	NA	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	6.6(1.30)	8.6(1.40)	-2(-2.30,-1.70)	Treatment 1 Significant (P-value<.05)
Rui, W., 2017	High Quality	Other(Knee Girth)	14 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	36.5(3.90)	37.4(4.10)	-0.9(-1.80,-0.00)	Treatment 1 Significant (P-value<.05)
Rui, W., 2017	High Quality	Other(Knee Girth)	21 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	36.2(3.40)	37.2(3.70)	-1(-1.80,-0.20)	Treatment 1 Significant (P-value<.05)
Rui, W., 2017	High Quality	Other(Knee Girth)	28 days	153	153	Ethyl chloride spray	Control (no ethyl chloride spray)	MeanDiff	35.5(3.10)	36.7(3.50)	-1.2(-1.94,-0.46)	Treatment 1 Significant (P-value<.05)

Table 87: PICO 6 part 4- Cryotherapy vs Cryotherapy: Complications

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ruffilli, A., 2017	High Quality	Adverse Event(Post-operative Complication)	Post-Op	24	26	Hilotherm continuous cold flow device	Crushed ice bags	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)

Table 88: PICO 6 part 4- Cryotherapy vs Cryotherapy: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Demoulin, C., 2012	Moderate Quality	Function(Girth at 10 cm Above Joint Line)	7 days	22	22	Gaseous Cryotherapy	Water Circulating Cryocuff	MeanDiff	46.8(5.70)	47.4(4.80)	-0.6(-3.71,2.51)	Not Significant (P-value>.05)
Demoulin, C., 2012	Moderate Quality	Function(Girth at 5cm Below Joint Line)	7 days	22	22	Gaseous Cryotherapy	Water Circulating Cryocuff	MeanDiff	37.6(3.30)	38.9(3.60)	-1.3(-3.34,0.74)	Not Significant (P-value>.05)
Demoulin, C., 2012	Moderate Quality	Function(Girth at Joint Line)	7 days	22	22	Gaseous Cryotherapy	Water Circulating Cryocuff	MeanDiff	43(4.50)	42.9(3.40)	0.1(-2.26,2.46)	Not Significant (P-value>.05)
Demoulin, C., 2012	Moderate Quality	Function(Girth at 10 cm Above Joint Line)	7 days	22	22	Gaseous Cryotherapy	Traditional Gel Pack	MeanDiff	46.8(5.70)	47.9(5.90)	-1.1(-4.53,2.33)	Not Significant (P-value>.05)
Demoulin, C., 2012	Moderate Quality	Function(Girth at 5cm Below Joint Line)	7 days	22	22	Gaseous Cryotherapy	Traditional Gel Pack	MeanDiff	37.6(3.30)	38.8(4.50)	-1.2(-3.53,1.13)	Not Significant (P-value>.05)
Demoulin, C., 2012	Moderate Quality	Function(Girth at Joint Line)	7 days	22	22	Gaseous Cryotherapy	Traditional Gel Pack	MeanDiff	43(4.50)	43.5(4.50)	-0.5(-3.16,2.16)	Not Significant (P-value>.05)
Demoulin, C., 2012	Moderate Quality	Function(Girth at 10 cm Above Joint Line)	7 days	22	22	Water Circulating Cryocuff	Traditional Gel Pack	MeanDiff	47.4(4.80)	47.9(5.90)	-0.5(-3.68,2.68)	Not Significant (P-value>.05)
Demoulin, C., 2012	Moderate Quality	Function(Girth at 5cm Below Joint Line)	7 days	22	22	Water Circulating Cryocuff	Traditional Gel Pack	MeanDiff	38.9(3.60)	38.8(4.50)	0.1(-2.31,2.51)	Not Significant (P-value>.05)
Demoulin, C., 2012	Moderate Quality	Function(Girth at Joint Line)	7 days	22	22	Water Circulating Cryocuff	Traditional Gel Pack	MeanDiff	42.9(3.40)	43.5(4.50)	-0.6(-2.96,1.76)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at patellar apex from baseline)	1 day	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	3.6(2.60)	4.6(3.50)	-1(-2.70,0.70)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at 10cm over the superior patellar pole from baseline)	1 day	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	3.5(2.60)	2.5(1.90)	1(-0.27,2.27)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at 15cm under the superior patellar pole from baseline)	1 day	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	2.9(1.80)	3(2.20)	-0.1(-1.21,1.01)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at 15cm under the superior patellar pole from baseline)	3 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	3.1(3.50)	4.4(2.90)	-1.3(-3.09,0.49)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at 10cm over the superior patellar pole from baseline)	3 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	4.1(2.80)	3.7(2.90)	0.4(-1.18,1.98)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at patellar apex from baseline)	3 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	4.1(3.00)	4.9(2.10)	-0.8(-2.25,0.65)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at 15cm under the superior patellar pole from baseline)	7 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	2.9(2.90)	3.3(1.80)	-0.4(-1.75,0.95)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at 10cm over the superior patellar pole from baseline)	7 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	3.8(2.80)	4.9(2.30)	-1.1(-2.53,0.33)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Function(Active ROM)	7 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	73.7(17.50)	75.6(25.80)	-1.9(-14.04,10.24)	Not Significant (P-value>.05)
Ruffilli, A., 2017	High Quality	Other(Difference in knee circumference at patellar apex from baseline)	7 days	24	26	Hilotherm continuous cold flow device	Crushed ice bags	MeanDiff	3.2(3.40)	5(2.80)	-1.8(-3.53,-0.07)	Not Significant (P-value>.05)
Schinsky, M. F., 2016	High Quality	Function(Thigh/Knee Circumference Difference from Pre-op Measure)	NR	49	48	Circulating Cold Water with Static Compression Device	Ice/Gel Pack Cryotherapy Static Compression Wrap	MeanDiff	2.56(5.37)	2.83(5.28)	-0.27(-2.39,1.85)	Not Significant (P-value>.05)
Schinsky, M. F., 2016	High Quality	Function(Thigh/Knee Circumference Difference from Pre-op Measure)	3 weeks	49	48	Circulating Cold Water with Static Compression Device	Ice/Gel Pack Cryotherapy Static Compression Wrap	MeanDiff	1.83(4.70)	2.69(5.25)	-0.86(-2.84,1.12)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Schinsky, M. F., 2016	High Quality	Function(Thigh/Knee Circumference Difference from Pre-op Measure)	6 weeks	49	48	Circulating Cold Water with Static Compression Device	Ice/Gel Pack Cryotherapy Static Compression Wrap	MeanDiff	0.94(4.56)	1.56(4.32)	-0.62(-2.39,1.15)	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Function(Girth - measured at superior, middle and inferior to patella)	2 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Su, E. P., 2012	High Quality	Function(Girth - measured at superior, middle and inferior to patella)	6 weeks	103	84	Cryopneumatic Device	Ice and Static Compression	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 89: PICO 6 part 4- Cryotherapy vs Cryotherapy: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Pan, L., 2015	Moderate Quality	Function(Bilateral Knee Girth - 5cm above patella)	12 hours	34	35	Pressurized Salt Ice Pack	Water Ice Pack	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Pan, L., 2015	Moderate Quality	Function(Bilateral Knee Girth - 5cm below patella)	12 hours	34	35	Pressurized Salt Ice Pack	Water Ice Pack	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Pan, L., 2015	Moderate Quality	Function(Bilateral Knee Girth - 5cm above patella)	24 hours	34	35	Pressurized Salt Ice Pack	Water Ice Pack	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Pan, L., 2015	Moderate Quality	Function(Bilateral Knee Girth - 5cm below patella)	24 hours	34	35	Pressurized Salt Ice Pack	Water Ice Pack	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Pan, L., 2015	Moderate Quality	Function(Bilateral Knee Girth - 5cm above patella)	72 hours	34	35	Pressurized Salt Ice Pack	Water Ice Pack	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Pan, L., 2015	Moderate Quality	Function(Bilateral Knee Girth - 5cm below patella)	72 hours	34	35	Pressurized Salt Ice Pack	Water Ice Pack	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Pan, L., 2015	Moderate Quality	Function(Bilateral Knee Girth - 5cm above patella)	48 hours	34	35	Pressurized Salt Ice Pack	Water Ice Pack	Author Reported	. %	. %	NA	Pressurized intervention group Significant (P-value<.05)
Pan, L., 2015	Moderate Quality	Function(Bilateral Knee Girth - 5cm below patella)	48 hours	34	35	Pressurized Salt Ice Pack	Water Ice Pack	Author Reported	. %	. %	NA	Pressurized intervention group Significant (P-value<.05)

Table 90: PICO 6 part 5- Positioning vs Positioning: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ma, T., 2008	High Quality	Adverse Event(DVT)	6 weeks	49	46	Flexion	Extension	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Ma, T., 2008	High Quality	Adverse Event(Common Peroneal Wound Infections)	6 weeks	49	46	Flexion	Extension	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Ma, T., 2008	High Quality	Adverse Event(Manipulation Under Anaesthesia)	6 weeks	49	46	Flexion	Extension	RR	2.04%	2.17%	0.94(0.06,14.58)	Not Significant (P-value>.05)
Ma, T., 2008	High Quality	Adverse Event(Superficial Wound Infection)	6 weeks	49	46	Flexion	Extension	RR	4.08%	4.35%	0.94(0.14,6.39)	Not Significant (P-value>.05)
Ma, T., 2008	High Quality	Adverse Event(Wound Breakdown)	6 weeks	49	46	Flexion	Extension	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Panni, A. S., 2014	High Quality	Adverse Event(Local Complications)	NR	50	50	Flexion	Control	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Panni, A. S., 2014	High Quality	Adverse Event(DVT)	NR	50	50	Flexion	Control	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Yang, Y., 2015	High Quality	Adverse Event(Superficial Infection)	Post-Op	46	46	Flexion	Extension	RR	4.35%	2.17%	2.00(0.19,21.30)	Not Significant (P-value>.05)
Yang, Y., 2015	High Quality	Adverse Event(Deep Infection)	Post-Op	46	46	Flexion	Extension	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Yang, Y., 2015	High Quality	Adverse Event(DVT)	Post-Op	46	46	Flexion	Extension	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)

Table 91: PICO 6 part 5- Positioning vs Positioning: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ma, T., 2008	High Quality	Function(Range of Motion)	6 weeks	49	46	Flexion	Extension	MeanDiff	94(14.00)	98(13.00)	-4(-9.43,1.43)	Not Significant (P-value>.05)
Panni, A. S., 2014	High Quality	Function(Knee Flexion)	7 days	50	50	Flexion	Control	MeanDiff	105(4.00)	98(7.00)	7(4.77,9.23)	Treatment 1 Significant (P-value<.05)
Yang, Y., 2015	High Quality	Function(ROM)	6 months	46	46	Flexion	Extension	MeanDiff	102.6(7.40)	102.5(6.60)	0.1(-2.77,2.97)	Not Significant (P-value>.05)
Yang, Y., 2015	High Quality	Function(ROM)	6 weeks	46	46	Flexion	Extension	MeanDiff	107.7(8.30)	102.5(6.60)	5.2(2.14, 8.26)	Treatment 1 Significant (P-value<.05)

Table 92: PICO 6 part 5- Positioning vs Positioning: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
De Fine, M., 2017	Moderate Quality	Function(Knee Circumference)	7 days	31	31	High-flexion (70 degrees)	Mild-flexion (30 degrees)	MeanDiff	44(3.20)	43.8(3.20)	0.2(-1.39,1.79)	Not Significant (P-value>.05)
Ma, T., 2008	High Quality	Other(Length of Stay)	Discharge	49	46	Flexion	Extension	MeanDiff	7.43(3.00)	7.11(2.40)	0.32(-0.77,1.41)	Not Significant (P-value>.05)
Li, B., 2012	High Quality	Function(Increasing Rate of Knee Circumference)	3 days	55	55	Flexion	Extension	MeanDiff	3(0.70)	5.7(2.10)	-2.7(-3.29,-2.11)	Treatment 1 Significant (P-value<.05)
Li, B., 2012	High Quality	Function(Increasing Rate of Knee Circumference)	7 days	55	55	Flexion	Extension	MeanDiff	2.1(0.50)	4.8(1.90)	-2.7(-3.22,-2.18)	Treatment 1 Significant (P-value<.05)
Li, B., 2017	High Quality	Other(Circumference of the knee)	Baseline	54	54	Flexion: Leg elevated 25 cm at the ankle over a backing pad with a 20-cm backing pad being set behind the upper calf to bend the knee mildly	Extension: Leg elevated 25 cm at the ankle over a backing pad with full extension of the knee	MeanDiff	36.5(1.70)	36.6(1.50)	-0.1(-0.70,0.50)	Not Significant (P-value>.05)
Li, B., 2017	High Quality	Other(Circumference of the knee)	3 days	54	54	Flexion: Leg elevated 25 cm at the ankle over a backing pad with a 20-cm backing pad being set behind the upper calf to bend the knee mildly	Extension: Leg elevated 25 cm at the ankle over a backing pad with full extension of the knee	MeanDiff	3.1(1.50)	4.7(2.60)	-1.6(-2.40,-0.80)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Li, B., 2017	High Quality	Other(Circumference of the knee)	7 days	54	54	Flexion: Leg elevated 25 cm at the ankle over a backing pad with a 20-cm backing pad being set behind the upper calf to bend the knee mildly	Extension: Leg elevated 25 cm at the ankle over a backing pad with full extension of the knee	MeanDiff	2.7(1.60)	3.6(2.20)	-0.9(-1.63,-0.17)	Treatment 1 Significant (P-value<.05)
Panni, A. S., 2014	High Quality	Function(Increasing Rate of Knee Circumference)	3 days	50	50	Flexion	Control	MeanDiff	3.3(0.70)	5.3(1.80)	-2(-2.54,-1.46)	Treatment 1 Significant (P-value<.05)
Panni, A. S., 2014	High Quality	Function(Increasing Rate of Knee Circumference)	7 days	50	50	Flexion	Control	MeanDiff	2(0.90)	4.4(1.60)	-2.4(-2.91,-1.89)	Treatment 1 Significant (P-value<.05)
Panni, A. S., 2014	High Quality	Other(Area of Ecchymosis)	3 days	50	50	Flexion	Control	MeanDiff	0.5(0.30)	1.1(0.40)	-0.6(-0.74,-0.46)	Treatment 1 Significant (P-value<.05)
Yang, Y., 2015	High Quality	Other(LOS)		46	46	Flexion	Extension	MeanDiff	10.8(1.10)	12.6(1.90)	-1.8(-2.43,-1.17)	Treatment 1 Significant (P-value<.05)
Yang, Y., 2015	High Quality	Other(Post-op Knee Circumference)	Post-Op	46	46	Flexion	Extension	MeanDiff	40.5(1.60)	43.3(3.80)	-2.8(-3.99,-1.61)	Treatment 1 Significant (P-value<.05)

Table 93: PICO 6 part 6- Positioning vs No Positioning: Other

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Alkire, M. R., 2010	High Quality	Function(Edema)	1 day	32	32	CPM	No CPM	Author Reporte d	47(.)	43(.)	NA	Not Significant (P-value>.05)
Alkire, M. R., 2010	High Quality	Function(Edema)	2 days	32	32	CPM	No CPM	Author Reporte d	48(.)	44(.)	NA	Not Significant (P-value>.05)

Table 94: PICO 6 part 7- Manual Lymphatic Drainage vs No Manual Lymphatic Drainage: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ebert, J. R., 2013	High Quality	Function(Active Knee Flexion)	Baseline	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	124.04(9.91)	127.31(10.34)	-3.27(-8.88,2.34)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Extension)	Baseline	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	4.5(3.38)	5.3(4.92)	-0.8(-3.12,1.52)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Flexion)	2 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	91.92(13.22)	86.58(13.24)	5.34(-2.00,12.68)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Flexion)	2 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	84.33(15.16)	82.62(16.10)	1.71(-6.96,10.38)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Extension)	2 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	4.29(3.15)	4(3.41)	0.29(-1.53,2.11)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Extension)	2 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	2.42(1.39)	3.85(3.88)	-1.43(-3.02,0.16)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Flexion)	3 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	90.58(12.36)	89.28(13.36)	1.3(-5.83,8.43)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Extension)	3 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	2.63(2.36)	3.2(2.59)	-0.57(-1.94,0.80)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Flexion)	3 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	89.42(14.01)	87.96(13.57)	1.46(-6.20,9.12)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Extension)	3 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	2.96(2.36)	3.36(2.44)	-0.4(-1.73,0.93)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ebert, J. R., 2013	High Quality	Function(Active Knee Extension)	4 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	2.13(1.94)	2.48(1.37)	-0.35(-1.29,0.59)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Flexion)	4 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	92.13(13.13)	87.3(13.45)	4.83(-2.54,12.20)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(KOOS ADL)	Baseline	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	54.01(14.98)	56.62(12.91)	-2.61(-10.39,5.17)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(KOOS Sport and Recreation)	Baseline	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	18.44(15.62)	14.04(13.80)	4.4(-3.80,12.60)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(KOOS Sport and Recreation)	6 weeks	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	10.21(12.13)	8.85(12.66)	1.36(-5.51,8.23)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(KOOS ADL)	6 weeks	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	75.46(11.30)	72.37(12.08)	3.09(-3.39,9.57)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Flexion)	4 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	97.39(10.02)	88.22(13.15)	9.17(2.72,15.62)	Treatment 1 Significant (P-value<.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Flexion)	6 weeks	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	118.95(8.89)	108.96(14.12)	9.99(3.50,16.48)	Treatment 1 Significant (P-value<.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Extension)	4 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	1.3(0.82)	2.78(1.76)	-1.48(-2.23,-0.73)	Treatment 2 Significant (P-value<.05)
Ebert, J. R., 2013	High Quality	Function(Active Knee Extension)	6 weeks	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	1.77(1.43)	5.61(4.22)	-3.84(-5.56,-2.12)	Treatment 2 Significant (P-value<.05)

Table 95: PICO 6 part 7- Manual Lymphatic Drainage vs No Manual Lymphatic Drainage: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ebert, J. R., 2013	High Quality	Other(Midpatella Girth)	Baseline	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	41.4(2.51)	40.63(2.92)	0.77(-0.74,2.28)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Thigh Girth)	Baseline	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	47.88(3.13)	46.66(4.01)	1.22(-0.77,3.21)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Thigh Girth)	2 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	53.01(2.13)	52.03(3.42)	0.98(-0.59,2.55)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Thigh Girth)	2 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	53.37(3.54)	52.12(3.94)	1.25(-0.82,3.32)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Midpatella Girth)	2 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	47.31(2.58)	45.95(3.01)	1.36(-0.19,2.91)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Midpatella Girth)	2 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	47.24(2.32)	45.94(3.09)	1.3(-0.21,2.81)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Midpatella Girth)	3 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	47.18(2.89)	45.9(2.67)	1.28(-0.27,2.83)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Thigh Girth)	3 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	52.89(3.30)	52.9(3.81)	-0.01(-1.98,1.96)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Thigh Girth)	3 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	53.26(2.54)	53.09(2.91)	0.17(-1.34,1.68)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Midpatella Girth)	3 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	47.08(3.12)	45.78(2.94)	1.3(-0.38,2.98)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ebert, J. R., 2013	High Quality	Other(Midpatella Girth)	4 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	46.77(2.34)	46.05(2.45)	0.72(-0.61,2.05)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Thigh Girth)	4 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	52.52(3.25)	53.08(4.18)	-0.56(-2.63,1.51)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Thigh Girth)	4 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	52.78(2.81)	53.21(3.14)	-0.43(-2.08,1.22)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Midpatella Girth)	4 days	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	46.63(2.54)	46.08(2.99)	0.55(-0.98,2.08)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Thigh Girth)	6 weeks	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	47.55(2.91)	47(3.01)	0.55(-1.09,2.19)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Midpatella Girth)	6 weeks	24	26	Manual Lymphatic Drainage	Control (No MLD)	MeanDiff	42.83(2.22)	42.63(2.57)	0.2(-1.13,1.53)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Ankle Girth)	Baseline	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	23.24(1.22)	22.82(0.98)	0.42(-0.20,1.04)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Calf Girth)	Baseline	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	36.75(2.15)	36.21(2.82)	0.54(-0.84,1.92)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Ankle Girth)	2 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	24.02(1.34)	23.29(1.29)	0.73(-0.00,1.46)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Ankle Girth)	2 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	23.94(1.75)	23.17(1.02)	0.77(-0.03,1.57)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Calf Girth)	2 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	39.29(2.61)	38.61(2.58)	0.68(-0.76,2.12)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ebert, J. R., 2013	High Quality	Other(Calf Girth)	2 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	39.53(2.07)	38.63(3.24)	0.9(-0.60,2.40)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Ankle Girth)	3 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	24.13(1.71)	23.82(1.68)	0.31(-0.63,1.25)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Calf Girth)	3 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	39.77(1.87)	39.32(2.26)	0.45(-0.70,1.60)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Ankle Girth)	3 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	24.16(1.54)	23.77(1.72)	0.39(-0.51,1.29)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Calf Girth)	3 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	39.74(1.81)	39.45(2.05)	0.29(-0.78,1.36)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Calf Girth)	4 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	39.9(1.95)	39.8(2.47)	0.1(-1.13,1.33)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Calf Girth)	4 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	40.15(1.47)	39.68(2.36)	0.47(-0.61,1.55)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Ankle Girth)	4 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	24.2(1.63)	24.91(1.78)	-0.71(-1.66,0.24)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Ankle Girth)	4 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	24.68(1.15)	24.69(1.09)	-0.01(-0.63,0.61)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Calf Girth)	6 weeks	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	36.54(1.58)	36.24(1.82)	0.3(-0.64,1.24)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(Ankle Girth)	6 weeks	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	23.28(1.11)	23.44(1.31)	-0.16(-0.83,0.51)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ebert, J. R., 2013	High Quality	Other(KOOS Quality of Life)	Baseline	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	24.35(14.23)	28.85(14.99)	-4.5(-12.60,3.60)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(KOOS Quality of Life)	6 weeks	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	51.04(11.23)	50.07(12.45)	0.97(-5.59,7.53)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(KOOS Symptoms)	6 weeks	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	73.14(9.82)	72.32(10.37)	0.82(-4.78,6.42)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Other(KOOS Symptoms)	Baseline	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	52.16(11.32)	59.07(12.56)	-6.91(-13.53,-0.29)	Treatment 2 Significant (P-value<.05)

Table 96: PICO 6 part 7- Manual Lymphatic Drainage vs No Manual Lymphatic Drainage: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Ebert, J. R., 2013	High Quality	Pain(Pain at Rest)	Baseline	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	4.67(1.59)	4.71(1.64)	-0.04(-0.94,0.86)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Pain(Pain at Rest)	2 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	1.31(1.21)	1.38(1.06)	-0.07(-0.70,0.56)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Pain(Pain at Rest)	2 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	1.17(1.00)	1.62(0.91)	-0.45(-0.98,0.08)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Pain(Pain at Rest)	3 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	1.54(1.27)	1.5(1.11)	0.04(-0.62,0.70)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Pain(Pain at Rest)	3 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	1.46(1.10)	1.88(1.38)	-0.42(-1.11,0.27)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Pain(Pain at Rest)	4 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	1.54(1.43)	2.13(1.73)	-0.59(-1.47,0.29)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Pain(Pain at Rest)	4 days	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	1.79(1.29)	2(1.08)	-0.21(-0.87,0.45)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Pain(KOOS Pain)	Baseline	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	50.75(11.60)	50.86(9.98)	-0.11(-6.13,5.91)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Pain(KOOS Pain)	6 weeks	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	68.23(12.32)	67.79(13.00)	0.44(-6.58,7.46)	Not Significant (P-value>.05)
Ebert, J. R., 2013	High Quality	Pain(Pain at Rest)	6 weeks	24	26	Manual Lymphatic Drainage	Control (no MLD)	MeanDiff	1.5(1.10)	3(1.28)	-1.5(-2.16,-0.84)	Treatment 1 Significant (P-value<.05)

PICO 7: Strength Training

Study Quality Evaluation Tables

QE - Intervention – Randomized NMES strength training

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Avramidis, K., 2003	●	●	○	◐	●	●	Include	High Quality
Avramidis, K., 2011	●	◐	○	●	●	●	Include	High Quality
Petterson, S. C., 2009	○	◐	○	◐	●	●	Include	Moderate Quality
Stevens-Lapsley, J.E., 2012	●	●	○	●	●	◐	Include	High Quality
Yoshida, Y., 2017	●	◐	○	●	●	●	Include	High Quality

QE - Intervention – Randomized Non-NMES strength training

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Bily, W., 2016	●	◐	●	●	●	◐	Include	High Quality
Evgeniadis, G., 2008	●	●	◐	●	●	●	Include	High Quality
Husby, V. S., 2017	●	◐	○	○	●	●	Include	Moderate Quality
Suh, M. J., 2017	◐	◐	●	●	●	●	Include	High Quality
Valtonen, A., 2010	◐	●	○	●	●	●	Include	High Quality
Yousefian Molla, R., 2017	●	◐	◐	●	●	●	Include	High Quality

Summary of Findings

Figure 37: Summary of Findings-PICO 7 part 1: NMES vs No NMES

	High Quality			Moderate Quality
	Avramidis, K., 2011	Avramidis, K., 2003	Yoshida, Y., 2017	Stevens-Lapsley, J. E., 2012
				Petterson, S. C., 2009
↑ Better Outcomes				
↓ Worse Outcomes				
● Not Significant				
Complications				
Other(Oxford Knee Score - 12 item)	↑			
Composite				
Other(HSS Knee Score)		●		
Other(KSS - Knee Score)	●			
Other(KSS - Total Score)	↑			
Other(WOMAC - total)			↑	
Function				
Function(Extension)			↑	
Function(Flexion)			●	
Function(Timed Up and Go)				●
Function(KSS - Function score)	↑			
Function(Timed Up and Go Test)			↑	
Function(Walking Speed Score)	↑			
Function(SF-36 Role Physical)	↑			
Function(ROM of Passive Knee Flexion)		●		
Function(ROM of Passive Knee Extension)		●		
Function(Timed Up and Go test (TUG))		↑		
Function(Stair-Climbing Test)			↑	●
Function(Extension ROM)				●
Function(Central Activation Ratio)				●
Function(Normalized Maximum Voluntary Isometric Contractions)				●
Function(Six-Minute Walk)			↑	●
Function(Flexion ROM)				●
Function(Walking Distance - 3 minute Walk)	↑	↑		
Function(SF-36 Physical Functioning)	↑			
Function(SF-36 Physical Component)	↑			
Function(2-minute Walk test (2MWT))		↑		
Function(Quadriceps Maximum Voluntary		↑		
Function(Hamstring Muscle Strength)			↑	
Function(Quadriceps Femoris Muscle Strength)			↑	
Function(Quadriceps Muscle Activation)			●	
Function(Global Rating Scale)			↑	
Other				
Other(SF-36 Physical Component)				●
Other(Physiological Cost Index)		●		
Function(Physiological Cost Index)	●			
Other(Leg Skeletal Muscle Mass (Bioelectrical impedance analysis))			●	
Other(Knee Outcome Score - ADLs)				●
Other(SF-36 Mental Component)				●
Other(SF-36 MCS)			●	
Pain				
Pain(Pain KOS)				●
Pain(VAS)			↑	
Pain(SF-36 Bodily Pain)	↑			
Function(Resting Pain)			●	
Quality Of Life				
Other(SF-36 General Health)	↑			
Other(SF-36 Vitality)	↑			
Other(SF-36 Social Functioning)	↑			
Other(SF-36 Mental Component Summary)	↑			
Other(SF-36 Mental Health)	↑			
Other(SF-36 Role Emotional)	↑			
Symptoms				
Adverse Event(Adverse Event)				●

Figure 38: Summary of Findings-PICO 7 part 2: NMES vs NMES

	High Quality
	Yoshida, Y., 2017
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Function	
Function(ROM of Passive Knee Flexion)	●
Function(ROM of Passive Knee Extension)	●
Function(Timed Up and Go test (TUG))	●
Function(2-minute Walk test (2MWT))	●
Function(Quadriceps Maximum Voluntary Isometric Contraction (MVIC))	●
Other	
Other(Leg Skeletal Muscle Mass (Bioelectrical impedance analysis))	●
Pain	
Pain(VAS)	●

Figure 39: Summary of Findings-PICO 7 part 3: Resistance Training vs No Resistance Training

	High Quality	
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Yousefian Molla, R., 2017	Valtonen, A., 2010
Composite		
Function(WOMAC - Total)		●
Function		
Function(Berg Balance Test)	↑	
Function(Habitual Walking Speed)		●
Function(Knee Extensor Power (operated knee))		●
Function(Knee Flexion Power (operated knee))		●
Function(Maximal Walking Speed)		●
Function(Sharpened Romberg Test)	↑	
Function(Stair Ascending)		●
Function(Star Excursion Test)	↑	
Function(WOMAC - Stiffness)		●
Function(WOMAC - Physical Functional Difficulty)		●
Other		
Other(Cross-sectional area of thigh muscle (operated knee))		●
Pain		
Pain(WOMAC - Pain)		●

Figure 40: Summary of Findings-PICO 7 part 4: Strength Training vs No Strength Training

	High Quality		Moderate Quality
	Evgeniadis, G., 2008	Bily, W., 2016	Husby, V. S., 2017
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant			
Complications			
Adverse Event(Adverse Events)		●	
Adverse Event(Deep Wound Infection)			●
Function			
Function(6-minute Walk Test)			●
Function(Iowa Level of Assistance Scale - Assisting Device Used (C Score))	↑		
Function(Iowa Level of Assistance Scale - Level of Assistance Required (Score A))	●		
Function(Iowa Level of Assistance Scale - Total Score)	↑		
Function(Knee Extension)	↑		
Function(Knee Extension, non-operated leg)			●
Function(Knee Extension, operated leg)			↑
Function(Knee Flexion)	↑		
Function(KOOS-PS)			●
Function(Leg Extension Force on Leg Press - involved)		●	
Function(Leg Extension Force on Leg Press - uninvolved)		●	
Function(Leg Press, non-operated leg)			●
Function(Leg Press, operated leg)			↑
Function(Manipulation Under Anesthesia)			●
Function(Maximal Knee Extension Torque - involved)		●	
Function(Maximal Knee Extension Torque - uninvolved)		●	
Function(ROM - active)		●	
Function(ROM - passive)		●	
Function(Stair Test)		●	
Function(Timed Up and Go (TUG))		●	
Pain			
Pain(aVAS - VAS in last 24 hours at activity)		●	
Pain(WOMAC)		●	
Pain(rVAS - VAS in last 24 hours at rest)		●	

Figure 41: Summary of Findings-PICO 7 part 5: Eccentric-Concentric Training vs Concentric Training

	High Quality
	Suh, M. J., 2017
↑ Better Outcomes	
↓ Worse Outcomes	
● Not Significant	
Function	
Function(6 Minute Walk Test)	●
Function(Change in Deficit of Extensor)	●
Function(Change in Deficit of Flexor)	●
Function(Change in Hamstring/Quadriceps Ratio of Surgical Knee)	●
Function(Change in Peak Torque of Extensor of Surgical Knee)	↑
Function(Change in Peak Torque of Flexor of Surgical Knee)	●
Function(Double Support Duration)	●
Function(Gait Speed)	●
Function(Stance Phase Duration)	●
Function(Stride Length)	●
Function(Swing Phase Duration)	●
Function(Timed Stair Climbing Test - Ascent)	●
Function(Timed Stair Climbing Test - Descent)	●
Function(Timed Up and Go (TUG))	●
Function(WOMAC - Stiffness)	●
Function(WOMAC - Function)	●
Other	
Other(EuroQOL - 5d)	●
Pain	
Pain(WOMAC - Pain)	●

Detailed Data Tables

Table 97: PICO 7 part 1- NMES vs No NMES: Complications

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Petterson, S. C., 2009	Moderate Quality	Adverse Event(Adverse Event)	NA	100	100	Exercise with NMES	Volitional Strength Training Program	RD	1.00%	0.00%	0.01(-0.01,0.03)	Not Significant (P-value>.05)

Table 98: PICO 7 part 1- NMES vs No NMES: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Avramidis, K., 2003	High Quality	Other(HSS Knee Score)	6 weeks	30	30	Transcutaneous EMS of the vastus medialis for the first 6 weeks after the operation	Control	Author Reported	. %	. %	3.1(-2.90,9.10)	Not Significant (P-value>.05)
Avramidis, K., 2003	High Quality	Other(HSS Knee Score)	12 weeks	30	30	Transcutaneous EMS of the vastus medialis for the first 6 weeks after the operation	Control	Author Reported	. %	. %	3.5(-2.40,9.40)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(Oxford Knee Score - 12 item)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	Author Reported	18.23(.)	18.86(.)	NA	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(KSS - Knee Score)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	71.77(9.50)	69.8(6.47)	1.97(-1.84,5.78)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(KSS - Knee Score)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	82.94(8.29)	83.31(5.15)	-0.37(-3.60,2.86)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(KSS - Knee Score)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	88.34(6.13)	88.26(5.16)	0.08(-2.57,2.73)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(KSS - Total Score)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	159.63(12.69)	156.4(12.11)	3.23(-2.58,9.04)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Avramidis, K., 2011	High Quality	Other(Oxford Knee Score - 12 item)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	Author Reported	32.43(.)	36.31(.)	NA	intervention group favored; p Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Other(Oxford Knee Score - 12 item)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	Author Reported	21.23(.)	27.26(.)	NA	intervention group favored; p Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Other(KSS - Total Score)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	Mean Dif	109.91(19.53)	96.08(12.57)	13.83(6.14,21.52)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Other(KSS - Total Score)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	Mean Dif	150.94(14.26)	141.74(12.38)	9.2(2.94,15.46)	Treatment 1 Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Other(WOMAC - Total)	4 weeks	28	21	NMES	Control (Standard Rehab)	Author Reported	26.6(12)	31.4(14.1)	-4.8(-12.29,2.69)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Other (WOMAC - Total)	7 weeks	29	24	NMES	Control (Standard Rehab)	Mean Dif	18.1(8.9)	23.7(14.2)	-5.6(-12.14,0.94)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Other (WOMAC - Total)	13 weeks	26	21	NMES	Control (Standard Rehab)	Mean Dif	11.2(8.7)	18(17.6)	-6.8(-15.04,1.44)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Other (WOMAC - Total)	26 weeks	28	21	NMES	Control (Standard Rehab)	Mean Dif	7.5(6.6)	13.6(11.6)	-6.1(-11.63,-0.57)	Treatment 1 Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Other (WOMAC - Total)	52 weeks	26	21	NMES	Control (Standard Rehab)	Mean Dif	5.7(5.9)	10(12.2)	-4.3(-9.99,1.39)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Stevens-Lapsley, J. E., 2012	High Quality	Other(SF-36 MCS)	4 weeks	28	22	NMES	Control (Standard Rehab)	Author Reported	55(9.6)	51(11.5)	4(-1.98,9.98)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Other(SF-36 MCS)	7 weeks	28	23	NMES	Control (Standard Rehab)	Mean Dif	56.8(9.4)	53.7(7.5)	3.1(-1.54,7.74)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Other(SF-36 MCS)	13 weeks	25	21	NMES	Control (Standard Rehab)	Mean Dif	57.9(8.2)	54.2(9.7)	3.7(-1.55,8.95)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Other(SF-36 MCS)	26 weeks	28	21	NMES	Control (Standard Rehab)	Mean Dif	57.2(4.4)	55.2(7.6)	2(-1.64,5.64)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Other(SF-36 MCS)	52 weeks	27	21	NMES	Control (Standard Rehab)	Mean Dif	57.8(4.4)	54.8(6.9)	3(-0.39,6.39)	Not Significant (P-value>.05)

Table 99: PICO 7 part 1- NMES vs No NMES: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Avramidis, K., 2003	High Quality	Function(Walking Distance - 3 minute Walk)	6 weeks	30	30	Transcutaneous EMS of the vastus medialis for the first 6 weeks after the operation	Control	Author Reported	. %	. %	24.4(12.60,36.20)	Tx group favored Significant (P-value<.05)
Avramidis, K., 2003	High Quality	Function(Walking Distance - 3 minute Walk)	12 weeks	30	30	Transcutaneous EMS of the vastus medialis for the first 6 weeks after the operation	Control	Author Reported	. %	. %	32.3(20.90,43.90)	Tx group favored Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Avramidis, K., 2011	High Quality	Function(Walking Speed Score)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	Author Reported	62.72(.)	60.11(.)	NA	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Function(KSS - Function Score)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	71.28(9.34)	68.14(9.08)	3.14(-1.18,7.46)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Function(SF-36 Role Physical)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	17.14(18.95)	15(20.29)	2.14(-7.06,11.34)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Function(Walking Speed Score)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	Author Reported	45.6(.)	37.07(.)	NA	intervention group favored; p Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Function(KSS - Function Score)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	38.14(13.12)	26.28(10.60)	11.86(6.27,17.45)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Function(KSS - Function Score)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	Author Reported	68(8.33)	58.43(.)	9.57(.,.)	intervention group favored; p Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Function(Walking Speed Score)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	Author Reported	57.48(.)	47.21(.)	NA	intervention group favored; p Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Function(SF-36 Physical Functioning)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	32.86(13.84)	22.28(12.56)	10.58(4.39,16.77)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Avramidis, K., 2011	High Quality	Function(SF-36 Role Physical)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	74.28(20.55)	55(26.98)	19.28(8.04,30.52)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Function(SF-36 Physical Functioning)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	65(13.88)	44.14(15.41)	20.86(13.99,27.73)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Function(SF-36 Role Physical)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	92.14(14.57)	82.86(17.96)	9.28(1.62,16.94)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Function(SF-36 Physical Functioning)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	77(9.72)	66.85(9.71)	10.15(5.60,14.70)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Function(SF-36 Physical Component Summary)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	33.92(5.28)	29.31(4.27)	4.61(2.36,6.86)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Function(SF-36 Physical Component Summary)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	46.6(5.13)	37.63(6.43)	8.97(6.24,11.70)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Function(SF-36 Physical Component Summary)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	53.9(4.26)	47.37(3.84)	6.53(4.63,8.43)	Treatment 1 Significant (P-value<.05)
Petterson, S. C., 2009	Moderate Quality	Function(Stair-Climbing Test)	3 months	76	92	Exercise with NMES	Volitional Strength Training Program	Author Reported	14.28(.)	12.78(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Petterson, S. C., 2009	Moderate Quality	Function(Timed Up and Go)	3 months	76	92	Exercise with NMES	Volitional Strength Training Program	Author Reported	8.29(.)	8.02(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Function(Timed Up and Go)	12 months	68	81	Exercise with NMES	Volitional Strength Training Program	Author Reported	8.07(.)	7.68(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Function(Stair-Climbing Test)	12 months	68	81	Exercise with NMES	Volitional Strength Training Program	Author Reported	13.62(.)	11.75(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Function(Extension ROM)	3 months	76	92	Exercise with NMES	Volitional Strength Training Program	Author Reported	2(.)	1.8(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Function(Central Activation Ratio)	3 months	76	92	Exercise with NMES	Volitional Strength Training Program	Author Reported	0.82(.)	0.78(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Function(Normalized Maximum Voluntary Isometric Contractions)	3 months	76	92	Exercise with NMES	Volitional Strength Training Program	Author Reported	19.05(.)	17.35(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Function(Six-Minute Walk)	3 months	76	92	Exercise with NMES	Volitional Strength Training Program	Author Reported	530(.)	535(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Function(Flexion ROM)	3 months	76	92	Exercise with NMES	Volitional Strength Training Program	Author Reported	115.2(.)	114.7(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Petterson, S. C., 2009	Moderate Quality	Function(Extension ROM)	12 months	68	81	Exercise with NMES	Volitional Strength Training Program	Author Reported	0.3(.)	0.4(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Function(Normalized Maximum Voluntary Isometric Contractions)	12 months	68	81	Exercise with NMES	Volitional Strength Training Program	Author Reported	22.64(.)	20.6(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Function(Central Activation Ratio)	12 months	68	81	Exercise with NMES	Volitional Strength Training Program	Author Reported	0.89(.)	0.82(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Function(Six-Minute Walk)	12 months	68	81	Exercise with NMES	Volitional Strength Training Program	Author Reported	545(.)	554(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Function(Flexion ROM)	12 months	68	81	Exercise with NMES	Volitional Strength Training Program	Author Reported	120.9(.)	119(.)	NA	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Extension)	4 weeks	31	28	NMES	Control (Standard Rehab)	Author Reported	2.6(3.6)	6.4(5.2)	-3.8(-6.11,-1.49)	intervention group favored; p Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Extension)	7 weeks	31	26	NMES	Control (Standard Rehab)	Mean Dif	1.2(4)	2.9(4.3)	-1.7(-3.87,0.47)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Extension)	13 weeks	30	30	NMES	Control (Standard Rehab)	Mean Dif	-0.8(2.8)	1.6(3.8)	-2.4(-4.09,-0.71)	Treatment 1 Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Extension)	26 weeks	31	25	NMES	Control (Standard Rehab)	Mean Dif	-0.5(3.7)	-0.1(2.9)	-0.4(-2.13,1.33)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Stevens-Lapsley, J. E., 2012	High Quality	Function(Extension)	52 weeks	30	25	NMES	Control (Standard Rehab)	Mean Dif	-2(3.5)	-1.4(3.4)	-0.6(-2.43,1.23)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Flexion)	4 weeks	31	28	NMES	Control (Standard Rehab)	Mean Dif	96.4(12.3)	95.2(11.9)	1.2(-4.98,7.38)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Flexion)	7 weeks	31	26	NMES	Control (Standard Rehab)	Mean Dif	107.3(10.6)	103.8(12.1)	3.5(-2.46,9.46)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Flexion)	13 weeks	30	30	NMES	Control (Standard Rehab)	Mean Dif	113.9(8.9)	111(10)	2.9(-1.89,7.69)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Flexion)	26 weeks	31	25	NMES	Control (Standard Rehab)	Mean Dif	116.5(8.8)	113(10.7)	3.5(-1.71,8.71)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Flexion)	52 weeks	30	25	NMES	Control (Standard Rehab)	Mean Dif	119.4(6.3)	117(9.1)	2.4(-1.82,6.62)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Global Rating Scale)	4 weeks	28	23	NMES	Control (Standard Rehab)	Author Reported	60.5(17.5)	50.2(17.2)	10.3(0.74,19.86)	intervention group favored; p Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Global Rating Scale)	7 weeks	28	22	NMES	Control (Standard Rehab)	Mean Dif	75.5(11.3)	73(18.8)	2.5(-6.4,11.4)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Global Rating Scale)	13 weeks	28	26	NMES	Control (Standard Rehab)	Mean Dif	85.9(10.9)	80.8(19.4)	5.1(-3.38,13.58)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Global Rating Scale)	26 weeks	30	26	NMES	Control (Standard Rehab)	Mean Dif	89.8(9.9)	85.2(14.9)	4.6(-2.13,11.33)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Stevens-Lapsley, J. E., 2012	High Quality	Function(Global Rating Scale)	52 weeks	30	25	NMES	Control (Standard Rehab)	Mean Dif	95.6(5.7)	87.3(15)	8.3(2.08, 14.52)	Treatment 1 Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Hamstring Muscle Strength)	4 weeks	30	28	NMES	Control (Standard Rehab)	Author Reported	0.49(0.18)	0.39(0.19)	0.1(0.005, 0.2)	intervention group favored; p Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Hamstring Muscle Strength)	7 weeks	31	28	NMES	Control (Standard Rehab)	Mean Dif	0.65(0.23)	0.55(0.2)	0.1(-0.01, 0.21)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Hamstring Muscle Strength)	13 weeks	29	29	NMES	Control (Standard Rehab)	Mean Dif	0.73(0.21)	0.65(0.24)	0.08(-0.04, 0.2)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Hamstring Muscle Strength)	26 weeks	31	27	NMES	Control (Standard Rehab)	Mean Dif	0.79(0.25)	0.72(0.25)	0.07(-0.06, 0.2)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Hamstring Muscle Strength)	52 weeks	30	25	NMES	Control (Standard Rehab)	Mean Dif	0.83(0.25)	0.72(0.29)	0.11(-0.03, 0.25)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Quadriceps Femoris Muscle Strength)	4 weeks	31	28	NMES	Control (Standard Rehab)	Author Reported	0.93(0.41)	0.66(0.24)	0.27(0.1, 0.44)	intervention group favored; p Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Quadriceps Femoris Muscle Strength)	7 weeks	31	28	NMES	Control (Standard Rehab)	Mean Dif	1.2(0.47)	1.04(0.35)	0.16(-0.05, 0.37)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Quadriceps Femoris Muscle Strength)	13 weeks	30	29	NMES	Control (Standard Rehab)	Mean Dif	1.42(0.52)	1.2(0.42)	0.22(-0.02, 0.46)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Quadriceps Femoris Muscle Strength)	26 weeks	31	27	NMES	Control (Standard Rehab)	Mean Dif	1.51(0.48)	1.39(0.44)	0.12(-0.12, 0.36)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Stevens-Lapsley, J. E., 2012	High Quality	Function(Quadriceps Femoris Muscle Strength)	52 weeks	30	25	NMES	Control (Standard Rehab)	Mean Dif	1.66(0.52)	1.5(0.43)	0.16(-0.09,0.41)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Quadriceps Muscle Activation)	4 weeks	30	26	NMES	Control (Standard Rehab)	Mean Dif	82.3(17.2)	73.6(17.9)	8.7(-0.53,17.93)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Quadriceps Muscle Activation)	7 weeks	31	24	NMES	Control (Standard Rehab)	Mean Dif	84.9(13.7)	86.3(10.6)	-1.4(-7.82,5.02)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Quadriceps Muscle Activation)	13 weeks	30	29	NMES	Control (Standard Rehab)	Mean Dif	86.5(12.9)	85.4(11.5)	1.1(-5.13,7.33)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Quadriceps Muscle Activation)	26 weeks	31	26	NMES	Control (Standard Rehab)	Mean Dif	88.4(10.1)	84.2(10)	4.2(-1.04,9.44)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Quadriceps Muscle Activation)	52 weeks	30	23	NMES	Control (Standard Rehab)	Mean Dif	87.6(9.2)	85.9(11.9)	1.7(-4.17,7.57)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Six-Minute Walk Test)	4 weeks	31	24	NMES	Control (Standard Rehab)	Author Reported	390.1(92.4)	295.3(103.4)	94.8(42.18,147.42)	intervention group favored; p Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Six-Minute Walk Test)	7 weeks	31	24	NMES	Control (Standard Rehab)	Mean Dif	466.6(93)	388(94.9)	78.6(28.47,128.73)	Treatment 1 Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Six-Minute Walk Test)	13 weeks	30	29	NMES	Control (Standard Rehab)	Mean Dif	495.7(95.6)	433.1(88.9)	62.6(15.51,109.69)	Treatment 1 Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Six-Minute Walk Test)	26 weeks	31	26	NMES	Control (Standard Rehab)	Mean Dif	496.2(104.3)	465.8(83.9)	30.4(-18.47,79.27)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Stevens-Lapsley, J. E., 2012	High Quality	Function(Six-Minute Walk Test)	52 weeks	29	25	NMES	Control (Standard Rehab)	Mean Dif	524.6(81.6)	477.8(94)	46.8(-0.53,94.13)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Stair Climbing Test)	4 weeks	30	28	NMES	Control (Standard Rehab)	Author Reported	25.2(10.4)	39.3(21.1)	-14.1(-22.76,-5.44)	intervention group favored; p Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Stair Climbing Test)	7 weeks	31	26	NMES	Control (Standard Rehab)	Mean Dif	16.5(7.2)	23.5(17.1)	-7(-14.04,0.04)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Stair Climbing Test)	13 weeks	30	30	NMES	Control (Standard Rehab)	Mean Dif	13.6(7.1)	16.3(7.5)	-2.7(-6.4,1)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Stair Climbing Test)	26 weeks	31	26	NMES	Control (Standard Rehab)	Mean Dif	12.1(5.1)	14.8(7.8)	-2.7(-6.19,0.79)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Stair Climbing Test)	52 weeks	29	25	NMES	Control (Standard Rehab)	Mean Dif	11.5(4.3)	14.8(9.3)	-3.3(-7.27,0.67)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Timed Up and Go Test)	4 weeks	31	28	NMES	Control (Standard Rehab)	Author Reported	10.4(3.8)	13.9(4.5)	-3.5(-5.64,-1.36)	intervention group favored; p Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Timed Up and Go Test)	7 weeks	31	26	NMES	Control (Standard Rehab)	Mean Dif	8(2.1)	11.3(6.8)	-3.3(-6.02,-0.58)	Treatment 1 Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Timed Up and Go Test)	13 weeks	30	30	NMES	Control (Standard Rehab)	Mean Dif	7.5(2.2)	9.5(2.8)	-2(-3.27,-0.73)	Treatment 1 Significant (P-value<.05)
Stevens-Lapsley, J. E., 2012	High Quality	Function(Timed Up and Go Test)	26 weeks	31	26	NMES	Control (Standard Rehab)	Mean Dif	7.1(2)	8.6(2.1)	-1.5(-2.57,-0.43)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Stevens-Lapsley, J. E., 2012	High Quality	Function(Timed Up and Go Test)	52 weeks	29	25	NMES	Control (Standard Rehab)	Mean Dif	6.7(1.7)	8.3(2.8)	-1.6(-2.86,-0.34)	Treatment 1 Significant (P-value<.05)
Yoshida, Y., 2017	High Quality	Function(2-minute Walk test (2MWT))	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	Mean Dif	135(16.00)	116(21.00)	19(7.97, 30.03)	Treatment 1 Significant (P-value<.05)
Yoshida, Y., 2017	High Quality	Function(2-minute Walk test (2MWT))	NR	22	22	sNMES - Sensory-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	Mean Dif	130(25.00)	116(21.00)	14(0.36, 27.64)	Treatment 1 Significant (P-value<.05)
Yoshida, Y., 2017	High Quality	Function(Quadriceps Maximum Voluntary Isometric Contraction (MVIC))	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	Mean Dif	0.26(0.05)	0.19(0.07)	0.07(0.03, 0.11)	Treatment 1 Significant (P-value<.05)
Yoshida, Y., 2017	High Quality	Function(Quadriceps Maximum Voluntary Isometric Contraction (MVIC))	NR	22	22	sNMES - Sensory-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	Mean Dif	0.24(0.07)	0.19(0.07)	0.05(0.01, 0.09)	Treatment 1 Significant (P-value<.05)
Yoshida, Y., 2017	High Quality	Function(ROM of Passive Knee Extension)	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	Mean Dif	5(4.00)	4(4.00)	1(-1.36, 3.36)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Yoshida, Y., 2017	High Quality	Function(ROM of Passive Knee Extension)	NR	22	22	sNMES - Sensory-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	MeanDiff	5(5.00)	4(4.00)	1(-1.68,3.68)	Not Significant (P-value>.05)
Yoshida, Y., 2017	High Quality	Function(ROM of Passive Knee Flexion)	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	MeanDiff	121(6.00)	120(5.00)	1(-2.26,4.26)	Not Significant (P-value>.05)
Yoshida, Y., 2017	High Quality	Function(ROM of Passive Knee Flexion)	NR	22	22	sNMES - Sensory-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	MeanDiff	122(4.00)	120(5.00)	2(-0.68,4.68)	Not Significant (P-value>.05)
Yoshida, Y., 2017	High Quality	Function(Timed Up and Go test (TUG))	NR	22	22	sNMES - Sensory-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	MeanDiff	10(13.10)	10.6(2.70)	-0.6(-6.19,4.99)	Not Significant (P-value>.05)
Yoshida, Y., 2017	High Quality	Function(Timed Up and Go test (TUG))	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	MeanDiff	8.8(1.80)	10.6(2.70)	-1.8(-3.16,-0.44)	Not Significant (P-value>.05)

Table 100: PICO 7 part 1- NMES vs No NMES: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Avramidis, K., 2003	High Quality	Other(Physiological Cost Index)	6 weeks	30	30	Transcutaneous EMS of the vastus medialis for the first 6 weeks after the operation	Control	Author Reported	. %	. %	0(-0.60,0.60)	Not Significant (P-value>.05)
Avramidis, K., 2003	High Quality	Other(Physiological Cost Index)	12 weeks	30	30	Transcutaneous EMS of the vastus medialis for the first 6 weeks after the operation	Control	Author Reported	. %	. %	0.2(-0.80,0.40)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Function(Physiological Cost Index)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	Author Reported	0.44(.)	0.47(.)	NA	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Function(Physiological Cost Index)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	Author Reported	0.34(.)	0.37(.)	NA	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Function(Physiological Cost Index)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	Author Reported	0.3(.)	0.33(.)	NA	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Vitality)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	54.28(10.45)	49.85(9.66)	4.43(-0.28,9.14)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Social Functioning)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	32.5(17.20)	27.5(17.10)	5(-3.04,13.04)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Avramidis, K., 2011	High Quality	Other(SF-36 Mental Component Summary)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	42.69(5.93)	42.08(5.45)	0.61(-2.06,3.28)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Mental Health)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	65.26(14.54)	63.77(9.75)	1.49(-4.31,7.29)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Role Emotional)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	34.28(18.94)	31.43(25.49)	2.85(-7.67,13.37)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Role Emotional)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	83.81(21.93)	84.76(16.85)	-0.95(-10.11,8.21)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Mental Health)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	77.26(7.75)	74.28(6.88)	2.98(-0.45,6.41)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Mental Component Summary)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	50.49(3.32)	50.1(3.69)	0.39(-1.25,2.03)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Social Functioning)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	67.5(20.15)	65(17.36)	2.5(-6.31,11.31)	Not Significant (P-value>.05)
Avramidis, K., 2011	High Quality	Other(SF-36 General Health)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	53.63(14.21)	39.2(15.48)	14.43(7.47,21.39)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Avramidis, K., 2011	High Quality	Other(SF-36 Vitality)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	73.86(8.23)	59.43(10.83)	14.43(9.92,18.94)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Other(SF-36 General Health)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	67.28(12.16)	45.68(15.83)	21.6(14.99,28.21)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Vitality)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	81.28(6.90)	68.28(8.40)	13(9.40, 16.60)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Other(SF-36 General Health)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	74.8(8.71)	53.77(13.29)	21.03(15.77,26.29)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Mental Health)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	77.26(9.74)	70.86(7.36)	6.4(2.36, 10.44)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Mental Component Summary)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	53.51(4.20)	49.2(4.21)	4.31(2.34,6.28)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Social Functioning)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	69.29(16.42)	53.21(15.26)	16.08(8.65,23.51)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Other(SF-36 Role Emotional)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	92.38(14.20)	71.43(28.17)	20.95(10.50,31.40)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Petterson, S. C., 2009	Moderate Quality	Other(SF-36 Physical Component)	3 months	76	92	Exercise with NMES	Volitional Strength Training Program	Author Reported	44.5(.)	44.64(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Other(Knee Outcome Score - ADLs)	3 months	76	92	Exercise with NMES	Volitional Strength Training Program	Author Reported	0.8(.)	0.81(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Other(SF-36 Mental Component)	3 months	76	92	Exercise with NMES	Volitional Strength Training Program	Author Reported	57.17(.)	56.77(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Other(SF-36 Physical Component)	12 months	68	81	Exercise with NMES	Volitional Strength Training Program	Author Reported	46.05(.)	46.74(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Other(SF-36 Mental Component)	12 months	68	81	Exercise with NMES	Volitional Strength Training Program	Author Reported	56.63(.)	57.16(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Other(Knee Outcome Score - ADLs)	12 months	68	81	Exercise with NMES	Volitional Strength Training Program	Author Reported	0.85(.)	0.86(.)	NA	Not Significant (P-value>.05)
Yoshida, Y., 2017	High Quality	Other(Leg Skeletal Muscle Mass (Bioelectrical impedance analysis))	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	MeanDiff	92.9(12.30)	89.9(121.60)	3(-48.07,54.07)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Yoshida, Y., 2017	High Quality	Other(Leg Skeletal Muscle Mass (Bioelectrical impedance analysis))	NR	22	22	sNMES - Sensory-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	MeanDiff	92.3(13.80)	89.9(121.60)	2.4(-48.74,53.54)	Not Significant (P-value>.05)

Table 101: PICO 7 part 1- NMES vs No NMES: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Avramidis, K., 2011	High Quality	Pain(SF-36 Bodily Pain)	6 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	43.77(12.03)	35.43(14.06)	8.34(2.21,14.47)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Pain(SF-36 Bodily Pain)	12 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	78.6(15.29)	57.46(16.11)	21.14(13.78,28.50)	Treatment 1 Significant (P-value<.05)
Avramidis, K., 2011	High Quality	Pain(SF-36 Bodily Pain)	52 weeks	35	35	Transcutaneous Electrical Stimulation and Physiotherapy	Standard Physiotherapy	MeanDiff	92(10.57)	79.48(12.72)	12.52(7.04,18.00)	Treatment 1 Significant (P-value<.05)
Petterson, S. C., 2009	Moderate Quality	Pain(Pain KOS)	3 months	76	92	Exercise with NMES	Volitional Strength Training Program	Author Reported	1.11(.)	1.08(.)	NA	Not Significant (P-value>.05)
Petterson, S. C., 2009	Moderate Quality	Pain(Pain KOS)	12 months	68	81	Exercise with NMES	Volitional Strength Training Program	Author Reported	0.82(.)	0.89(.)	NA	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Pain(Resting Pain)	4 weeks	30	26	NMES	Control (Standard Rehab)	Mean Dif	1.8(1.7)	2.1(1.8)	-0.3(-1.22,0.62)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Pain(Resting Pain)	7 weeks	29	24	NMES	Control (Standard Rehab)	Mean Dif	0.6(0.9)	1.2(1.3)	-0.6(-1.21,0.01)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Pain(Resting Pain)	13 weeks	30	26	NMES	Control (Standard Rehab)	Mean Dif	0.6(1.2)	1.5(2.1)	-0.9(-1.81,0.01)	Not Significant (P-value>.05)
Stevens-Lapsley, J. E., 2012	High Quality	Pain(Resting Pain)	26 weeks	30	25	NMES	Control (Standard Rehab)	Mean Dif	0.6(1.3)	0.7(1.5)	-0.1(-0.85,0.65)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Stevens-Lapsley, J. E., 2012	High Quality	Pain(Resting Pain)	52 weeks	29	23	NMES	Control (Standard Rehab)	Mean Dif	0.6(1.4)	0.4(1.5)	0.2(-0.6,1)	Not Significant (P-value>.05)
Yoshida, Y., 2017	High Quality	Pain(VAS)	NR	22	22	sNMES - Sensory-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	MeanDif	29(26.00)	31(23.00)	-2(-16.51,12.51)	Not Significant (P-value>.05)
Yoshida, Y., 2017	High Quality	Pain(VAS)	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	Control (Standard Rehab)	MeanDif	20(12.00)	31(23.00)	-11(-21.84,-0.16)	Not Significant (P-value>.05)

Table 102: PICO 7 part 2- NMES vs NMES: Function

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Yoshida, Y., 2017	High Quality	Function(2-minute Walk test (2MWT))	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	sNMES - Sensory-level Neuromuscul ar Electrical Stimulation and Standard Rehab	MeanDiff	135(16.00)	130(25.00)	5(-7.40,17.40)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Yoshida, Y., 2017	High Quality	Function(Quadriceps Maximum Voluntary Isometric Contraction (MVIC))	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	sNMES - Sensory-level Neuromuscular Electrical Stimulation and Standard Rehab	MeanDiff	0.26(0.05)	0.24(0.07)	0.02(-0.02,0.06)	Not Significant (P-value>.05)
Yoshida, Y., 2017	High Quality	Function(ROM of Passive Knee Extension)	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	sNMES - Sensory-level Neuromuscular Electrical Stimulation and Standard Rehab	MeanDiff	5(4.00)	5(5.00)	0(-2.68,2.68)	Not Significant (P-value>.05)
Yoshida, Y., 2017	High Quality	Function(ROM of Passive Knee Flexion)	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	sNMES - Sensory-level Neuromuscular Electrical Stimulation and Standard Rehab	MeanDiff	121(6.00)	122(4.00)	-1(-4.01,2.01)	Not Significant (P-value>.05)
Yoshida, Y., 2017	High Quality	Function(Timed Up and Go test (TUG))	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	sNMES - Sensory-level Neuromuscular Electrical Stimulation and Standard Rehab	MeanDiff	8.8(1.80)	10(13.10)	-1.2(-6.73,4.33)	Not Significant (P-value>.05)

Table 103: PICO 7 part 2- NMES vs NMES: Other

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Yoshida, Y., 2017	High Quality	Other(Leg Skeletal Muscle Mass (Bioelectrical impedance analysis))	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	sNMES - Sensory-level Neuromuscul ar Electrical Stimulation and Standard Rehab	MeanDiff	92.9(12.30)	92.3(13.80)	0.6(-7.12,8.32)	Not Significant (P-value>.05)

Table 104: PICO 7 part 2- NMES vs NMES: Pain

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Yoshida, Y., 2017	High Quality	Pain(VAS)	NR	22	22	mNMES - Motor-level Neuromuscular Electrical Stimulation and Standard Rehab	sNMES - Sensory-level Neuromuscul ar Electrical Stimulation and Standard Rehab	MeanDiff	20(12.00)	29(26.00)	-9(-20.97,2.97)	Not Significant (P-value>.05)

Table 105: PICO 7 part 3- Resistance Training vs No Resistance Training: Composite

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Valtonen, A., 2010	High Quality	Function(WOMAC - total)	12 weeks	25	21	Aquatic Resistance Training	No Aquatic Resistance Training (control)	MeanDiff	17.9(8.50)	18.3(16.00)	-0.4(-8.01,7.21)	Not Significant (P-value>.05)

Table 106: PICO 7 part 3- Resistance Training vs No Resistance Training: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Valtonen, A., 2010	High Quality	Function(WOMAC - Stiffness)	12 weeks	25	21	Aquatic Resistance Training	No Aquatic Resistance Training (control)	MeanDiff	25.9(20.60)	30.3(25.50)	-4.4(-17.97,9.17)	Not Significant (P-value>.05)
Valtonen, A., 2010	High Quality	Function(Knee Flexion Power (operated knee))	12 weeks	25	21	Aquatic Resistance Training	No Aquatic Resistance Training (control)	MeanDiff	135.9(60.00)	117.8(41.30)	18.1(-11.31,47.51)	Not Significant (P-value>.05)
Valtonen, A., 2010	High Quality	Function(WOMAC - Physical Functional Difficulty)	12 weeks	25	21	Aquatic Resistance Training	No Aquatic Resistance Training (control)	MeanDiff	18.5(9.40)	17.3(17.20)	1.2(-7.03,9.43)	Not Significant (P-value>.05)
Valtonen, A., 2010	High Quality	Function(Habitual Walking Speed)	12 weeks	25	21	Aquatic Resistance Training	No Aquatic Resistance Training (control)	MeanDiff	1.41(0.24)	1.29(0.26)	0.12(-0.03,0.27)	Not Significant (P-value>.05)
Valtonen, A., 2010	High Quality	Function(Knee Extensor Power (operated knee))	12 weeks	25	21	Aquatic Resistance Training	No Aquatic Resistance Training (control)	MeanDiff	145.6(64.00)	129.3(44.80)	16.3(-15.27,47.87)	Not Significant (P-value>.05)
Valtonen, A., 2010	High Quality	Function(Maximal Walking Speed)	12 weeks	25	21	Aquatic Resistance Training	No Aquatic Resistance Training (control)	MeanDiff	1.96(0.31)	1.87(0.52)	0.09(-0.16,0.34)	Not Significant (P-value>.05)
Valtonen, A., 2010	High Quality	Function(Stair Ascending)	12 weeks	25	21	Aquatic Resistance Training	No Aquatic Resistance Training (control)	MeanDiff	4.27(1.67)	4.71(1.74)	-0.44(-1.43,0.55)	Not Significant (P-value>.05)
Yousefian Molla, R., 2017	High Quality	Function(Berg Balance Test)	7 weeks	20	20	Early Resistive Exercises + Routine Rehab	Routine Rehab only	MeanDiff	50(4.20)	43.9(2.30)	6.1(4.00, 8.20)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Yousefian Molla, R., 2017	High Quality	Function(Sharpended Romberg Test)	7 weeks	20	20	Early Resistive Exercises + Routine Rehab	Routine Rehab only	MeanDiff	42.9(8.50)	26.6(4.30)	16.3(12.13,20.47)	Treatment 1 Significant (P-value<.05)
Yousefian Molla, R., 2017	High Quality	Function(Star Excursion Test)	7 weeks	20	20	Early Resistive Exercises + Routine Rehab	Routine Rehab only	MeanDiff	60.5(14.90)	45.8(17.80)	14.7(4.53,24.87)	Treatment 1 Significant (P-value<.05)
Yousefian Molla, R., 2017	High Quality	Function(Star Excursion Test)	9 weeks	20	20	Early Resistive Exercises + Routine Rehab	Routine Rehab only	MeanDiff	64.8(16.50)	54.3(11.60)	10.5(1.66,19.34)	Treatment 1 Significant (P-value<.05)
Yousefian Molla, R., 2017	High Quality	Function(Berg Balance Test)	9 weeks	20	20	Early Resistive Exercises + Routine Rehab	Routine Rehab only	MeanDiff	51.7(3.20)	45.8(3.10)	5.9(3.95, 7.85)	Treatment 1 Significant (P-value<.05)
Yousefian Molla, R., 2017	High Quality	Function(Sharpended Romberg Test)	9 weeks	20	20	Early Resistive Exercises + Routine Rehab	Routine Rehab only	MeanDiff	46.8(7.80)	29.6(4.60)	17.2(13.23,21.17)	Treatment 1 Significant (P-value<.05)

Table 107: PICO 7 part 3- Resistance Training vs No Resistance Training: Other

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Valtonen, A., 2010	High Quality	Other(Cross-sectional area of thigh muscle (operated knee))	12 weeks	25	21	Aquatic Resistance Training	No Aquatic Resistance Training (control)	MeanDiff	110.7(30.70)	103.5(20.20)	7.2(-7.61,22.01)	Not Significant (P-value>.05)

Table 108: PICO 7 part 3- Resistance Training vs No Resistance Training: Pain

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Valtonen, A., 2010	High Quality	Pain(WOMAC - Pain)	12 weeks	25	21	Aquatic Resistance Training	No Aquatic Resistance Training (control)	MeanDiff	13(8.70)	15.5(12.40)	-2.5(-8.81,3.81)	Not Significant (P-value>.05)

Table 109: PICO 7 part 4- Strength Training vs No Strength Training: Complications

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Bily, W., 2016	High Quality	Adverse Event(Adverse Events)	NR	26	29	Leg Press Training	Control (Physiotherap y)	RD	0.00%	0.00%	0.00(0.0 0,0.00)	Not Significant (P-value>.05)
Husby, V. S., 2017	Moderate Quality	Adverse Event(Deep Wound Infection)	Post-Op	19	18	Maximal Strength Training	Standard Rehab	RD	5.26%	0.00%	0.05(- 0.05,0.1 5)	Not Significant (P-value>.05)

Table 110: PICO 7 part 4- Strength Training vs No Strength Training: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Bily, W., 2016	High Quality	Function(Maximal Knee Extension Torque - uninvolved)	NR	26	29	Leg Press Training	Control (Physiotherapy)	MeanDiff	1.2(0.11)	1.2(0.07)	0(-0.05,0.05)	Not Significant (P-value>.05)
Bily, W., 2016	High Quality	Function(Timed Up and Go (TUG))	NR	26	29	Leg Press Training	Control (Physiotherapy)	MeanDiff	7.3(0.32)	8.1(0.41)	-0.8(-0.99,-0.61)	Not Significant (P-value>.05)
Bily, W., 2016	High Quality	Function(Leg Extension Force on Leg Press - uninvolved)	NR	26	29	Leg Press Training	Control (Physiotherapy)	MeanDiff	12.3(1.24)	11.3(0.98)	1(0.40,1.60)	Not Significant (P-value>.05)
Bily, W., 2016	High Quality	Function(ROM - active)	NA	26	29	Leg Press Training	Control (Physiotherapy)	MeanDiff	114.1(2.36)	111.2(1.58)	2.9(1.83,3.97)	Not Significant (P-value>.05)
Bily, W., 2016	High Quality	Function(ROM - passive)	NR	26	29	Leg Press Training	Control (Physiotherapy)	MeanDiff	116.2(2.46)	112.8(1.51)	3.4(2.31,4.49)	Not Significant (P-value>.05)
Bily, W., 2016	High Quality	Function(Leg Extension Force on Leg Press - involved)	NR	26	29	Leg Press Training	Control (Physiotherapy)	MeanDiff	10.3(1.06)	9.1(0.70)	1.2(0.72,1.68)	Not Significant (P-value>.05)
Bily, W., 2016	High Quality	Function(Stair Test)	NR	26	29	Leg Press Training	Control (Physiotherapy)	MeanDiff	12.8(0.74)	14.8(1.03)	-2(-2.47,-1.53)	Not Significant (P-value>.05)
Bily, W., 2016	High Quality	Function(Maximal Knee Extension Torque - involved)	NR	26	29	Leg Press Training	Control (Physiotherapy)	MeanDiff	1(0.09)	0.9(0.06)	0.1(0.06,0.14)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Level of Assistance Required (Score A))	3 days	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	9.3(2.10)	9.8(2.90)	-0.5(-1.93,0.93)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Total Score)	3 days	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	28.2(2.40)	28.9(3.30)	-0.7(-2.33,0.93)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Total Score)	2 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	20.5(1.20)	20.3(1.97)	0.2(-0.72,1.12)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Level of Assistance Required (Score A))	2 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	2.2(0.90)	2(1.40)	0.2(-0.47,0.87)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Knee Extension)	2 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	-5.67(3.12)	-6.5(3.83)	0.83(-1.15,2.81)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Knee Flexion)	2 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	66(8.32)	70.25(11.30)	-4.25(-9.86,1.36)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Level of Assistance Required (Score A))	6 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	0.52(0.52)	0.58(0.67)	-0.06(-0.40,0.28)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Level of Assistance Required (Score A))	10 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	0(0.00)	0(0.00)	0(0.00,0.00)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Total Score)	14 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	0.14(0.39)	0.38(0.59)	-0.24(-0.52,0.04)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Level of Assistance Required (Score A))	14 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	0(0.00)	0(0.00)	0(0.00,0.00)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Assisting Device Used (C Score))	3 days	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	18.9(0.90)	19.1(0.90)	-0.2(-0.71,0.31)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Assisting Device Used (C Score))	2 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	18.3(0.86)	18.3(0.90)	0(-0.50,0.50)	Not Significant (P-value>.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Assisting Device Used (C Score))	14 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	0.14(0.39)	0.38(0.56)	-0.24(-0.51,0.03)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Total Score)	6 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	9.16(0.93)	10.08(1.16)	-0.92(-1.51,-0.33)	Treatment 1 Significant (P-value<.05)
Evgeniadis, G., 2008	High Quality	Function(Knee Flexion)	10 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	84.7(9.26)	76.08(10.30)	8.62(3.08,14.16)	Treatment 1 Significant (P-value<.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Total Score)	10 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	2.79(0.64)	4.87(0.73)	-2.08(-2.47,-1.69)	Treatment 1 Significant (P-value<.05)
Evgeniadis, G., 2008	High Quality	Function(Knee Flexion)	14 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	98.42(11.30)	80.42(10.20)	18(11.91,24.09)	Treatment 1 Significant (P-value<.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Assisting Device Used (C Score))	6 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	8.64(0.88)	9.5(0.90)	-0.86(-1.36,-0.36)	Treatment 1 Significant (P-value<.05)
Evgeniadis, G., 2008	High Quality	Function(Iowa Level of Assistance Scale - Assisting Device Used (C Score))	10 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	2.79(0.64)	4.87(0.38)	-2.08(-2.38,-1.78)	Treatment 1 Significant (P-value<.05)
Evgeniadis, G., 2008	High Quality	Function(Knee Extension)	10 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	-2.6(1.80)	-7(3.95)	4.4(2.66,6.14)	Treatment 1 Significant (P-value<.05)
Evgeniadis, G., 2008	High Quality	Function(Knee Extension)	14 weeks	24	24	Postop Exercise Program	Standard Care (Control)	MeanDiff	-0.8(1.27)	-6.42(3.60)	5.62(4.09,7.15)	Treatment 1 Significant (P-value<.05)
Husby, V. S., 2017	Moderate Quality	Function(Manipulation Under Anesthesia)	Post-Op	19	18	Maximal Strength Training	Standard Rehab	RD	10.53%	0.00%	0.11(-0.03,0.24)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Husby, V. S., 2017	Moderate Quality	Function(KOOS-PS)	10 weeks	16	18	Maximal Strength Training	Standard Rehab	Author Reported	31.7(.)	28.6(.)	NA	Not Significant (P-value>.05)
Husby, V. S., 2017	Moderate Quality	Function(6-Minute Walk Test)	10 weeks	34	34	Maximal Strength Training	Standard Rehab	Author Reported	. %	. %	9(-8.00,24.00)	Not Significant (P-value>.05)
Husby, V. S., 2017	Moderate Quality	Function(Knee Extension, non-operated leg)	10 weeks	34	34	Maximal Strength Training	Standard Rehab	Author Reported	. %	. %	11(-21.00,44.00)	Not Significant (P-value>.05)
Husby, V. S., 2017	Moderate Quality	Function(Leg Press, non-operated leg)	10 weeks	34	34	Maximal Strength Training	Standard Rehab	Author Reported	. %	. %	9(-9.80,29.00)	Not Significant (P-value>.05)
Husby, V. S., 2017	Moderate Quality	Function(Leg Press, operated leg)	10 weeks	34	34	Maximal Strength Training	Standard Rehab	Author Reported	. %	. %	49(30.00,68.00)	MST group showed sig. greater Significant (P-value<.05)
Husby, V. S., 2017	Moderate Quality	Function(Knee Extension, operated leg)	10 weeks	34	34	Maximal Strength Training	Standard Rehab	Author Reported	. %	. %	76(43.00,108.00)	MST group showed sig. greater Significant (P-value<.05)

Table 111: PICO 7 part 4- Strength Training vs No Strength Training: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Bily, W., 2016	High Quality	Pain(aVAS - VAS in last 24 hours at activity)	NR	26	29	Leg Press Training	Control (Physiotherapy)	MeanDiff	2.7(0.45)	2.3(0.41)	0.4(0.17, 0.63)	Not Significant (P-value>.05)
Bily, W., 2016	High Quality	Pain(WOMAC)	NR	26	29	Leg Press Training	Control (Physiotherapy)	MeanDiff	2.3(0.28)	2(0.18)	0.3(0.17, 0.43)	Not Significant (P-value>.05)
Bily, W., 2016	High Quality	Pain(rVAS - VAS in last 24 hours at rest)	NR	26	29	Leg Press Training	Control (Physiotherapy)	MeanDiff	1.3(0.36)	1.1(0.31)	0.2(0.02, 0.38)	Not Significant (P-value>.05)

Table 112: PICO 7 part 5- Eccentric-Concentric Training vs Concentric Training: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Suh, M. J., 2017	High Quality	Function(6 Minute Walk Test)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	35.1(14.70)	2.6(10.40)	32.5(23.84,41.16)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(Change in Deficit of Extensor)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	7(5.80)	7.8(4.60)	-0.8(-4.35,2.75)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(Change in Deficit of Flexor)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	-5.1(4.60)	4.3(4.50)	-9.4(-12.47,-6.33)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(Change in Hamstring/Quadriceps Ratio of Surgical Knee)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	12.6(5.90)	19(8.30)	-6.4(-11.20,-1.60)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(Change in Peak Torque of Extensor of Surgical Knee)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	-4.4(1.90)	-10.7(2.10)	6.3(4.96,7.64)	Treatment 1 Significant (P-value<.05)
Suh, M. J., 2017	High Quality	Function(Change in Peak Torque of Flexor of Surgical Knee)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	1.3(1.80)	-3.6(1.90)	4.9(3.66,6.14)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(Double Support Duration)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	-0.6(1.50)	-1.9(0.90)	1.3(0.46,2.14)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(Gait Speed)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	0.1(0.20)	0.1(0.10)	0(-0.11,0.11)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(Stance Phase Duration)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	-0.6(0.80)	-1(0.50)	0.4(-0.05,0.85)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Suh, M. J., 2017	High Quality	Function(Stride Length)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	2.5(3.20)	4(2.50)	-1.5(-3.45,0.45)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(Swing Phase Duration)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	0.6(0.80)	1(0.50)	-0.4(-0.85,0.05)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(Timed Stair Climbing Test - Ascent)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	-1.4(2.70)	3.6(1.10)	-5(-6.42,-3.58)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(Timed Stair Climbing Test - Descent)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	-0.8(2.50)	1.6(0.90)	-2.4(-3.69,-1.11)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(Timed Up and Go (TUG))	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	-2.2(1.70)	-0.5(0.70)	-1.7(-2.59,-0.81)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(WOMAC - Function)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	-9.7(3.30)	-8.1(2.00)	-1.6(-3.46,0.26)	Not Significant (P-value>.05)
Suh, M. J., 2017	High Quality	Function(WOMAC - Stiffness)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	-0.4(0.40)	-0.04(0.04)	-0.36(-0.56,-0.16)	Not Significant (P-value>.05)

Table 113: PICO 7 part 5- Eccentric-Concentric Training vs Concentric Training: Other

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Suh, M. J., 2017	High Quality	Other(EuroQOL - 5d)	1 month	16	18	Eccentric-Concentric Training	Concentric Training	MeanDiff	0.2(0.20)	0.2(0.10)	0(-0.11,0.11)	Not Significant (P-value>.05)

Table 114: PICO 7 part 5- Eccentric-Concentric Training vs Concentric Training: Pain

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	
M. J., 2017	High Quality	Pain(WOMAC - Pain)	1 month	16	18	Eccentric- Concentric Training	Concentric Training	MeanDi f	- 4.3(3.90)	- 3.3(3.40)	-1(- 3.47,1.4 7)	N (

PICO 8 – Prognostic Risk Factors

Study Quality Evaluation tables

Study	Representative Population	Reason for Follow Up Loss	Prognostic Factor Measured	Outcome Measurement	Confounders	Appropriate Statistical Analysis	Inclusion	Strength
Aderinto, J., 2005	●	●	●	●	○	○	Include	Low Quality
Antony, J., 2017	●	●	●	●	○	○	Include	Low Quality
Astephen Wilson, J. L., 2015	●	●	●	●	○	○	Include	Low Quality
Bade, M. J., 2014	●	●	●	●	○	○	Include	Low Quality
Bascuas, I., 2013	●	●	●	●	○	○	Include	Low Quality
Bauman, R. D., 2012	●	●	●	●	○	○	Include	Low Quality
Bin Abd Razak, H. R., 2014	●	●	○	●	○	○	Include	Low Quality
Bin, S. I., 2007	●	●	●	●	●	●	Include	High Quality
Bonnefoy-Mazure, A., 2017	●	●	●	●	○	●	Include	Low Quality
Brandes, M., 2011	●	●	●	●	○	○	Include	Low Quality
Bugala-Szpak, J., 2010	●	●	●	●	○	○	Include	Low Quality
Carvalho Junior, L. H., 2017	●	●	●	●	○	○	Include	Low Quality
Chalidis, B. E., 2010	●	●	●	●	○	○	Include	Low Quality
Chatterji, U., 2005	●	●	●	●	○	○	Include	Low Quality
Cheng, K., 2010	●	●	●	●	●	●	Include	High Quality
Chung, L. H., 2011	●	●	●	●	○	○	Include	Low Quality
Clement, N. D., 2013	●	●	●	●	○	○	Include	Moderate Quality
Clement, N. D., 2013	●	●	●	●	○	○	Include	Low Quality
Collados-Maestre, I., 2016	●	●	●	●	○	○	Include	Moderate Quality
Dalury, Df, 2011	●	●	●	●	○	○	Include	Low Quality
Dauty, M., 2009	●	●	●	●	○	○	Include	Moderate Quality
Dewan, A., 2009	●	●	●	●	○	○	Include	Low Quality
Dowsey, M. M., 2010	●	●	●	●	○	○	Include	Low Quality
Faraj, A. A., 2001	●	●	●	●	○	○	Include	Low Quality
Fernandez-Fernandez, R., 2015	●	●	●	●	○	○	Include	Low Quality
Gatha, N. M., 2004	●	●	●	●	●	●	Include	High Quality
Gen, L. Y., 2015	●	●	●	●	○	○	Include	Low Quality
Ha, C. W., 2016	●	●	●	●	○	○	Include	Low Quality
Hirschmann, M. T., 2013	●	●	●	●	○	○	Include	Low Quality
Hiyama, Y., 2017	●	●	●	●	○	○	Include	Low Quality
Holm, B., 2010	●	●	●	●	●	○	Include	Moderate Quality
Hsu, R. W., 1995	●	●	●	●	○	○	Include	Low Quality
Jones, C. A., 2003	●	●	●	●	●	○	Include	Moderate Quality
Jones, C. A., 2012	●	●	●	●	○	○	Include	Low Quality
Kaupila, A. M., 2011	●	●	●	●	●	○	Include	Moderate Quality
Kuo, F. C., 2014	●	●	●	●	○	○	Include	Low Quality
Labraca, N. S., 2011	●	●	●	●	○	○	Include	Low Quality
Langlois, J., 2015	●	●	●	●	○	○	Include	Low Quality
Lee, D. C., 1998	●	●	●	●	○	○	Include	Low Quality
Liao, C. D., 2016	●	●	●	●	○	○	Include	Moderate Quality
Lin, J., 2009	●	●	●	●	●	○	Include	Moderate Quality
Lindberg, M. F., 2016	●	●	●	●	○	○	Include	Low Quality
Lizaur, A., 1997	●	●	●	●	○	○	Include	Moderate Quality
Lizaur-Utrilla, A., 2014	●	●	●	●	○	○	Include	Low Quality
Lizaur-Utrilla, A., 2014	●	●	●	●	○	○	Include	Moderate Quality
Lizaur-Utrilla, A., 2017	●	●	●	●	●	●	Include	High Quality
Losina, E., 2016	●	●	●	●	○	○	Include	Low Quality

Study	Representative Population	Reason for Follow Up Loss	Prognostic Factor Measured	Outcome Measurement	Confounders	Appropriate Statistical Analysis	Inclusion	Strength
Maiorano, E., 2017	●	●	◐	●	◐	○	Include	Low Quality
Messieh, M., 1999	◐	●	◐	●	○	○	Include	Low Quality
Mizner, R. L., 2005	●	●	◐	●	●	●	Include	High Quality
Napier, R. J., 2014	◐	●	◐	●	○	◐	Include	Low Quality
Naylor, J. M., 2012	●	●	●	●	●	●	Include	High Quality
Nazzal, M. I., 2012	●	●	◐	●	○	○	Include	Low Quality
Nunez, M., 2011	◐	●	◐	●	◐	○	Include	Low Quality
Padgett, D. E., 2018	●	●	●	●	●	●	Include	High Quality
Papakostidou, I., 2012	◐	◐	●	●	◐	○	Include	Low Quality
Park, K. K., 2007	●	●	●	●	◐	○	Include	Moderate Quality
Parsley, B. S., 2010	●	◐	●	●	○	○	Include	Low Quality
Peskun, C., 2012	◐	●	●	◐	◐	○	Include	Low Quality
Robbins, S. M., 2014	●	◐	◐	●	◐	○	Include	Low Quality
Robertson, F., 2012	◐	◐	◐	●	○	●	Include	Low Quality
Robinson, R. P., 2005	●	●	●	●	○	○	Include	Low Quality
Rossi, M. D., 2013	●	●	●	●	○	○	Include	Low Quality
Rossi, R., 2010	●	●	●	●	●	○	Include	Moderate Quality
Schurman, D. J., 2005	●	◐	●	●	○	○	Include	Low Quality
Sharma, L., 1996	●	●	●	●	●	○	Include	Moderate Quality
Si, H. B., 2017	●	●	●	●	◐	○	Include	Moderate Quality
Siddiqui, M. M., 2012	◐	◐	●	●	○	○	Include	Low Quality
Song, K., 2016	◐	●	●	◐	◐	○	Include	Low Quality
Stevens-Lapsley, J. E., 2010	●	◐	●	●	○	●	Include	Moderate Quality
Sullivan, M., 2009	●	●	●	●	●	●	Include	High Quality
Taniguchi, M., 2016	●	●	●	○	◐	○	Include	Low Quality
Tay, K. S., 2017	●	●	●	●	●	●	Include	High Quality
Torres-Claramunt, R., 2017	◐	●	●	●	○	○	Include	Low Quality
Tribe, K L, 2005	●	●	◐	●	◐	○	Include	Low Quality
Twiggs, J., 2017	●	●	●	●	●	●	Include	High Quality
Wada, O., 2016	◐	◐	◐	●	○	◐	Include	Low Quality
Wang, X., 2005	●	●	●	●	○	○	Include	Low Quality
Worland, R. L., 1998	●	●	◐	◐	○	●	Include	Low Quality
Xu, S., 2018	●	●	●	●	●	●	Include	High Quality
Yercan, H. S., 2006	●	●	◐	●	◐	○	Include	Low Quality
Zech, A., 2015	●	●	●	●	○	○	Include	Low Quality
Zeni, J. A., Jr., 2010	●	●	●	●	○	○	Include	Low Quality
Zietek, P., 2015	●	●	●	●	○	○	Include	Low Quality
Zietek, P., 2016	◐	●	●	●	○	◐	Include	Low Quality

Intervention – Observational:

Study	Design	Participant Recruitment	Allocation	Confounding Variables	Follow-Up Length	Other Bias?	Inclusion	Strength
Emerson, R. H., Jr., 2008							Include	Low Quality
Liao, C. D., 2017							Include	Low Quality

Figure 1: Summary of Findings PICO 8 - Age

Green up Arrow = older patients have **better** outcomes
 Red down Arrow = older patients have **worse** outcomes

Green up Arrow = older patients have **better** outcomes
 Red down Arrow = older patients have **worse** outcomes

	Lizaur-Utrilla, A., 2017	Kramers-de Quervain, I. A., 2012	High Quality
	Mizner, R. L., 2005		
	Naylor, J. M., 2012		
	Gatha, N. M., 2004		
	Sullivan, M., 2009		
	Bin, S. I., 2007		
	Holm, B., 2010		
	Lizauro, A., 1997		
	Park, K. K., 2007		
	Kaupplia, A. M., 2011		
	Sharma, L., 1996		
	Jones, C. A., 2003		
	Maiorano, E., 2017		
	Fernandez-Fernandez, R., 2015		
	Kuo, F. C., 2014		
	Zietek, P., 2015		
	Yercan, H. S., 2006		
	Brandes, M., 2011		
	Bade, M. J., 2014		
	Langlois, J., 2015		
	Zech, A., 2015		
	Rossi, M. D., 2013		
	Chatterji, U., 2005		
	Wang, X., 2005		
	Schurman, D. J., 2005		
	Bonnefoy-Mazure, A., 2017		
	Ha, C. W., 2016		
	Hsu, R. W., 1995		
	Clement, N. D., 2013		
	Zietek, P., 2016		
	Papakostidou, I., 2012		
	Hiyama, Y., 2017		
	Nazzari, M. I., 2012		
	Antony, J., 2017		
	Siddiqui, M. M., 2012		
	Bascuas, I., 2013		
	Dalury, Df, 2011		
	Robbins, S. M., 2014		
	Jones, C. A., 2012		
	Zenk, J. A., Jr., 2010		

Red down Arrow = older patients have **worse** outcomes

Figure 3: Summary of Findings PICO 8 - BMI

	High Quality	Moderate Quality	Low Quality								
	Lizaur-Utrilla, A., 2017	Xu, S., 2018	Si, H. B., 2017	Rossi, R., 2010	Lizaur-Utrilla, A., 2014	Song, K., 2016	Maiorano, E., 2017	Dowsey, M., 2010	Faraj, A. A., 2001	Dewan, A., 2009	Chung, L. H., 2011
↑ Better Outcomes											
↓ Worse Outcomes											
● Not Significant											
Complications											
Adverse Event (Pulmonary Complications)						↑					
Adverse Event (Rate of Infection in Females)							●				
Adverse Event (Rate of infection in Males)							●				
Adverse Event (Falls)			●								
Adverse Event (Radiolucency Lines)				●							
Acute Myocardial Infarction								●			
Any Adverse Events								↓		●	
Adverse Event (prosthesis survivorship)									●		
Anteroposterior Tibial Component Radiolucency										●	
DVT								↓			↓
Femoral Component Radiolucency										●	
Infection										●	
Joint infection								↓			
Lateral Tibial Radiolucency										●	
Pain and locking								●			
Patella Radiolucency										↓	
Patellar resurfacing within 12 months postop								●			
Patellar Tracking - Absent										●	
Patellar Tracking - Dislocated										●	
Patellar Tracking - Lateral subluxation then relocate										●	
Patellar Tracking - Normal										●	
Patellar Tracking - Permanent lateral subluxation										●	
Revision	●									●	
Ruptured patella tendon								●			
Ruptured quadriceps								●			
Successful Surgery										●	
Total adverse events								↓			
medical complications								●			
surgical complications								↓			
Unplanned readmissions								↓			
Unstable Knee								●			
Wound complications (superficial)					●			↓			
Adverse Event (Failure)											
Function											
Function (stair climbing ability)									●		
Other											
Function (SF-12 MCS)		↓									

Green up Arrow = high BMI is associated with **better** post op outcomes
Red down Arrow = high BMI is associated with **worse** post op outcomes

[illegible]

Red down Arrow = high BMI is associated with **worse** post op outcomes

Figure 5: Summary of Findings PICO 8 - Comorbid conditions

	High Quality	Moderate Quality					Low Quality										
	Tay, K. S., 2017	Sullivan, M., 2009	Kauppila, A. M., 2011	Jones, C. A., 2003	Dauty, M., 2009	Lizaur-Utrilla, A., 2014 (1)	Clement, N. D., 2013	Collados-Maestre, I., 2016	Lizaur-Utrilla, A., 2014 (2)	Peskun, C., 2012	Song, K., 2016	Maorano, E., 2017	Wang, X., 2005	Clement, N. D., 2013	Robbins, S. M., 2014	Jones, C. A., 2012	Nunez, M., 2011
Complications																	
Adverse Event (Clinical Failure)									↓	●							
Adverse Event (DVT)									●	●							
Adverse Event (Fat Embolism Syndrom)									●	●							
Adverse Event (ICU Admission)									↓	↓							
Adverse Event (Myocardial Infarction)									●	●							
Adverse Event (Pneumonia)									●	●							
Adverse Event (Prosthetic Infection)									●	●							
Adverse Event (Pulmonary Complications)									●	●							
Adverse Event (Pulmonary Embolism)									●	●							
Adverse Event (Rate of Infection in Females)												●					
Adverse Event (Rate of infection in Males)												●					
Adverse Event (Superficial Infection)									●	●							
Adverse Event (Total Complication Rate)	↓								●	●							
Adverse Event (Urinary Retention)									●	●							
Adverse Event (Revision Surgery)									●	●							
Adverse Event (Failure)						●											
Adverse Event (Readmission)									●	●							
Composite																	
Oxford Knee Score							↓										
Oxford Knee Score Improvement														↓			
SF-12 Score								↓									
Function																	
Function (Timed Up and Go Test)																	
Function (6 Minute Walk Test)																	
FIM - Motor subscale (hypertension vs no hypertension)												●					
FIM - Motor subscale(heart disease vs no heart disease)												●					
Function (Modified Barthel Index Improvement in Females)												●					
Function (Modified Barthel Index Improvement in Males)												●					
WOMAC Function		↓		↓												●	
WOMAC Function improvement			↓													●	
Knee Society Function								↓									
KOOS-PS																	
Length Of Stay																	
Other (Duration of Inpatient Rehabilitation)					●												
Other																	
Function (probability of achieving age-standardized 15D (HRQOL) reference score 12mo postop)			↓														

Green up Arrow = presence of comorbidities is associated with **better** post op outcomes

Red down Arrow = presence of comorbidities is associated with **worse** post op outcomes

Figure 6: Summary of Findings PICO 8 - Depression

	High Quality	Moderate Quality		Low Quality					
	Sullivan, M., 2009	Clement, N. D., 2013	Clement, N. D., 2013	Lizaur-Utrilla, A., 2014	Maiorano, E., 2017	Langlois, J., 2015	Clement, N. D., 2013	Hirschmann, M. T., 2013	Torres-Claramunt, R., 2017
Complications									
Adverse Event (Clinical Failure)				●					
Adverse Event (Rate of Infection in Females)					●				
Adverse Event (Rate of infection in Males)					●				
Composite									
Function (Knee Society Score)								●	
Function (Oxford Knee Score)		↓							
OKS			↓						
Function (KSS - Knee Score)								●	
Function									
Function (Active Knee Flexion)						↓			
Function (improvement in Oxford Knee Score (OKS) after TKR)							↓		
Function (Modified Barthel Index Change in Females)					●				
Function (Modified Barthel Index Change in Males)					●				
Function (WOMAC Function)								↓	
Function (WOMAC Stiffness)								↓	
Change in WOMAC Functional Score									↓
Function (KSS - Function)								●	
Function (Postop WOMAC Function)	●								
KSS Function									↓
sf12 physical			↓						
SF-36 Physical Component									●

Green up Arrow = Depression is associated with **better** post op outcomes

Red down Arrow = Depression is associated with **worse** post op outcomes

Figure 7: Summary of Findings PICO 8 - Diabetes

	Moderate Quality	Low Quality				
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Clement, N. D., 2013	Peskun, C., 2012	Song, K., 2016	Wang, X., 2005	Wada, O., 2016	Robertson, F., 2012
Complications						
Adverse Event (DVT)		●				
Adverse Event (Fat Embolism Syndrom)		●				
Adverse Event (ICU Admission)		●				
Adverse Event (Myocardial Infarction)		●				
Adverse Event (Pneumonia)		●				
Adverse Event (Prosthetic Infection)		●				
Adverse Event (Pulmonary Complications)			●			
Adverse Event (Pulmonary Embolism)		●				
Adverse Event (Readmission <30 days)		●				
Adverse Event (Superficial Infection)		●				
Adverse Event (Urinary Retention)		●				
Adverse Event (Revision Surgery)		●				
Composite						
Function (Oxford Knee Score)	●					
The New KSS Score					↓	
Knee Society Score						↓
Function						
FIM - Motor subscale				●		
Fixed Flexion Deformity (FFD)						↓
Knee Extension					●	
Knee Flexion					↓	
Maximum Flexion						↓
Quadriceps Strength					●	
The New KSS - Functional Activities					↓	
Total ROM						↓
Other						
The New KSS - Symptoms					●	

Green up Arrow = Diabetes is associated with **better** post op outcomes
Red down Arrow = Diabetes is associated with **worse** post op outcomes

Figure 8: Summary of Findings PICO 8 - Length of Stay

	Moderate Quality			Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Lizaur, A., 1997	Dauty, M., 2009	Liao, C. D., 2016	Wang, X., 2005
Function				
Function (FIM - Motor subscale)				↓
Function (Post op Flexion contracture)	●			
Function (Final Flexion)	●			
Function (Knee Flexion at 6 months)			↓	
Function (Knee Flexion at discharge)			↓	
Length Of Stay				
Other (Duration of Inpatient Rehabilitation)		●		

Green up Arrow = longer length of stay is associated with **better** post op outcomes

Red down Arrow = longer length of stay is associated with **worse** post op outcomes

Figure 9: Summary of Findings PICO 8 - Preop ROM

		High Quality			Moderate Quality			Low Quality												
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Mizner, R. L., 2005	Gatha, N. M., 2004	Bin, S. I., 2007	Cheng, K., 2010	Holm, B., 2010	Lizaur, A., 1997	Park, K. K., 2007	Liao, C. D., 2016	Lizaur-Utrilla, A., 2014	Bugala-Szpak, J., 2010	Bade, M. J., 2014	Zech, A., 2015	Schurman, D. J., 2005	Antony, J., 2017	Siddiqui, M. M., 2012	Zeni, J. A., Jr., 2010	Worland, R. L., 1998	Bin Abd Razak, H. R., 2014	Lee, D. C., 1998	
Complications																				
Adverse Event (Clinical Failure)									●											
Composite																				
Function (KOOS)										●										
Function (SF-36)										●										
Function (postop KSS)		●																		
Function (WOMAC score at 6 months)								↑												
Function (WOMAC score at discharge)								↑												
KSS				↑																
Function																				
Function (% change form pre to postop for 10-m fast-speed walk)					↑															
Function (Maximum Flexion)							●													
Function (Moderate or Severe Recurvatum (>5 degrees))															●					
Function (Post op Flexion contracture)						●														
Function (ROM)			↑											●						
Function (Timed Up and Go Test)	●																			
walk with handrail																●				
Fixed Flexion Deformity				↑																
Function (6 Minute Walk Test)																				
Maximum Flexion				●																
Total ROM				↑																
Function (Final Flexion)					↑															
Function (Knee Flexion at 6 months)								↑												
Function (Knee Outcome Survey- Activities of Daily Living Scale (KOS-ADLS))	●																			
Function (postop ROM)		↑																		
Function (SF-36 physical component summary (PCS))	●																			
Function (Stair Climbing Test)	●																			
Function (Active Knee ROM improvement from baseline)												↓								
Function (Knee Extension)		↑									↑									
Function (Passive Knee ROM improvement from baseline)												↓								
Flexion ROM																		↑		
Function (improvement absolute flexion)													↓							
Function (improvement in arc motion)													↓							
Function (improvement in arc of motion)													↓							
Function (Knee Flexion at 6 wks)																	●			
Function (maximum extension angle (MEA))														●						
Function (Maximum flexion angle (MFA))														●						
Function (Mean ROM - flexion)																			●	
Function (post op flexion of 90 degrees)					↑															

Green up Arrow = higher preop ROM is associated with **better** post op outcomes

Red down Arrow = higher preop ROM is associated with **worse** post op outcomes

Figure 10: Summary of Findings PICO 8 - Patient Support

	Moderate Quality		Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Sharma, L., 1996	Dauty, M., 2009	Papakostidou, I., 2012
Composite			
Function (KSS)			●
Function			
Function (WOMAC Function)			●
Function (SF-36 Physical Function 3mo postop)	●		
Function (WOMAC Stiffness)			●
Length Of Stay			
Other (Duration of Inpatient Rehabilitation)		●	

Figure 11: Summary of Findings PICO 8 - Preop Function

	High Quality					Moderate Quality										Low Quality														
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Mizner, R. L., 2005	Gatha, N. M., 2004	Sullivan, M., 2009	Bin, S. I., 2007	Twiggs, J., 2017	Lizaur, A., 1997	Park, K. K., 2007	Kauppila, A. M., 2011	Sharma, L., 1996	Jones, C. A., 2003	Dauty, M., 2009	Rossi, R., 2010	Stevens-Lapsley, J. E., 2010	Liao, C. D., 2016	Lizaur-Utrilla, A., 2014	Clement, N. D., 2013	Lizaur-Utrilla, A., 2014	Brandes, M., 2011	Bade, M. J., 2014	Langlois, J., 2015	Chatterji, U., 2005	Clement, N. D., 2013	Papakostidou, I., 2012	Hiyama, Y., 2017	Zeni, J. A., Jr., 2010	Lindberg, M. F., 2016	Worland, R. L., 1998	Bauman, R. D., 2012	Aderinto, J., 2005	
Complications																														
Adverse Event (Clinical Failure)																		↑												
Adverse Event (Radiolucency Lines)												●																		
Adverse Event (Failure)															●															
Function (postop fixed flexion deformity (FFD) > 10 degrees)																													↑	
Composite																														
Function (SF-36)																		↑												
Function (Oxford Knee Score)																↑						●								
Knee Society Score		●																	●				●						●	
Function																														
Function (% Time Spent on Locomotion)																		↑												
Function (6 min walk test)													↑						↑											
Function (Active Knee Flexion)																			↑											
Function (Life Space Assessment Score)																				↑				↑						
Function (Maximum Flexion)							↑																							
Function (Performance of Sporting Activities)																					↑									
Function (ROM)		●		●																										
Function (SF-36 Physical Function)									●	↑																				
Function (Time to discharge)																														
walk with handrail																										↑				
Function (Knee Flexion)	●					●									↑				↑									↓	↑	
Function (SF-36 Physical Component Score)																														
Function (Timed Up-and-Go)													↑																	
WOMAC Function			●							↑																				
WOMAC Function improvement																								↓						
Function (# Gait Cycles)																		↑												
Function (Flexion contracture)						●																								
Function (Oxford Knee Score Improvement)																						↓								
Function (Stair Climb Test)													↑																	
Function (step count 2-4 days postop)					↑																									
WOMAC Stiffness																							●							
Length Of Stay																														
Other (Duration of Inpatient Rehabilitation)											●																			
Other																														
Function (probability of achieving age-standardized 15D (HRQOL) reference score 12mo postop)										↓																				
Depression (HADS)																										↑				

Green up Arrow = higher preop function is associated with **better** post op outcomes

Red down Arrow = higher preop function is associated with **worse** post op outcomes

Figure 12: Summary of Findings PICO 8 - Preop Strength

	Moderate Quality	
↑ Better Outcomes ↓ Worse Outcomes • Not Significant	Holm, B., 2010	Sharma, L., 1996
Function		
Function (% change from pre to postop for 10-m fast-speed walk)	↑	
Function (SF-36 Physical Function 3mo postop)		•

Green up Arrow = higher preop strength is associated with **better** post op outcomes

Red down Arrow = higher preop strength is associated with **worse** post op outcomes

Figure 14: Summary of Findings PICO 8 - SES low vs High Education

	Moderate Quality	Low Quality
↑ Better Outcomes ↓ Worse Outcomes • Not Significant	Sharma, L., 1996	Papakostidou, I., 2012
Composite		
Function (KSS)		•
Function		
Function (WOMAC Function)		•
Function (SF-36 Physical Function 3mo postop)	•	
Function (WOMAC Stiffness)		•

Green up Arrow = Less Educated patients have **better** post op outcomes

Red down Arrow = Less educated patients have **worse** post op outcomes

Figure 15: Summary of Findings PICO 8 - SES Rural vs Urban

	Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Papakostidou, I., 2012
Composite	
Function (KSS)	●
Function	
Function (WOMAC Function)	●
Function (WOMAC Stiffness)	●

Figure 16: Summary of Findings PICO 8 - SES socioeconomic deprivation

	Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Clement, N. D., 2013
Function	
Function (improvement in Oxford Knee Score (OKS) after TKR)	●

Figure 17: Summary of Findings PICO 8 - Sex

	High Quality	Moderate Quality				Low Quality					
↑ Better Outcomes ↓ Worse Outcomes • Not Significant	Lizaur-Utrilla, A., 2017	Dauty, M., 2009	Si, H. B., 2017	Rossi, R., 2010	Lin, J., 2009	Lizaur-Utrilla, A., 2014	Peskun, C., 2012	Song, K., 2016	Messieh, M., 1999	Chung, L. H., 2011	Aderinto, J., 2005
Complications											
Adverse Event (Clinical Failure)						●					
Adverse Event (DVT)							●			↓	
Adverse Event (Fat Embolism Syndrom)							●				
Adverse Event (ICU Admission)							●				
Adverse Event (Myocardial Infarction)							●				
Adverse Event (Pneumonia)							●				
Adverse Event (Prosthetic Infection)							●				
Adverse Event (Pulmonary Complications)								●			
Adverse Event (Pulmonary Embolism)							●				
Adverse Event (Readmission <30 days)							●				
Adverse Event (Superficial Infection)							●				
Adverse Event (Suspicion of Pulmonary Embolism)									●		
Adverse Event (Urinary Retention)							●				
Adverse Event (Falls)			↓								
Adverse Event (Radiolucency Lines)				●							
Adverse Event (Revision Surgery)	●						●				
postop fixed flexion deformity (FFD) > 10 degrees											↑
Length Of Stay											
Other (Duration of Inpatient Rehabilitation)		↑									
Length of postop hospitalization					●						

Green up Arrow = Women have **better** post op outcomes

Red down Arrow = Women have **worse** post op outcomes

Figure 18: Summary of Findings PICO 8 - Sex continued

[illegible]

Green up Arrow = Women have **better** post op outcomes

Red down Arrow = Women have **worse** post op outcomes

Figure 19: Summary of Findings PICO 8 - Timing

	Moderate Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Lizaur, A., 1997
Function	
Function (Post op Flexion contracture)	●
Function (Final Flexion)	●

Green up Arrow = longer timing is associated with **better** outcomes

Red down Arrow = longer timing is associated with **worse** outcomes

Detailed Data Tables

Table 115: Age

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Antony, J., 2017	Low Quality	Age	Function (maximum extension angle (MEA))	1 year	105	Prognostic	continuous	unclear	p-value	>0.5	NS
Antony, J., 2017	Low Quality	Age	Function (Maximum flexion angle (MFA))	1 year	105	Prognostic	continuous	unclear	pvalue	>0.05	NS
Antony, J., 2017	Low Quality	Age	Function (ROM)	1 year	105	Prognostic	continuous	unclear	pvalue	>0.5	NS
Bade, M. J., 2014	Low Quality	Age	Function (6 min walk test)	6 months	64	Prognostic	continuous	Linear regression adjusted for age, sex, acute TUG time, preop TUG time	Adjusted Coefficient, SE, P-value	-1.3, 0.98, 0.21	NS
Bascuas, I., 2013	Low Quality	Age	Function (Modified Clinical Test for Sensory Interaction on Balance)	1 year	44	Prognostic	Continuous	Spearman Correlation	Correlation Coefficient, P-value	-0.369, 0.037	Age is negatively correlated with improved mCTSIB score at 1 year postop.
Bin, S. I., 2007	High Quality	Age	Function (ROM)	Post-Op	90	Prognostic (Received LPS-high flexion implants)	Continuous	Multiple logistic regression analysis	p-value	>0.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Bonnefoy-Mazure, A., 2017	Low Quality	Age	Function (Gain in Gait Speed 1 year post op)	1 year	79	Prognostic (Obese (BMI 30+) vs. Non-Obese (BMI <30))	Continuous	Multivariate Linear Regression Adjusted for BMI, gender, magnitude WOMAC pain improvement	Coefficient, 95% CI, pvalue	0, (-0.001, 0.004), 0.336	NS
Bonnefoy-Mazure, A., 2017	Low Quality	Age	Function (Gain in Knee ROM 1 year postop)	1 year	79	Prognostic (Obese (BMI 30+) vs. Non-Obese (BMI <30))	Continuous	Multivariable Linear Regression adjusted for BMI, gender, magnitude WOMAC pain improvement	Coefficient, 95% CI, pvalue	0, (-0.23, 0.23), 0.982	NS
Brandes, M., 2011	Low Quality	Age	Function (% Time Spent on Locomotion)	1 year	53	Prognostic	continuous	correlation	r, pvalue	0, 0.946	NS
Bugala-Szpak, J., 2010	Low Quality	Age	Function (KOOS)	6 weeks	40	Prognostic	age (groups in 5-year spans)	ANOVA, no adjustment	Mean Square, P-value	46.9845, 0.582636	NS
Bugala-Szpak, J., 2010	Low Quality	Age	Function (SF-36)	6 weeks	40	Prognostic	age (groups in 5-year spans)	ANOVA, no adjustment	Mean Square, P-Value	21.4394, 0.827079	NS
Chatterji, U., 2005	Low Quality	Age	Function (Oxford Knee Score)	Post-Op	144	Prognostic (cemented, uncemented, and hybrid prostheses used)	Age	Unclear correlation test	p-value	p>.05	NS
Chatterji, U., 2005	Low Quality	Age	Function (Performance of Sporting Activities)	Post-Op	144	Prognostic (cemented, uncemented, and hybrid prostheses used)	Continuous	Unclear correlation		>0.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Chatterji, U., 2005	Low Quality	Age	Function (Derived Sport Score)	Post-Op	144	Prognostic (cemented, uncemented, and hybrid prostheses used)	Continuous	Unclear Correlation	p-value	>0.05	NS
Clement, N. D., 2013	Low Quality	Age	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	mean age	univariate analysis for stepwise regression	p-value	0.17	NS
Dalury, Df, 2011	Low Quality	Age	Function (Reaction Time)	4 weeks	29	Prognostic	continuous	Correlation	Pearson correlation coefficient, p-value	-0.258, 0.18	NS
Dauty, M., 2009	Moderate Quality	Age	Other (Duration of Inpatient Rehabilitation)	Discharge	224	Prognostic	continuous	Univariate analysis for entry into multivariate regression	Coefficient, P-value	-0.10, 0.87	NS
Fernandez-Fernandez, R., 2015	Low Quality	Age	Aseptic Loosening (number of knees)	Post-Op	236	PICO 8 Prognostic	Group 2 age under 70 vs. Group 1 age over 70	none	mean; p-value	11; 0.024	Aseptic Loosening is associated with age (old vs. young); Fisher's

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Fernandez-Fernandez, R., 2015	Low Quality	Age	Flexion Deformity After Surgery (degrees)	Post-Op	236	PICO 8 Prognostic	Group 2 age under 70 vs. Group 1 age over 70	none	mean in degrees (SD); p-value	1.67 (3.62); 0.65	NS
Fernandez-Fernandez, R., 2015	Low Quality	Age	Knee Society knee score (median)	Post-Op	236	PICO 8 Prognostic	Group 1 age over 70 vs. Group 2 age under 70	survival analysis stratified by age (> or < 70 years)	median (SD); p-value	82.9 (11.0); 0.21	NS
Fernandez-Fernandez, R., 2015	Low Quality	Age	Osteolysis (number of knees)	Post-Op	236	PICO 8 Prognostic	Group 2 age under 70 vs. Group 1 age over 70	none	mean; p-value	12; 0.15	NS
Fernandez-Fernandez, R., 2015	Low Quality	Age	Polyethylene wear (number of knees)	Post-Op	236	PICO 8 Prognostic	Group 2 age under 70 vs. Group 1 age over 70	none	mean; p-value	24; 0.04	Polyethylene wear is associated with age (old vs. young); Fisher's test

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Fernandez-Fernandez, R., 2015	Low Quality	Age	Radiolucent Lines (number of knees)	Post-Op	236	PICO 8 Prognostic	Group 2 age under 70 vs. Group 1 age over 70	none	mean; p-value	71; 0.59	NS
Fernandez-Fernandez, R., 2015	Low Quality	Age	Range of Movement after surgery (degrees)	Post-Op	236	PICO 8 Prognostic	Group 2 age under 70 vs. Group 1 age over 70	none	mean in degrees (SD); p-value	95.36 (12.1); 0.23	NS
Fernandez-Fernandez, R., 2015	Low Quality	Age	Revisions	Post-Op	236	PICO 8 Prognostic	Group 2 age under 70 vs. Group 1 age over 70	none	mean; p-value	7; 0.46	NS
Fernandez-Fernandez, R., 2015	Low Quality	Age	Survivorship	Post-Op	236	PICO 8 Prognostic	Group 2 age under 70 vs. Group 1 age over 70	none	rate as percent; p-value	88.13 %; 0.013	Survivorship is associated with age (old vs. young); log rank test

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Gatha, N. M., 2004	High Quality	Age	Function (postop ROM)	Post-Op	135	Prognostic (TKA, cemented NexGen Legacy Posterior-Stabilized Prosthesis)	continuous	least squares adjustment (preop ROM, pre/post-resurfacing patellar thickness, change in patella thickness pre to post resurfacing, pre/post Insall-Salvati ratios, pre/post Blackburne-Peel ratios, preop alignment (varus, valgus, neutral), age, sex, preop extension, preop flexion, preop KSS)	coeff (SE); t-statistic	-0.15 (1.44); 0.47	NS
Ha, C. W., 2016	Low Quality	Age	Function (Knee Society Function)	Post-Op	630	Prognostic	continuous	Multiple Median Regression adjusted for preop ROM, change in ROM, age, sex, BMI, KS knee, KS function, and WOMAC pain, stiffness, and function	Regression Coefficient, (CI), p-value	-0.260, (-0.330 - 0.190), <.001	Significantly associated with lower postop KS function score
Ha, C. W., 2016	Low Quality	Age	Function (High Flexion Knee Score)	Post-Op	630	Prognostic	continuous	Multiple Median Regression adjusted for preop ROM, change in ROM, age, sex, BMI, KS knee, KS function, and WOMAC pain, stiffness, and function	Regression Coefficient, (CI), p-value	-0.003, (-0.013 - 0.067), <0.001	Significantly associated with a lower postop HKFS function score
Ha, C. W., 2016	Low Quality	Age	Function (WOMAC Function)	Post-Op	630	Prognostic	continuous	Multiple Median Regression adjusted for preop ROM, change in ROM, age, sex, BMI, KS knee, KS function, and WOMAC pain, stiffness, and function	Regression Coefficient, (CI), p-value	0.177, (0.109 - 0.244), <.001	Significantly associated with a higher postop WOMAC function score
Hiyama, Y., 2017	Low Quality	Age	Function (Life Space Assessment Score)	6 months	59	Prognostic	continuous	Univariate analysis for forward-backward stepwise entry			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Holm, B., 2010	Moderate Quality	Age	Function (% Changes from pre-to-post op Knee-Extension Strength)	Discharge	24	Prognostic	continuous	Multivariate linear regression adjusting for age, sex, knee swelling	Adjusted B, (CI), p-value	-0.1, (-1.1-0.7), .728	NS
Holm, B., 2010	Moderate Quality	Age	Function (% change form pre to postop for 10-m fast-speed walk)	Discharge	23	Prognostic	Continuous	Multivariate linear regression adjusting for age, sex, knee swelling, knee-extension strength, knee-flexion ROM	Adjusted B, (CI), p-value	-0.3, (-1.0-0.4), .436	NS
Hsu, R. W., 1995	Low Quality	Age	Function (Hospital for Special Surgery Knee Score)	Post-Op	26	Prognostic (Group 3 Old (65+) vs. Group 4 Young (<65))	Old vs. Young	Student T Test	Mean, SD, p-value	86.7, 10, 0.4444	NS
Hsu, R. W., 1995	Low Quality	Age	Function (Hospital for Special Surgery Knee Score)	Post-Op	26	Prognostic (Group 3 Old (65+) vs. Group 4 Young (<65))	Old vs. Young	Student T Test	Mean, SD, p-value	84.4, 14.4, 0.4444	NS
Jones, C. A., 2003	Moderate Quality	Age	Function (WOMAC Function ("standardized" - scores adjusted and direction reversed))	6 months	276	Prognostic	continuous	multiple linear regression adjusted for sex, preop WOMAC function, comorbid conditions, preop walking devices	Standardized coefficient, (CI), pvalue	0.18, (0.10, 0.60) 0.005	Age is significantly associated with WOMAC function at 6 mo postop

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Jones, C. A., 2003	Moderate Quality	Age	Function (SF-36 Physical Function)	6 months	276	Prognostic	continuous	multiple linear regression adjusted for sex, preop WOMAC function, preop walking distance, preop walking devices	standardized coefficient, (CI), p-value	0.09, (-0.06, 0.58), 0.12	NS
Jones, C. A., 2012	Low Quality	Age	Function (WOMAC function)	Post-Op	376	Prognostic (TKA)	Age, continuous	random effects model fitted for WOMAC function scores (time, time-square, BMI 30.0-34.9kg/m ² , BMI>=35.0kg/m ² , DM, cardiac disease, female, age, DMxtime, genderxtime)	Coeff (95% CI); p-value	-0.13 (-0.31, 0.05); 0.165	NS
Kauppila, A. M., 2011	Moderate Quality	Age	Function (self-reported functional recovery (WOMAC))	Post-Op	75	Prognostic (primary unilateral TKA due to OAK)	centered, Age-70	linear regression (age, male gender, presence of osteoporosis, WOMAC preop pain (centered, Wp=60), preop function of opposite knee)	Unstandardized linear regression coefficient (SE); pvalue	-0.69 (0.42); 0.11	NS
Kauppila, A. M., 2011	Moderate Quality	Age	Function (probability of achieving age-standardized 15D (HRQOL) reference score 12mo postop)	Post-Op	75	Prognostic (primary unilateral TKA due to OAK)	continuous	multivariate logistic regression of achieving age-standardized 15D (HRQOL) score (age, preop 15D score, WOMAC pain at 12mo f/u, pulmonary disease)	OR (95% CI); pvalue	0.87 (0.76, 0.99); 0.04	Higher age sig decreased the possibility to achieve the level of HRQOL of general population

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Kuo, F. C., 2014	Low Quality	Age	Atelectasis	90 days	150	PICO 8 Prognostic	G2 Control <80 vs. G1 Age greater than or equal to 80	Matched by sex, diagnosis, BMI, ASA score, type of anesthesia, comorbidities	p value	>.05	NS
Kuo, F. C., 2014	Low Quality	Age	DVT	90 days	150	PICO 8 Prognostic	G2 Control <80 vs. G1 Age greater than or equal to 80	Matched by sex, diagnosis, BMI, ASA score, type of anesthesia, comorbidities	p value	>.05	NS
Kuo, F. C., 2014	Low Quality	Age	ICU Care	90 days	150	PICO 8 Prognostic	G2 Control <80 vs. G1 Age greater than or equal to 80	Matched by sex, diagnosis, BMI, ASA score, type of anesthesia, comorbidities	p value	>.05	NS
Kuo, F. C., 2014	Low Quality	Age	Knee Society Function Score	Post-Op	150	PICO 8 Prognostic	G2 Control <80 vs. G1 Age greater than or equal to 80	Matched by sex, diagnosis, BMI, ASA score, type of anesthesia, comorbidities	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Kuo, F. C., 2014	Low Quality	Age	KSS Score	Post-Op	150	PICO 8 Prognostic	G2 Control <80 vs. G1 Age greater than or equal to 80	Matched by sex, diagnosis, BMI, ASA score, type of anesthesia, comorbidities	p value	>.05	NS
Kuo, F. C., 2014	Low Quality	Age	Myocardial Infarction	90 days	150	PICO 8 Prognostic	G2 Control <80 vs. G1 Age greater than or equal to 80	Matched by sex, diagnosis, BMI, ASA score, type of anesthesia, comorbidities	p value	>.05	NS
Kuo, F. C., 2014	Low Quality	Age	Pneumonia	90 days	150	PICO 8 Prognostic	G2 Control <80 vs. G1 Age greater than or equal to 80	Matched by sex, diagnosis, BMI, ASA score, type of anesthesia, comorbidities	p value	>.05	NS
Kuo, F. C., 2014	Low Quality	Age	Pulmonary Embolism	90 days	150	PICO 8 Prognostic	G2 Control <80 vs. G1 Age greater than or equal to 80	Matched by sex, diagnosis, BMI, ASA score, type of anesthesia, comorbidities	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Kuo, F. C., 2014	Low Quality	Age	ROM	Post-Op	150	PICO 8 Prognostic	G2 Control <80 vs. G1 Age greater than or equal to 80	Matched by sex, diagnosis, BMI, ASA score, type of anesthesia, comorbidities	p value	>.05	NS
Kuo, F. C., 2014	Low Quality	Age	Superficial Wound Infection	90 days	150	PICO 8 Prognostic	G2 Control <80 vs. G1 Age greater than or equal to 80	Matched by sex, diagnosis, BMI, ASA score, type of anesthesia, comorbidities	p value	>.05	NS
Kuo, F. C., 2014	Low Quality	Age	WOMAC	Post-Op	150	PICO 8 Prognostic	G2 Control <80 vs. G1 Age greater than or equal to 80	Matched by sex, diagnosis, BMI, ASA score, type of anesthesia, comorbidities	p value	>.05	NS
Langlois, J., 2015	Low Quality	Age	Function (Active Knee Flexion)	Post-Op	460	Prognostic	continuous	Univariate mixed model analysis	Coefficient, SE	0.1, 0.05	NS
Lizaur, A., 1997	Moderate Quality	Age	Function (Final Flexion)	Post-Op	74	Prognostic	unclear	Pearson or Spearman Correlation	p-value	0.48	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lizaur, A., 1997	Moderate Quality	Age	Function (Post op Flexion contracture)	Post-Op	74	Prognostic	continuous	Pearson or Spearman Correlation	p-value	0.66	NS
Lizaur-Utrilla, A., 2014	Low Quality	Age	Adverse Event (Clinical Failure)	Post-Op	414	Prognostic	continuous	Univariate analysis for step wise logistic regression	P-value	0.452	NS
Lizaur-Utrilla, A., 2017	High Quality	Age	Adverse Event (Revision)	Post-Op	119	Prognostic	unclear	Cox Proportional Hazards Regression adjusted for gender, BMI	HR, 95% CI	0.9, (0.8-1.0)	NS
Lizaur-Utrilla, A., 2017	High Quality	Age	Knee Extension Lag Degrees	Post-Op	119	PICO 8 Prognostic	Group 2: Old Group vs. Group 1: Young Group	matched for gender, BMI, preop KSS-function	mean, SD, p-value	1.2, 1.1, 0.031	Older age is significantly associated with higher (past 5 years) Knee Extension Lag Degrees
Lizaur-Utrilla, A., 2017	High Quality	Age	Knee Extension Lag Degrees	5 years	119	PICO 8 Prognostic	Group 2: Old Group vs. Group 1: Young Group	matched for gender, BMI, preop KSS-function	mean, SD, p-value	1.1, 1.9, "n.s."	NS
Lizaur-Utrilla, A., 2017	High Quality	Age	Knee Flexion	Post-Op	119	PICO 8 Prognostic	Group 2: Old Group vs. Group 1: Young Group	matched for gender, BMI, preop KSS-function	mean, SD, p-value	80.6, 9.3, 0.028	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lizaur-Utrilla, A., 2017	High Quality	Age	Knee Flexion	5 years	119	PICO 8 Prognostic	Group 2: Old Group vs. Group 1: Young Group	matched for gender, BMI, preop KSS-function	mean, SD, p-value	84.8, 7.9, 0.001	NS
Lizaur-Utrilla, A., 2017	High Quality	Age	KSS - Function	Post-Op	119	PICO 8 Prognostic	Group 2: Old Group vs. Group 1: Young Group	matched for gender, BMI, preop KSS-function	mean, SD, p-value	105.6, 14.2, "n.s."	Younger age is significantly associated with a higher postop KSS-function score (p=0.018)
Lizaur-Utrilla, A., 2017	High Quality	Age	KSS - Function	5 years	119	PICO 8 Prognostic	Group 2: Old Group vs. Group 1: Young Group	matched for gender, BMI, preop KSS-function	mean, SD, p-value	106.7, 12.8, "n.s."	NS
Lizaur-Utrilla, A., 2017	High Quality	Age	KSS - Knee	Post-Op	119	PICO 8 Prognostic	Group 2: Old Group vs. Group 1: Young Group	matched for gender, BMI, preop KSS-function	mean, SD, p-value	81.1, 12.3, 0.018	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lizaur-Utrilla, A., 2017	High Quality	Age	KSS - Knee	5 years	119	PICO 8 Prognostic	Group 2: Old Group vs. Group 1: Young Group	matched for gender, BMI, preop KSS-function	mean, SD, p-value	90.1, 10.2, "n.s."	NS
Lizaur-Utrilla, A., 2017	High Quality	Age	SF-12 Physical	Post-Op	119	PICO 8 Prognostic	Group 2: Old Group vs. Group 1: Young Group	matched for gender, BMI, preop KSS-function	mean, SD, p-value	78.3, 7.6, 0.001	Older Age is significantly associated with worse (past 5 years) SF-12 Physical Score
Lizaur-Utrilla, A., 2017	High Quality	Age	SF-12 Physical	5 years	119	PICO 8 Prognostic	Group 2: Old Group vs. Group 1: Young Group	matched for gender, BMI, preop KSS-function	mean, SD, p-value	83.8, 8.6, "n.s."	NS
Lizaur-Utrilla, A., 2017	High Quality	Age	WOMAC - Function	Post-Op	119	PICO 8 Prognostic	Group 2: Old Group vs. Group 1: Young Group	matched for gender, BMI, preop KSS-function	p value		Older age is significantly associated with worse WOMAC function scores at final follow-up (p=0.028)

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lizaur-Utrilla, A., 2017	High Quality	Age	WOMAC - Function	5 years	119	PICO 8 Prognostic	Group 2: Old Group vs. Group 1: Young Group	matched for gender, BMI, preop KSS-function	p value		Older age is significantly associated with worse WOMAC function scores at 5 years (p=0.001)
Maiorano, E., 2017	Low Quality	Age	Function (Modified Barthel Index Change in Females)	Post-Op	268	Prognostic	continuous	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission	Beta Coefficient, (CI), P-value	-0.256, (-0.362 - 0.150), <0.001	Higher age is associated with lower postop MBI scores in females.
Maiorano, E., 2017	Low Quality	Age	Adverse Event (Rate of Infection in Females)	Post-Op	268	Prognostic	continuous	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS
Maiorano, E., 2017	Low Quality	Age	Function (Modified Barthel Index Change in Males)	Post-Op	85	Prognostic	continuous	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS
Maiorano, E., 2017	Low Quality	Age	Adverse Event (Rate of infection in Males)	Post-Op	85	Prognostic	continuous	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS
Messieh, M., 1999	Low Quality	Age	Adverse Event (Suspicion of Pulmonary Embolism)	Post-Op	124	Prognostic	continuous	Mann Whitney U test	significance	>0.5	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Mizner, R. L., 2005	High Quality	Age	Function (Knee Flexion)	Post-Op	40	Prognostic (# of pts; 25 men, 15 women)	Continuous	Pearson Correlation	Coefficient, p-value	0.235, 0.144	NS
Mizner, R. L., 2005	High Quality	Age	Function (Quadriceps Strength)	Post-Op	40	Prognostic (# of pts; 25 men, 15 women)	Continuous	Pearson Correlation	Coefficient, p-value	0.009, 0.955	NS
Naylor, J. M., 2012	High Quality	Age	Function (Recovery of Knee Flexion)	Post-Op	191	Prognostic	Low preop flexion compared to medium preop flexion compared to high preop flexion	Longitudinal data modeling using a MIXED method adjusted for age, sex, and BMI	P-value	0.08	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Naylor, J. M., 2012	High Quality	Age	Function (Terminal Knee Extension Recovery)	Post-Op	191	Prognostic	Preop restricted terminal knee extension compared to preop non-restricted terminal knee extension	Longitudinal data modeling using a MIXED method adjusted for age, sex, and BMI			NS
Naylor, J. M., 2012	High Quality	Age	Function (Oxford Knee Score)	Post-Op	191	Prognostic	Low preop flexion compared to medium preop flexion compared to high preop flexion	Longitudinal data modeling using a MIXED method adjusted for age, sex, and BMI			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Naylor, J. M., 2012	High Quality	Age	Function (Oxford Knee Score)	Post-Op	191	Prognostic	Preop restricted terminal knee extension compared to preop non-restricted terminal knee extension	Longitudinal data modeling using a MIXED method adjusted for age, sex, and BMI			NS
Nazzal, M. I., 2012	Low Quality	Age	Function (magnitude of improvement in ROM (degrees))	2 weeks	56	Prognostic (60+ years vs. below 60)	60+ years vs. below 60	t-test	p-value	0.007	Above 60 years showed significantly greater magnitude of ROM improvement
Nazzal, M. I., 2012	Low Quality	Age	Function (magnitude of improvement in ROM (degrees))	3 months	56	Prognostic (60+ years vs. below 60)	60+ years vs. below 60	t-test	p-value	0.006	Above 60 years showed significantly greater magnitude of ROM improvement
Papakostidou, I., 2012	Low Quality	Age	Function (KSS)	12 months	204	Prognostic	<65 vs 65 or older	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop KSS			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Papakostidou, I., 2012	Low Quality	Age	Function (WOMAC Function)	12 months	204	Prognostic	<65 vs 65 or older	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	-2.47, (-5.23, 0.28), 0.07	NS
Papakostidou, I., 2012	Low Quality	Age	Function (WOMAC Stiffness)	12 months	204	Prognostic	<65 vs 65 or older	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	-0.18, (-0.53-0.17), 0.3	NS
Park, K. K., 2007	Moderate Quality	Age	Function (Maximum Flexion)	12 months	207	Prognostic (All pts Korean)	Continuous	Correlation adjusted for BMI, weight, and type of implant			NS
Peskun, C., 2012	Low Quality	Age	Adverse Event (Myocardial Infarction)	Pre-Op	156	Prognostic	continuous	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1, (0.88-1.13), 0.966	NS
Peskun, C., 2012	Low Quality	Age	Adverse Event (Pneumonia)	Post-Op	156	Prognostic	continuous	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1.1, (0.71-1.56), 0.819	NS
Peskun, C., 2012	Low Quality	Age	Adverse Event (Prosthetic Infection)	Post-Op	156	Prognostic	continuous	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1, (0.86-1.23), 0.745	NS
Peskun, C., 2012	Low Quality	Age	Adverse Event (Fat Embolism Syndrom)	Pre-Op	156	Prognostic	continuous	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1.1, (0.83-1.39), 0.585	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Peskun, C., 2012	Low Quality	Age	Adverse Event (DVT)	Post-Op	156	Prognostic	continuous	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1, (0.96-1.11), 0.367	NS
Peskun, C., 2012	Low Quality	Age	Adverse Event (Pulmonary Embolism)	Post-Op	156	Prognostic	continuous	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1.1, (0.97-1.32), 0.13	NS
Peskun, C., 2012	Low Quality	Age	Adverse Event (Urinary Retention)	Pre-Op	156	Prognostic	continuous	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1.1, (0.97-1.15), 0.214	NS
Peskun, C., 2012	Low Quality	Age	Adverse Event (Superficial Infection)	Post-Op	156	Prognostic	continuous	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1, (0.94-1.11), 0.579	NS
Peskun, C., 2012	Low Quality	Age	Adverse Event (ICU Admission)	Post-Op	156	Prognostic	continuous	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1, (0.94-1.11), 0.643	NS
Peskun, C., 2012	Low Quality	Age	Adverse Event (Readmission <30 days)	Pre-Op	156	Prognostic	continuous	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1, (0.80-1.17), 0.725	NS
Peskun, C., 2012	Low Quality	Age	Adverse Event (Revision Surgery)	Post-Op	156	Prognostic	continuous	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.9, (0.88-1.01), 0.071	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Robbins, S. M., 2014	Low Quality	Age	Function (Timed Up and Go Test)	3 days	72	Prognostic	Continuous	Step wise Multivariate linear regression adjusted for age and comorbidity	Standardized coefficient, p-value	0.34, <0.01	Age is significantly associated with higher timed up and go test at 3 days postop.
Robbins, S. M., 2014	Low Quality	Age	Function (WOMAC Function)	3 days	72	Prognostic	continuous	Step wise Multivariate linear regression adjusted for age, gender, BMI, pain severity, comorbidity, pain catastrophizing, strength			NS
Rossi, M. D., 2013	Low Quality	Age	Function (Asymmetry stand)	Discharge	38	Prognostic	continuous	Pearson correlation	Correlation coefficient	0.03	NS
Rossi, M. D., 2013	Low Quality	Age	Function (Asymmetry 30-degree Squat)	Discharge	38	Prognostic	continuous	Pearson Correlation	Correlation Coefficient	0.19	NS
Rossi, M. D., 2013	Low Quality	Age	Function (Asymmetry 60-degree Squat)	Discharge	38	Prognostic	continuous	Pearson Correlation	Correlation Coefficient	-0.09	NS
Rossi, R., 2010	Moderate Quality	Age	Adverse Event (Radiolucency Lines)	Post-Op	62	Prognostic	continuous	Multivariable Logistic Regression adjusted for age, sex, BMI, follow-up time, cement penetration, tibial slope, femoral flexion, frontal alignment, clinical, functional, total pre-op and post-op Knee Scores			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Schurman, D. J., 2005	Low Quality	Age	Function (final change in ROM)	Post-Op	358	Prognostic (5 different types of prostheses: insall-burstein I, insall-burstein II, apollo, performance, ascent)	age, continuous	linear model controlled for preop arc of motion	p-value	0.89	NS
Sharma, L., 1996	Moderate Quality	Age	Function (SF-36 Physical Function 3mo postop)	3 months	47	Prognostic	continuous	Multiple regression adjusted for social support, education, and gender	partial r, significance	0.03, 0.874	NS
Si, H. B., 2017	Moderate Quality	Age	Adverse Event (Falls)	1 year	321	Prognostic	70+ years old vs. <70 (ref)	Binary Logistic Regression	OR, 95% CI	21.46, (2.75, 167.75)	Those 70+ y/o are at significantly higher odds of falls @ 1 year postop
Si, H. B., 2017	Moderate Quality	Age	Adverse Event (Falls)	2 years	350	Prognostic	70+ years old vs. <70 (ref)	Binary Logistic Regression	OR, 95% CI	2.80, (0.68, 11.51)	NS
Siddiqui, M. M., 2012	Low Quality	Age	Function (Moderate or Severe Recurvatum (>5 degrees))	2 years	2587	Prognostic	continuous	Binary Logistic Regression adjusted for BMI, diagnosis, preoperative hyperextension, implant design, and postop AP laxity	pvalue	0.27	NS
Song, K., 2016	Low Quality	Age	Adverse Event (Pulmonary Complications)	Post-Op	111	Prognostic	continuous	Univariate analysis T-test for entering into multivariate logistic regression	P-value	0.548	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Sullivan, M., 2009	High Quality	Age	Function (Postop WOMAC Function)	Post-Op	75	Prognostic	continuous	Hierarchical regression analysis adjusted for sex	Beta coefficient	0.09	NS
Tay, K. S., 2017	High Quality	Age	Adverse Event (Total Complication Rate)	2 years	418	Prognostic	>=80 vs <80	Binomial logistic regression; pts and controls matched on gender, BMI, diagnosis, surgeon, surgery side, history of TKA, year of surgery	Odds Ratio, CI, P-value	1.50, (0.78-2.89), 0.221	NS
Wang, X., 2005	Low Quality	Age	Function (FIM - Motor subscale)	Discharge	49	Prognostic (Selected from an inpatient orthopaedic ward)		Spearman Correlation	Correlation Coefficient, P-value	-0.39, <0.001	Age is negatively correlated with FIM score
Yercan, H. S., 2006	Low Quality	Age	Adverse Event (Knee Stiffness (<75 degree flexion after 10 days))	Post-Op	46	Prognostic (pts received early or late manipulation under anesthesia)	Continuous	Correlation	p-value	>0.05	NS
Zech, A., 2015	Low Quality	Age	Function (Active Knee ROM)	Discharge	64	Prognostic (Exercise Therapy)	continuous	Medical condition and gender included in model as factors; Baseline values, age, BMI, days after surgery, and exercise therapy dosage (duration and intensity) included as covariates	Analysis of Covariance, P-value, R ²	0.441, 0.024	NS
Zech, A., 2015	Low Quality	Age	Function (Passive Knee ROM)	Discharge	64	Prognostic (Exercise Therapy)	continuous	Medical condition and gender included in model as factors; Baseline values, age, BMI, days after surgery, and exercise therapy dosage (duration and intensity) included as covariates	Analysis of Covariance, P-value, R ²	0.498, 0.019	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Zeni, J. A., Jr., 2010	Low Quality	Age	walk with handrail	3 months	105	PICO 8 Prognostic	age continuous	none	p value	<.05	Handrail users were significantly older than non-users
Zeni, J. A., Jr., 2010	Low Quality	Age	walk with handrail	2 years	105	PICO 8 Prognostic	age continuous	none	p value	<.05	Handrail users were significantly older than non-users
Zietek, P., 2015	Low Quality	Age	(Knee Function Score)	2 weeks	62	Prognostic	Older age vs. younger age		Spearman's Rank Correlation Coefficients, p-value	-0.43, p<0.001	Older age inversely correlated with lower post-op knee function
Zietek, P., 2016	Low Quality	Age	Function (Knee Society Score)	6 weeks	78	Prognostic	Continuous	Multiple linear regression adjusted for age, sex, and TNF-alpha concentrations	Beta Coefficient, (CI), P-value	0.07, (-0.17-0.32), 0.56	NS
Zietek, P., 2016	Low Quality	Age	Function (KSS)	6 weeks	78	Prognostic	continuous	Multiple linear regression controlled for logTN-alpha and sex	regression coefficient B, 95% CI, pvalue	0.07, (-0.17, 0.32), 0.56	NS

Table 116: BMI

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Bin, S. I., 2007	High Quality	BMI	Function (ROM)	Post-Op	90	Prognostic (Received LPS-high flexion implants)	Continuous	Multiple logistic regression analysis	p-value	>0.05	NS
Bonnefoy-Mazure, A., 2017	Low Quality	BMI	Function (Gain in Gait Speed 1 year post op)	1 year	79	Prognostic (Obese (BMI 30+) vs. Non-Obese (BMI <30))	BMI 30+ vs. BMI <30	Multivariate Linear Regression adjusted for: gender, age, magnitude WOMAC pain improvement	Coefficient, 95% CI, pvalue	-0.07, (-0.16, 0.02), 0.117	NS
Bonnefoy-Mazure, A., 2017	Low Quality	BMI	Function (Gain in Knee ROM 1 year postop)	1 year	79	Prognostic (Obese (BMI 30+) vs. Non-Obese (BMI <30))	BMI 30+ vs. BMI <30	Multivariate Linear Regression adjusted for gender, age, magnitude WOMAC pain improvement	Coefficient, 95% CI, pvalue	-0.26, (-3.79, 3.30), 0.891	NS
Bonnefoy-Mazure, A., 2017	Low Quality	BMI	SF-12 Physical Score	1 years	79	PICO 8 Prognostic	Group 3 non-obese vs. Group 2 Obese	none	p value	>.05	NS
Bonnefoy-Mazure, A., 2017	Low Quality	BMI	WOMAC Function Score	1 years	79	PICO 8 Prognostic	Group 3 non-obese vs. Group 2 Obese	none	p value		Obesity is significantly associated with higher WOMAC function score at 1 yr postop
Chalidis, B. E., 2010	Low Quality	BMI	Function (Knee Flexion)	1 day	100	Prognostic (BMI <35 vs BMI >=35)	BMI <35 vs BMI >=35	none	t-test		NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Chalidis, B. E., 2010	Low Quality	BMI	Function (Knee Flexion)	2 days	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (Knee Flexion)	3 days	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (Knee Flexion)	4 days	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (Knee Flexion)	5 days	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (Knee Flexion)	6 days	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (Knee Flexion)	2 weeks	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (Knee Flexion)	6 weeks	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (Knee Flexion)	3 months	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Chalidis, B. E., 2010	Low Quality	BMI	Function (Knee Flexion)	6 months	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (Knee Flexion)	1 year	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (Knee Flexion)	2 years	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (KSS - Function)	2 weeks	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (KSS - Function)	6 weeks	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (KSS - Function)	3 months	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (KSS - Function)	6 months	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chalidis, B. E., 2010	Low Quality	BMI	Function (KSS - Function)	1 year	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Chalidis, B. E., 2010	Low Quality	BMI	Function (KSS - Function)	2 years	100	Prognostic (BMI <35 vs BMI ≥35)	BMI <35 vs BMI ≥35	none	t-test		NS
Chung, L. H., 2011	Low Quality	BMI	Deep Vein Thrombosis	Post-Op	328	PICO 8 Prognostic	BMI ≥30 vs. BMI <30	none	p value	p<.05	Significantly higher in BMI of 30 or more group
Dewan, A., 2009	Low Quality	BMI	Anteroposterior or Tibial Component Radiolucency	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Any Complication	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Extension Lag - 10-20 degrees	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Extension Lag - <10 degrees	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Extension Lag - >20 degrees	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Extension Lag - None	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Femoral Component Radiolucency	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Flexion Contracture - 11-15 degrees	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Flexion Contracture - 16-20 degrees	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Flexion Contracture - 5-10 degrees	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Flexion Contracture - >20 degrees	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Flexion Contracture - None	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Functional Knee Society Score	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Infection	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Lateral Tibial Radiolucency	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Objective Knee Society Score	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Patellar Tracking - Absent	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Patellar Tracking - Dislocated	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Patellar Tracking - Lateral subluxation then relocate	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Patellar Tracking - Normal	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Patellar Tracking - Permanent lateral subluxation	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Revision	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	SCA - Normal up/down with rail	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	SCA - Unable	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	SCA - Up and down with rail	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	SCA - Up with rail; unable down	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Stair Climbing Ability (SCA) - Normal up/down	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Successful Surgery	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Unlimited Walking Ability	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Walking Ability - housebound	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Walking Ability - unable	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Walking Ability 1-5 blocks	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Walking Ability 5-10 blocks	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Walking Support - Cane	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Walking Support - Crutches/Walker	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Walking Support - None	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Walking Support - Two canes	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS
Dewan, A., 2009	Low Quality	BMI	Walking ability >10 blocks	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Hamstring Strength - 5 on a 5 point scale	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	% overweight/ % in obese group/ % in morbidly obese group (p value)	90%/97%/71%(p=.001)	perfect quadriceps strength was less likely in the morbidly obese group
Dewan, A., 2009	Low Quality	BMI	Quadriceps Strength - 5 on a 5 point scale	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	% overweight/ % in obese group/ % in morbidly obese group (p value)	92%/96%/71%(p=.001)	perfect hamstring strength was less likely in the morbidly obese group

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dewan, A., 2009	Low Quality	BMI	Patella Radiolucency	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	% overweight/% in obese group/% in morbidity obese group (p value)	6%/10%/24%(p=.009)	patellar radiolucency more likely in morbidly obese patients
Dewan, A., 2009	Low Quality	BMI	Range of Motion	average 5.4 years	220	PICO 8 Prognostic	morbidity obese(>40) vs obese(30-39) vs overweight(bmi 25 to 30)	none	mean rom in overweight/rom in obese/rom in morbidity obese (p value)	123/120/111(p=.009)	range of motion was worse in morbidly obese group
Dowsey, M. M., 2010	Low Quality	BMI	Adverse Event (Odds of Adverse Event (list of possible events))	Post-Op	521	Prognostic (Regression with no comparison)	continuous	Logistic regression adjusted for age and gender	adjusted OR, 95% CI	1.084, (1.043, 1.126)	BMI is positively associated with increased odds of adverse outcome; pvalue not listed
Dowsey, M. M., 2010	Low Quality	BMI	Deep-vein thrombosis	1 year	472	PICO 8 Prognostic	Obese vs Non-obese	none	RR	2.43(0.25,23.15)	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dowsey, M. M., 2010	Low Quality	BMI	Joint infection	1 year	472	PICO 8 Prognostic	Obese vs Non-obese	none	RR	3.23(0.36,28.71)	NS
Dowsey, M. M., 2010	Low Quality	BMI	Pain and locking	1 year	472	PICO 8 Prognostic	Obese vs Non-obese	none	RD	0(-0.01,0.01)	NS
Dowsey, M. M., 2010	Low Quality	BMI	Wound complications (superficial	1 year	472	PICO 8 Prognostic	Obese vs Non-obese	none	RR	2.43(0.98,6)	NS
Dowsey, M. M., 2010	Low Quality	BMI	Total surgical complications	1 year	472	PICO 8 Prognostic	Obese vs Non-obese	none	RR	2.36(1.29,4.32)	worse outcome in obese group
Dowsey, M. M., 2010	Low Quality	BMI	Unplanned readmissions	1 year	472	PICO 8 Prognostic	Obese vs Non-obese	none	RR	2.34(1.17,4.7)	worse outcome in obese group
Dowsey, M. M., 2010	Low Quality	BMI	Total adverse events	1 year	472	PICO 8 Prognostic	Obese vs Non-obese	none	RR	1.59(1.07,2.37)	worse outcome in obese group
Dowsey, M. M., 2010	Low Quality	BMI	Deep-vein thrombosis	1 year	268	PICO 8 Prognostic	morbidity obese vs non-obese	none	RR	11.11(1.18,104.75)	worse outcome in morbidly obese group

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dowsey, M. M., 2010	Low Quality	BMI	Joint infection	1 year	268	PICO 8 Prognostic	morbidity obese vs non-obese	none	RR	11.11(1.18,104.75)	worse outcome in morbidly obese group
Dowsey, M. M., 2010	Low Quality	BMI	Pain and locking	1 year	268	PICO 8 Prognostic	morbidity obese vs non-obese	none	RD	0.02(-0.02,0.06)	NS
Dowsey, M. M., 2010	Low Quality	BMI	Wound complications (superficial	1 year	268	PICO 8 Prognostic	morbidity obese vs non-obese	none	RR	5.55(2.06,14.95)	worse outcome in morbidly obese group
Dowsey, M. M., 2010	Low Quality	BMI	Total surgical complications	1 year	268	PICO 8 Prognostic	morbidity obese vs non-obese	none	RR	4.27(2.16,8.45)	worse outcome in morbidly obese group
Dowsey, M. M., 2010	Low Quality	BMI	Unplanned readmissions	1 year	268	PICO 8 Prognostic	morbidity obese vs non-obese	none	RR	4.81(2.23,10.4)	worse outcome in morbidly obese group
Dowsey, M. M., 2010	Low Quality	BMI	Total adverse events	1 year	268	PICO 8 Prognostic	morbidity obese vs non-obese	none	RR	2.47(1.52,4.01)	worse outcome in morbidly obese group

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dowsey, M. M., 2010	Low Quality	BMI	Acute Myocardial Infarction	1 year	529	PICO 8 Prognostic	morbidity obese vs obese vs non-obese	none	p value from chi square	p > .05	NS
Dowsey, M. M., 2010	Low Quality	BMI	Patellar resurfacing within 12 months postop	1 year	529	PICO 8 Prognostic	morbidity obese vs obese vs non-obese	none	p value from chi square	p > .05	NS
Dowsey, M. M., 2010	Low Quality	BMI	Poor Range of Movement	1 year	529	PICO 8 Prognostic	morbidity obese vs obese vs non-obese	none	p value from chi square	p > .05	NS
Dowsey, M. M., 2010	Low Quality	BMI	Ruptured patella tendon	1 year	529	PICO 8 Prognostic	morbidity obese vs obese vs non-obese	none	p value from chi square	p > .05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dowsey, M. M., 2010	Low Quality	BMI	Ruptured quadriceps	1 year	529	PICO 8 Prognostic	morbidity obese vs obese vs non-obese	none	p value from chi square	p > .05	NS
Dowsey, M. M., 2010	Low Quality	BMI	Total medical complications	1 year	529	PICO 8 Prognostic	morbidity obese vs obese vs non-obese	none	p value from chi square	p > .05	NS
Dowsey, M. M., 2010	Low Quality	BMI	Unstable Knee	1 year	529	PICO 8 Prognostic	morbidity obese vs obese vs non-obese	none	p value from chi square	p > .05	NS
Faraj, A. A., 2001	Low Quality	BMI	Function (HSS)	Post-Op	178	Prognostic (Overweight vs. Normal Weight; Obese vs. Normal Weight)	Overweight (25-29.9) Vs. Normal Weight (<25)	Unclear			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Faraj, A. A., 2001	Low Quality	BMI	Function (HSS)	Post-Op	129	Prognostic (Overweight vs. Normal Weight; Obese vs. Normal Weight)	Obese (30-34.9) vs. Normal Weight (<25)	Unclear			NS
Faraj, A. A., 2001	Low Quality	BMI	Function (walking distance)	Post-Op	129	Prognostic (Overweight vs. Normal Weight; Obese vs. Normal Weight)	Overweight (25-29.9) Vs. Normal Weight (<25)	Unclear			NS
Faraj, A. A., 2001	Low Quality	BMI	Function (walking distance)	Post-Op	129	Prognostic (Overweight vs. Normal Weight; Obese vs. Normal Weight)	Obese (30-34.9) vs. Normal Weight (<25)	Unclear			NS
Faraj, A. A., 2001	Low Quality	BMI	Function (stair climbing ability)	Post-Op	129	Prognostic (Overweight vs. Normal Weight; Obese vs. Normal Weight)	Overweight (25-29.9) Vs. Normal Weight (<25)	Unclear			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Faraj, A. A., 2001	Low Quality	BMI	Function (stair climbing ability)	Post-Op	129	Prognostic (Overweight vs. Normal Weight; Obese vs. Normal Weight)	Obese (30-34.9) vs. Normal Weight (<25)	Unclear			NS
Faraj, A. A., 2001	Low Quality	BMI	Adverse Event (prosthesis survivorship)	Post-Op	129	Prognostic (Overweight vs. Normal Weight; Obese vs. Normal Weight)	Overweight (25-29.9) Vs. Normal Weight (<25)	Unclear			NS
Faraj, A. A., 2001	Low Quality	BMI	Adverse Event (prosthesis survivorship)	Post-Op	129	Prognostic (Overweight vs. Normal Weight; Obese vs. Normal Weight)	Obese (30-34.9) vs. Normal Weight (<25)	Unclear			NS
Ha, C. W., 2016	Low Quality	BMI	Function (Knee Society Function)	Post-Op	630	Prognostic	continuous	Multiple Median Regression adjusted for preop ROM, change in ROM, age, sex, BMI, KS knee, KS function, and WOMAC pain, stiffness, and function	Regression Coefficient, (CI), p-value	0.008, (-0.099-0.116), 0.874	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Ha, C. W., 2016	Low Quality	BMI	Function (High Flexion Knee Score)	Post-Op	630	Prognostic	continuous	Multiple Median Regression adjusted for preop ROM, change in ROM, age, sex, BMI, KS knee, KS function, and WOMAC pain, stiffness, and function	Regression Coefficient, (CI), p-value	-0.007, (-0.052-0.038), 0.756	NS
Ha, C. W., 2016	Low Quality	BMI	Function (WOMAC Function)	Post-Op	630	Prognostic	continuous	Multiple Median Regression adjusted for preop ROM, change in ROM, age, sex, BMI, KS knee, KS function, and WOMAC pain, stiffness, and function	Regression Coefficient, (CI), p-value	0.014, (-0.099-0.129), 0.806	NS
Hsu, R. W., 1995	Low Quality	BMI	Function (Hospital for Special Surgry Knee)	Pre-Op	44	Prognostic (Group5/6/7 Comparison: 3 BMI Groups)	"Q-Index" = body weight / (body height /100)^2; aka BMI; 3 BMI groups compared	ANOVA	mean, SD, pvalue	51.9, 11.4, 0.2609	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Hsu, R. W., 1995	Low Quality	BMI	Function (Hospital for Special Surgry Knee)	Post-Op	44	Prognostic (Group5/6/7 Comparison: 3 BMI Groups)	"Q-Index" = body weight / (body height /100)^2; aka BMI; 3 BMI groups compared	ANOVA	mean, SD, pvalue	87.6, 9.8, 0.5185	NS
Hsu, R. W., 1995	Low Quality	BMI	Function (Hospital for Special Surgry Knee)	Pre-Op	26	Prognostic (Group5/6/7 Comparison: 3 BMI Groups)	"Q-Index" = body weight / (body height /100)^2; aka BMI; 3 BMI groups compared	ANOVA	mean, SD, pvalue	55.6, 10.9, 0.2609	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Hsu, R. W., 1995	Low Quality	BMI	Function (Hospital for Special Surgry Knee)	Post-Op	26	Prognostic (Group5/6/7 Comparison: 3 BMI Groups)	"Q-Index" = body weight / (body height /100)^2; aka BMI; 3 BMI groups compared	ANOVA	mean, SD, pvalue	85, 13.9, 0.5185	NS
Hsu, R. W., 1995	Low Quality	BMI	Function (Hospital for Special Surgry Knee)	Pre-Op	35	Prognostic (Group5/6/7 Comparison: 3 BMI Groups)	"Q-Index" = body weight / (body height /100)^2; aka BMI; 3 BMI groups compared	ANOVA	mean, SD, pvalue	56.2, 14.8, 0.2609	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Hsu, R. W., 1995	Low Quality	BMI	Function (Hospital for Special Surgry Knee)	Post-Op	35	Prognostic (Group5/6/7 Comparison: 3 BMI Groups)	"Q-Index" = body weight / (body height /100)^2; aka BMI; 3 BMI groups compared	ANOVA	mean, SD, pvalue	85.1, 10.8, 0.5185	NS
Jones, C. A., 2012	Low Quality	BMI	Function (WOMAC function)	Post-Op	376	Prognostic (TKA)	BMI 30.0-34.9 kg/m ² vs. BMI <30	random effects model fitted for WOMAC function scores (time, time-square, BMI 30.0-34.9kg/m ² , BMI>=35.0kg/m ² , DM, cardiac disease, female, age, DMxtime, genderxtime)	Coeff (95% CI); p-value	0.67 (-3.15, 4.49); 0.731	NS
Jones, C. A., 2012	Low Quality	BMI	Function (WOMAC function)	Post-Op	376	Prognostic (TKA)	BMI >= 35.0 kg/m ² vs. BMI <30	random effects model fitted for WOMAC function scores (time, time-square, BMI 30.0-34.9kg/m ² , BMI>=35.0kg/m ² , DM, cardiac disease, female, age, DMxtime, genderxtime)	Coeff (95% CI); p-value	5.06 (0.79, 9.34); 0.020	BMI >= 35 is significantly associated with worse WOMAC function score
Langlois, J., 2015	Low Quality	BMI	Function (Active Knee Flexion)	Post-Op	460	Prognostic	continuous	Univariate mixed model analysis	Coefficient, SE, p-value	-0.3, 0.09, <0.0001	BMI is significantly associated with lower postop active knee flexion.

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Liao, C. D., 2016	Moderate Quality	BMI	Function (Knee Flexion at 6 months)	6 months	354	Prognostic (All patients received CPM and inpatient rehab exercises)	continuous	model contained CPM initial angle, CPM progress, CPM ultimate angle, Length of stay, Peak motion pain, BMI, Preop flexion, preop WOMAC	Stepwise linear regression, beta value, +/- standard error, p-value	-0.525 +/- 0.090, p<0.001	higher bmi was associated with worse flexion
Liao, C. D., 2016	Moderate Quality	BMI	Function (WOMAC score at discharge)	Discharge	354	Prognostic (All patients received CPM and inpatient rehab exercises)	continuous	model contained CPM initial angle, CPM progress, CPM ultimate angle, BMI, Preoperative flexion	Stepwise linear regression, beta value, +/- standard error, p-value	0.235 +/- 0.051, p<0.001	higher bmi was associated with worse WOMAC scores

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Liao, C. D., 2016	Moderate Quality	BMI	Function (WOMAC score at 6 months)	6 months	345	Prognostic (All patients received CPM and inpatient rehab exercises)	continuous	model contained CPM initial angle, CPM progress, CPM ultimate angle, BMI, Preoperative flexion	Stepwise linear regression, beta value, +/- standard error, p-value	0.053 +/- 0.024, p<0.05	higher bmi was associated with worse WOMAC scores
Liao, C. D., 2017	Low Quality	BMI	Function (Poor Knee Flexion (<95 degrees))	1 month	154	Prognostic	Overweight (24.0-26.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	1.71, (0.64, 4.60), 0.289	NS
Liao, C. D., 2017	Low Quality	BMI	Function (Poor Knee Flexion (<95 degrees))	1 month	149	Prognostic	Class 1 Obesity (27-29.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	3.28, (1.21, 8.85), 0.019	Class 1 Obese are at significantly higher odds of poor knee flexion compared normal @ 1 month postop

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Liao, C. D., 2017	Low Quality	BMI	Function (Poor Knee Flexion (<95 degrees))	1 month	141	Prognostic	Class 2 Obesity (30.0-34.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	4.77, (1.76, 12.91), 0.002	Class 2 Obese are at significantly higher odds of poor knee flexion compared normal @ 1 month postop
Liao, C. D., 2017	Low Quality	BMI	Function (Poor Knee Flexion (<95 degrees))	1 month	87	Prognostic	Class 3 Obesity (35.0+) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	9.08, (2.46, 33.52), 0.001	Class 3 Obese are at significantly higher odds of poor knee flexion compared normal @ 1 month postop
Liao, C. D., 2017	Low Quality	BMI	Function (Poor Knee Flexion (<95 degrees))	3 months	154	Prognostic	Overweight (24.0-26.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	1.06, (0.41, 2.75), 0.899	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Liao, C. D., 2017	Low Quality	BMI	Function (Poor Knee Flexion (<95 degrees))	3 months	149	Prognostic	Class 1 Obesity (27-29.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	1.02, (0.38, 2.75), 0.967	NS
Liao, C. D., 2017	Low Quality	BMI	Function (Poor Knee Flexion (<95 degrees))	3 months	87	Prognostic	Class 3 Obesity (35.0+) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	5.17, (1.44, 18.59), 0.005	Class 3 Obese are at significantly higher odds of poor knee flexion compared normal @ 3 month postop
Liao, C. D., 2017	Low Quality	BMI	Function (Poor Knee Flexion (<95 degrees))	6 months	154	Prognostic	Overweight (24.0-26.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	2.28, (0.99, 5.24), 0.053	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Liao, C. D., 2017	Low Quality	BMI	Function (Poor Knee Flexion (<95 degrees))	6 months	149	Prognostic	Class 1 Obesity (27-29.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	4.09, (1.73, 9.72), 0.001	Class 1 Obese are at significantly higher odds of poor knee flexion compared normal @ 6 month postop
Liao, C. D., 2017	Low Quality	BMI	Function (Poor Knee Flexion (<95 degrees))	6 months	141	Prognostic	Class 2 Obesity (30.0-34.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	5.86, (2.43, 14.15), <0.001	Class 2 Obese are at significantly higher odds of poor knee flexion compared normal @ 6 month postop
Liao, C. D., 2017	Low Quality	BMI	Function (Poor Knee Flexion (<95 degrees))	6 months	87	Prognostic	Class 3 Obesity (35.0+) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	11.95, (3.49, 40.94), <0.001	Class 3 Obese are at significantly higher odds of poor knee flexion compared normal @ 6 month postop

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Liao, C. D., 2017	Low Quality	BMI	Function (Poor WOMAC Physical Function Score (>33 points))	1 month	154	Prognostic	Overweight (24.0-26.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	1.44, (0.71, 2.91), 0.315)	NS
Liao, C. D., 2017	Low Quality	BMI	Function (Poor WOMAC Physical Function Score (>33 points))	1 month	149	Prognostic	Class 1 Obesity (27-29.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	1.72, (0.81, 3.64), 0.160	NS
Liao, C. D., 2017	Low Quality	BMI	Function (Poor WOMAC Physical Function Score (>33 points))	1 month	141	Prognostic	Class 2 Obesity (30.0-34.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	4.76, (2.07, 10.94), <0.001	Class 2 Obese are at significantly higher odds of poor WOMAC-PF compared normal @ 1 month postop

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Liao, C. D., 2017	Low Quality	BMI	Function (Poor WOMAC Physical Function Score (>33 points))	1 month	87	Prognostic	Class 3 Obesity (35.0+) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	9.72, (2.54, 37.14), 0.001	Class 3 Obese are at significantly higher odds of poor WOMAC-PF compared normal @ 1 month postop
Liao, C. D., 2017	Low Quality	BMI	Function (Poor WOMAC Physical Function Score (>33 points))	3 months	154	Prognostic	Overweight (24.0-26.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	2.21, (1.08, 4.52), 0.030	Overweight indiv are at significantly higher odds of poor WOMAC-PF compared normal @ 3 month postop
Liao, C. D., 2017	Low Quality	BMI	Function (Poor WOMAC Physical Function Score (>33 points))	3 months	149	Prognostic	Class 1 Obesity (27-29.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	2.74, (1.28, 5.87), 0.009	Class 1 Obese are at significantly higher odds of poor WOMAC-PF compared normal @ 3 month postop

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Liao, C. D., 2017	Low Quality	BMI	Function (Poor WOMAC Physical Function Score (>33 points))	3 months	141	Prognostic	Class 2 Obesity (30.0-34.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	4.17, (1.89, 9.19), <0.001	Class 2 Obese are at significantly higher odds of poor WOMAC-PF compared normal @ 3 month postop
Liao, C. D., 2017	Low Quality	BMI	Function (Poor WOMAC Physical Function Score (>33 points))	3 months	87	Prognostic	Class 3 Obesity (35.0+) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	12.60, (3.67, 43.28), <0.001	Class 3 Obese are at significantly higher odds of poor WOMAC-PF compared normal @ 3 month postop
Liao, C. D., 2017	Low Quality	BMI	Function (Poor WOMAC Physical Function Score (>33 points))	6 months	154	Prognostic	Overweight (24.0-26.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	1.95, (0.89, 4.28), 0.095	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Liao, C. D., 2017	Low Quality	BMI	Function (Poor WOMAC Physical Function Score (>33 points))	6 months	149	Prognostic	Class 1 Obesity (27-29.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	2.30, (1.02, 5.22), 0.046	Class 1 Obese are at significantly higher odds of poor WOMAC-PF compared normal @ 6 month postop
Liao, C. D., 2017	Low Quality	BMI	Function (Poor WOMAC Physical Function Score (>33 points))	6 months	141	Prognostic	Class 2 Obesity (30.0-34.9) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	2.83, (1.25, 6.41), 0.013	Class 2 Obese are at significantly higher odds of poor WOMAC-PF compared normal @ 6 month postop
Liao, C. D., 2017	Low Quality	BMI	Function (Poor WOMAC Physical Function Score (>33 points))	6 months	87	Prognostic	Class 3 Obesity (35.0+) vs. Normal Weight (18.5-23.9)	Logistic Regression adjusted for age, sex, CIRS, LoS, pre-op knee flexion, pre-op WOMAC-PH	adjusted OR, 95% CI, P-value	5.09, (1.62, 16.03), 0.005	Class 3 Obese are at significantly higher odds of poor WOMAC-PF compared normal @ 6 month postop

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lizaur, A., 1997	Moderate Quality	BMI	Function (Final Range of Flexion)	Post-Op	74	Prognostic	continuous	Multivariate logistic regression adjusted for preop flexion, others(?)	r, p-value	-0.30, -0.030	BMI is significantly associated with worse postop flexion
Lizaur-Utrilla, A., 2014	Moderate Quality	BMI	Adverse Event (Failure)	Pre-Op	342	Prognostic	BMI 30 or higher vs BMI <30	Multivariate logistic regression with obese cases matched with non-obese controls for gender, age, OA, and preop KSS	P-value	0.1665	NS
Lizaur-Utrilla, A., 2017	High Quality	BMI	Adverse Event (Revision)	Post-Op	119	Prognostic	continuous	Cox Proportional Hazards Regression adjusted for age, gender	HR, 95% CI	1.0, (0.9, 1.2)	NS
Maiorano, E., 2017	Low Quality	BMI	Function (Modified Barthel Index Change in Females)	Post-Op	268	Prognostic	continuous	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS
Maiorano, E., 2017	Low Quality	BMI	Adverse Event (Rate of Infection in Females)	Post-Op	268	Prognostic	continuous	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS
Maiorano, E., 2017	Low Quality	BMI	Function (Modified Barthel Index Change in Males)	Post-Op	85	Prognostic	continuous	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS
Maiorano, E., 2017	Low Quality	BMI	Adverse Event (Rate of infection in Males)	Post-Op	85	Prognostic	Continuous	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Napier, R. J., 2014	Low Quality	BMI	Bartlett Patellar Knee Score	3 months	100	PICO 8 Prognostic	Non-obese vs. Morbidly Obese	Matched with non-obese group by age, gender, and preop diagnosis	p value	>.05	NS
Napier, R. J., 2014	Low Quality	BMI	Bartlett Patellar Knee Score	1 years	100	PICO 8 Prognostic	Non-obese vs. Morbidly Obese	Matched with non-obese group by age, gender, and preop diagnosis	p value	>.05	NS
Napier, R. J., 2014	Low Quality	BMI	Fixed Flexion Deformity	3 months	100	PICO 8 Prognostic	Non-obese vs. Morbidly Obese	Matched with non-obese group by age, gender, and preop diagnosis	p value	>.05	NS
Napier, R. J., 2014	Low Quality	BMI	Fixed Flexion Deformity	1 years	100	PICO 8 Prognostic	Non-obese vs. Morbidly Obese	Matched with non-obese group by age, gender, and preop diagnosis	p value	>.05	NS
Napier, R. J., 2014	Low Quality	BMI	Oxford Knee Score	3 months	100	PICO 8 Prognostic	Non-obese vs. Morbidly Obese	Matched with non-obese group by age, gender, and preop diagnosis	p value	>.05	NS
Napier, R. J., 2014	Low Quality	BMI	Oxford Knee Score	1 years	100	PICO 8 Prognostic	Non-obese vs. Morbidly Obese	Matched with non-obese group by age, gender, and preop diagnosis	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Napier, R. J., 2014	Low Quality	BMI	ROM	3 months	100	PICO 8 Prognostic	Non-obese vs. Morbidly Obese	Matched with non-obese group by age, gender, and preop diagnosis	p value	>.05	NS
Napier, R. J., 2014	Low Quality	BMI	ROM	1 years	100	PICO 8 Prognostic	Non-obese vs. Morbidly Obese	Matched with non-obese group by age, gender, and preop diagnosis	p value		Non-obese group favored (p = 0.033)
Napier, R. J., 2014	Low Quality	BMI	SF-12 PCS	3 months	100	PICO 8 Prognostic	Non-obese vs. Morbidly Obese	Matched with non-obese group by age, gender, and preop diagnosis	p value	>.05	NS
Napier, R. J., 2014	Low Quality	BMI	SF-12 PCS	12 months	100	PICO 8 Prognostic	Non-obese vs. Morbidly Obese	Matched with non-obese group by age, gender, and preop diagnosis	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Naylor, J. M., 2012	High Quality	BMI	Function (Recovery of Knee Flexion)	Post-Op	191	Prognostic	continuousLow preop flexion compared to medium preop flexion compared to high preop flexion	Longitudinal data modeling using a MIXED method adjusted for age, sex, and BMI	P-value	0.47	NS
Naylor, J. M., 2012	High Quality	BMI	Function (Terminal Knee Extension Recovery)	Post-Op	191	Prognostic	Preop restricted terminal knee extension compared to proep non-restricted terminal knee extension	Longitudinal data modeling using a MIXED method adjusted for age, sex, and BMI			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Naylor, J. M., 2012	High Quality	BMI	Function (Oxford Knee Score)	Post-Op	191	Prognostic	Low preop flexion compared to medium preop flexion compared to high preop flexion	Longitudinal data modeling using a MIXED method adjusted for age, sex, and BMI			NS
Naylor, J. M., 2012	High Quality	BMI	Function (Oxford Knee Score)	Post-Op	191	Prognostic	Preop restricted terminal knee extension compared to proep non-restricted terminal knee extension	Longitudinal data modeling using a MIXED method adjusted for age, sex, and BMI	P-value	0.03	Higher BMIs had a worse postop OKS score.
Nazzal, M. I., 2012	Low Quality	BMI	Function (magnitude of change in ROM (degrees))	Post-Op	56	Prognostic (60+ years vs. below 60)	weight (continuous)	Pearson Product Moment correlation			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Papakostidou, I., 2012	Low Quality	BMI	Function (KSS)	12 months	204	Prognostic	<30 vs. 30 or higher	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop KSS			NS
Papakostidou, I., 2012	Low Quality	BMI	Function (WOMAC Function)	12 months	204	Prognostic	<30 vs. 30 or higher	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	-0.97, (-3.41-1.46), 0.4	NS
Papakostidou, I., 2012	Low Quality	BMI	Function (WOMAC Stiffness)	12 months	204	Prognostic	<30 vs 30 or greater	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	-0.06, (-0.37-0.24), 0.4	NS
Robbins, S. M., 2014	Low Quality	BMI	Function (Timed Up and Go Test)	3 days	72	Prognostic	continuous	Step wise Multivariate linear regression adjusted for age, gender, BMI, pain severity, comorbidity, pain catastrophizing, strength			NS
Robbins, S. M., 2014	Low Quality	BMI	Function (Timed Up and Go Test)	3 days	72	Prognostic		Pearson Correlation	Correlation Coefficient	-0.08	NS
Robbins, S. M., 2014	Low Quality	BMI	Function (WOMAC Function)	3 days	72	Prognostic		Step wise Multivariate linear regression adjusted for age, gender, BMI, pain severity, comorbidity, pain catastrophizing, strength			NS
Robbins, S. M., 2014	Low Quality	BMI	Function (WOMAC Function)	3 months	72	Prognostic		Pearson Correlation	Correlation Coefficient	-0.03	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Robinson, R. P., 2005	Low Quality	BMI	Function (HSS Score)	Post-Op	66	Prognostic	BMI	Unclear	p-value	<.01 (negative correlation)	higher BMI is associated with worse HSS score
Robinson, R. P., 2005	Low Quality	BMI	Function (Knee Society function score)	Post-Op	66	Prognostic	BMI	Unclear	p-value	<.01 (negative correlation)	higher BMI is associated with worse KSS score
Rossi, M. D., 2013	Low Quality	BMI	Function (Asymmetry stand)	Discharge	38	Prognostic	continuous	Pearson Correlation	Correlation Coefficient	0.13	NS
Rossi, M. D., 2013	Low Quality	BMI	Function (Asymmetry 30-degree Squat)	Discharge	38	Prognostic	continuous	Pearson Correlation	Correlation Coefficient	-0.14	NS
Rossi, M. D., 2013	Low Quality	BMI	Function (Asymmetry 60-degree Squat)	Discharge	38	Prognostic	continuous	Pearson Correlation	Correlation Coefficient	-0.14	NS
Rossi, R., 2010	Moderate Quality	BMI	Adverse Event (Radiolucency Lines)	Post-Op	62	Prognostic	Continuous	Multivariable Logistic Regression adjusted for age, sex, BMI, follow-up time, cement penetration, tibial slope, femoral flexion, frontal alignment, clinical, functional, total pre-op and post-op Knee Scores			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Schurman, D. J., 2005	Low Quality	BMI	Function (final change in arc of motion)	Post-Op	358	Prognostic (5 different types of prostheses: insall-burstein I, insall-burstein II, apollo, performance, ascent)	BMI, continuous	linear model controlled for preop arc of motion	regression coefficient of improvement in arc of motion	-.31, p<.05	high bmi is associated with less improvement in arc of motion
Sharma, L., 1996	Moderate Quality	BMI	Function (SF-36 Physical Function 3mo postop)	3 months	47	Prognostic	continuous	Multiple regression adjusted for bodily pain, CIRS score, previous reconstruction, motivation, social function, role function-emotional, age, education, gender, social support	partial r, significance	-0.04, 0.805	NS
Si, H. B., 2017	Moderate Quality	BMI	Adverse Event (Falls)	1 year	321	Prognostic	BMI 25+ vs. <25 (ref)	Binary Logistic Regression	OR, 95% CI	1.12, (0.38, 3.33)	NS
Si, H. B., 2017	Moderate Quality	BMI	Adverse Event (Falls)	2 years	350	Prognostic	BMI 25+ vs. <25 (ref)	Binary Logistic Regression	OR, 95% CI	1.78, (0.35, 9.14)	NS
Siddiqui, M. M., 2012	Low Quality	BMI	Function (Moderate or Severe Recurvatum (>5 degrees))	2 years	2587	Prognostic	continuous	Binary Logistic Regression adjusted for age, diagnosis, preoperative hyperextension, implant design, and postop AP laxity	pvalue	0.87	NS
Song, K., 2016	Low Quality	BMI	Adverse Event (Pulmonary Complications)	Post-Op	111	Prognostic	continuous	Multivariate logistic regression adjusting for BMI, smoking, operation time, and blood transfusion	Odds Ratio, CI, P-value	0.879, (0.776 - 0.995), 0.042	Higher BMI is associated with a decreased risk of postop pulmonary complications

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Stevens-Lapsley, J. E., 2010	Moderate Quality	BMI	Function (Timed Up-and-Go)	1 month	140	Prognostic	continuous	Linear regression adjusted for preop TUG, BMI	P-value for Significant F Change	0.778	NS
Stevens-Lapsley, J. E., 2010	Moderate Quality	BMI	Function (Timed Up-and-Go)	3 months	120	Prognostic	continuous	Linear regression adjusted for preop TUG, BMI	P-value for Significant F Change	0.46	NS
Stevens-Lapsley, J. E., 2010	Moderate Quality	BMI	Function (Timed Up-and-Go)	6 months	106	Prognostic	continuous	Linear regression adjusted for preop TUG, BMI	P-value for Significant F Change	0.247	NS
Stevens-Lapsley, J. E., 2010	Moderate Quality	BMI	Function (6 Minute Walk Test)	1 month	118	Prognostic	continuous	Linear regression adjusted for preop 6MWT, BMI	P-value for Significant F Change	0.366	NS
Stevens-Lapsley, J. E., 2010	Moderate Quality	BMI	Function (6 Minute Walk Test)	3 months	100	Prognostic	continuous	Linear regression adjusted for preop 6MWT, BMI	P-value for Significant F Change	0.421	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Stevens-Lapsley, J. E., 2010	Moderate Quality	BMI	Function (6 Minute Walk Test)	6 months	85	Prognostic	continuous	Linear regression adjusted for preop 6MWT, BMI	P-value for Significant F Change	0.603	NS
Stevens-Lapsley, J. E., 2010	Moderate Quality	BMI	Function (Stair Climb Test)	1 month	140	Prognostic	continuous	Linear regression adjusted for preop SCT, BMI	P-value for Significant F Change	0.571	NS
Stevens-Lapsley, J. E., 2010	Moderate Quality	BMI	Function (Stair Climb Test)	3 months	120	Prognostic	continuous	Linear regression adjusted for preop SCT, BMI	P-value for Significant F Change	0.861	NS
Stevens-Lapsley, J. E., 2010	Moderate Quality	BMI	Function (Stair Climb Test)	6 months	106	Prognostic	continuous	Linear regression adjusted for preop SCT, BMI	P-value for Significant F Change	0.698	NS
Stevens-Lapsley, J. E., 2010	Moderate Quality	BMI	Function (SF-36 Physical Component Score)	1 month	140	Prognostic	continuous	Linear regression adjusted for preop SF-36 (PCS), BMI	P-value for Significant F Change	0.636	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Stevens-Lapsley, J. E., 2010	Moderate Quality	BMI	Function (SF-36 Physical Component Score)	3 months	120	Prognostic	continuous	Linear regression adjusted for preop SF-36 (PCS), BMI	P-value for Significant F Change	0.912	NS
Stevens-Lapsley, J. E., 2010	Moderate Quality	BMI	Function (SF-36 Physical Component Score)	6 months	106	Prognostic	continuous	Linear regression adjusted for preop SF-36 (PCS), BMI	P-value for Significant F Change	0.174	NS
Sullivan, M., 2009	High Quality	BMI	Function (Postop WOMAC Function)	Post-Op	75	Prognostic	Preop BMI	Pearson Correlation	Correlation Coefficient	0.16	NS
Xu, S., 2018	High Quality	BMI	Function (Knee Society Function Score)	2 years	126	Prognostic	BMI ≥30 vs BMI <30	Multiple linear regression adjusted for age, gender, charlson comorbidity	Beta Coefficient, (CI), P-value	-9, (-16 - -2), 0.014	BMI ≥30 is associated with lower KSF scores at 2 years postop
Xu, S., 2018	High Quality	BMI	Function (Knee Society Function Score)	10 years	126	Prognostic	BMI ≥30 vs BMI <30	Multiple linear regression adjusted for age, gender, charlson comorbidity	Beta Coefficient, (CI), P-value	-13, (-20 - -6), <0.001	BMI ≥30 is associated with lower KSF scores at 10 years postop
Xu, S., 2018	High Quality	BMI	Function (Knee Society Knee Score)	2 years	126	Prognostic	BMI ≥30 vs BMI <30	Multiple linear regression adjusted for age, gender, charlson comorbidity	Beta Coefficient, (CI), P-value	1, (-2-5), 0.569	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Xu, S., 2018	High Quality	BMI	Function (Knee Society Knee Score)	10 years	126	Prognostic	BMI ≥ 30 vs BMI < 30	Multiple linear regression adjusted for age, gender, charlson comorbidity	Beta Coefficient, (CI), P-value	-4, (-10 - 3), 0.305	NS
Xu, S., 2018	High Quality	BMI	Function (Oxford Knee Score)	2 years	126	Prognostic	BMI ≥ 30 vs BMI < 30	Multiple linear regression adjusted for age, gender, charlson comorbidity	Beta Coefficient, (CI), P-value	1, (-1 - 2), 0.278	NS
Xu, S., 2018	High Quality	BMI	Function (Oxford Knee Score)	10 years	126	Prognostic	BMI ≥ 30 vs BMI < 30	Multiple linear regression adjusted for age, gender, charlson comorbidity	Beta Coefficient, (CI), P-value	5, (3 - 8), < 0.001	BMI ≥ 30 is associated with higher Oxford scores at 10 years postop
Xu, S., 2018	High Quality	BMI	Function (SF-12 PCS)	2 years	126	Prognostic	BMI ≥ 30 vs BMI < 30	Multiple linear regression adjusted for age, gender, charlson comorbidity	Beta Coefficient, (CI), P-value	-2, (-6 - 2), 0.329	NS
Xu, S., 2018	High Quality	BMI	Function (SF-12 PCS)	10 years	126	Prognostic	BMI ≥ 30 vs BMI < 30	Multiple linear regression adjusted for age, gender, charlson comorbidity	Beta Coefficient, (CI), P-value	-3, (-7 - 1), 0.137	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Xu, S., 2018	High Quality	BMI	Function (SF-12 MCS)	Post-Op	126	Prognostic	BMI ≥ 30 vs BMI < 30	unpaired t-test	mean (SD) obese/mean (SD) non-obese; p-value	50 (11); 0.01/56 (10); 0.01	obese patients had worse mcs scores
Zech, A., 2015	Low Quality	BMI	Function (Active Knee ROM)	Discharge	64	Prognostic (Exercise Therapy)	continuous	Medical condition and gender included in model as factors; Baseline values, age, BMI, days after surgery, and exercise therapy dosage (duration and intensity) included as covariates	Analysis of Covariance, P-value, R ²	0.093, 0.109	NS
Zech, A., 2015	Low Quality	BMI	Function (Passive Knee ROM)	Discharge	64	Prognostic (Exercise Therapy)	continuous	Medical condition and gender included in model as factors; Baseline values, age, BMI, days after surgery, and exercise therapy dosage (duration and intensity) included as covariates	Analysis of Covariance, P-value, R ²	0.771, 0.004	NS
Zeni, J. A., Jr., 2010	Low Quality	BMI	walk with handrail	3 months	105	PICO 8 Prognostic	BMI	none	p value	>.05	NS
Zeni, J. A., Jr., 2010	Low Quality	BMI	walk with handrail	2 years	105	PICO 8 Prognostic	BMI	none	p value	>.05	NS

Table 117: Comorbid Conditions

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Clement, N. D., 2013	Moderate Quality	Comorbid Conditions	Function (Oxford Knee Score)	1 year	2392	Prognostic	Back Pain vs no back pain	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	-2.41, (-3.18, -1.64), <0.001	Back pain is significantly associated with a lower postop OKS score.
Clement, N. D., 2013	Moderate Quality	Comorbid Conditions	Function (Oxford Knee Score)	1 year	2392	Prognostic	Heart Disease	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	-1.09, (-2.10-0.08), 0.03	Heart disease is associated with a lower postop OKS score.
Clement, N. D., 2013	Moderate Quality	Comorbid Conditions	Function (Oxford Knee Score)	1 year	2392	Prognostic	Hypertension	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	0.05, (-0.68-0.79), 0.89	NS
Clement, N. D., 2013	Moderate Quality	Comorbid Conditions	Function (Oxford Knee Score)	1 year	2392	Prognostic	Lung Disease	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	0.73, (-0.53-2.00), 0.26	NS
Clement, N. D., 2013	Moderate Quality	Comorbid Conditions	Function (Oxford Knee Score)	1 year	2392	Prognostic	Vascular Disease	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	-1.88, (-3.74-0.01), 0.05	NS
Clement, N. D., 2013	Moderate Quality	Comorbid Conditions	Function (Oxford Knee Score)	1 year	2392	Prognostic	Neurological Disease	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	-0.23, (-2.14-1.68), 0.81	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Clement, N. D., 2013	Moderate Quality	Comorbid Conditions	Function (Oxford Knee Score)	1 year	2392	Prognostic	Gastric Ulceration	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	1.35, (-0.71-3.42), 0.20	NS
Clement, N. D., 2013	Moderate Quality	Comorbid Conditions	Function (Oxford Knee Score)	1 year	2392	Prognostic	Kidney Disease	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	0.61, (-2.34-3.57), 0.68	NS
Clement, N. D., 2013	Moderate Quality	Comorbid Conditions	Function (Oxford Knee Score)	1 year	2392	Prognostic	Liver Disease	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	1.89, (-1.54-5.31), 0.28	NS
Clement, N. D., 2013	Moderate Quality	Comorbid Conditions	Function (Oxford Knee Score)	1 year	2392	Prognostic	Anaemia	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	-0.39, (-2.04-1.25), 0.64	NS
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	kidney disease	univariate analysis for stepwise regression	p-value	0.77	NS
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	liver disease	univariate analysis for stepwise regression	p-value	0.51	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	anaemia	univariate analysis for stepwise regression	p-value	0.23	NS
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	4 or more comorbidities	multivariate linear regression analysis to identify preop predictors (back pain, >=4 comorbidities, preop OKS, preop SF-12 MCS (mental component score), constant)	B(95% CI)	-3.78 (-6.11 to -1.45)	comorbidities are associated with worse OKS scores
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	>= 4 comorbid conditions	multivariate linear regression analysis to identify preop predictors (back pain, >=4 comorbidities, preop OKS, preop SF-12 MCS (mental component score), constant)	B (95% CI); p-value	-3.78 (-6.11, -1.45); <0.001	4 or more comorbidities was associated with less improvement in OKS
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	back pain	multivariate linear regression analysis to identify preop predictors (back pain, >=4 comorbidities, preop OKS, preop SF-12 MCS (mental component score), constant)	B (95% CI); p-value	-2.53 (-3.75, -1.30); <0.001	back pain is significantly associated with worse OKS score.
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	heart disease	univariate analysis for stepwise regression	p-value	0.05	heart disease is associated with worse postop OKS score.
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	hypertension	univariate analysis for stepwise regression	p-value	0.99	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	lung disease	univariate analysis for stepwise regression	p-value	0.78	NS
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	vascular disease	univariate analysis for stepwise regression	p-value	0.16	NS
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	neurological disease	univariate analysis for stepwise regression	p-value	0.56	NS
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	diabetes mellitus	univariate analysis for stepwise regression	p-value	0.47	NS
Clement, N. D., 2013	Low Quality	Comorbid Conditions	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	gastric ulceration	univariate analysis for stepwise regression	p-value	0.5	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Collados-Maestre, I., 2016	Moderate Quality	Comorbid Conditions	Function (Successful KSS-Function Score)	Pre-Op	144	Prognostic	Lower back pain versus no lower back pain	Multivariate Logistic Regression with LBP cases matched with controls on gender, age, BMI, preop knee function	Odds Ratio, CI, P-value	0.6, 0.2-0.9, 0.003	Lower back pain was significantly associated with an unsuccessful (≤ 70) KSS-function score.
Collados-Maestre, I., 2016	Moderate Quality	Comorbid Conditions	Function (Postop SF-12 Score)		144	Prognostic	continuous; Preop Oswestry Disability Index Score	Spearman Correlation Coefficient	Correlation Coefficient	-1.6	Preop ODI score was inversely correlated with postop SF-12 scores.
Dauty, M., 2009	Moderate Quality	Comorbid Conditions	Other (Duration of Inpatient Rehabilitation)	Discharge	224	Prognostic	Yes vs No	Univariate analysis for entry into multivariate regression	Coefficient, P-value	0.052, 0.44	NS
Jones, C. A., 2003	Moderate Quality	Comorbid Conditions	Function (WOMAC Function ("standardized" - scores adjusted and direction reversed))	6 months	276	Prognostic	continuous (CCI)	multiple linear regression adjusted for age, sex, preop WOMAC function, preop walking devices	standardized coefficient, (CI), p-value	-0.19, (-2.75, -0.49), 0.005	Comorbid Conditions is significantly associated with WOMAC function at 6 mo postop
Jones, C. A., 2012	Low Quality	Comorbid Conditions	Function (WOMAC function)	Post-Op	376	Prognostic (TKA)	Diabetes mellitus vs no	random effects model fitted for WOMAC function scores (time, time-square, BMI 30.0-34.9kg/m ² , BMI $\geq$ 35.0kg/m ² , DM, cardiac disease, female, age, DMxtime, genderxtime)	Coeff (95% CI); p-value	0.96 (-4.31, 6.22); 0.721	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Jones, C. A., 2012	Low Quality	Comorbid Conditions	Function (WOMAC function)	Post-Op	376	Prognostic (TKA)	Cardiac disease vs. no	random effects model fitted for WOMAC function scores (time, time-square, BMI 30.0-34.9kg/m ² , BMI>=35.0kg/m ² , DM, cardiac disease, female, age, DMxtime, genderxtime)	Coeff (95% CI); p-value	1.17 (-2.72, 0.591)	NS
Jones, C. A., 2012	Low Quality	Comorbid Conditions	Function (WOMAC function)	Post-Op	376	Prognostic (TKA)	Diabetes mellitus x time	random effects model fitted for WOMAC function scores (time, time-square, BMI 30.0-34.9kg/m ² , BMI>=35.0kg/m ² , DM, cardiac disease, female, age, DMxtime, genderxtime)	Coeff (95% CI); p-value	0.18 (-0.2, 0.39); 0.086	NS
Kauppila, A. M., 2011	Moderate Quality	Comorbid Conditions	Function (self-reported functional recovery (WOMAC))	Post-Op	75	Prognostic (primary unilateral TKA due to OAK)	presence of osteoporosis	linear regression (age, male gender, presence of osteoporosis, WOMAC preop pain (centered, Wp=60), preop function of opposite knee)	Unstandardized linear regression coefficient (SE); pvalue	-17.5 (7.71); 0.03	Presence of osteoporosis would have decreased mean improvement in the WOMAC function score by 17.5 mm
Kauppila, A. M., 2011	Moderate Quality	Comorbid Conditions	Function (probability of achieving age-standardized 15D (HRQOL) reference score 12mo postop)	Post-Op	75	Prognostic (primary unilateral TKA due to OAK)	pulmonary disease	multivariate logistic regression of achieving age-standardized 15D (HRQOL) score (age, preop 15D score, WOMAC pain at 12mo f/u, pulmonary disease)	OR (95% CI); pvalue	0.16 (0.03, 0.88); 0.04	Presence of pulmonary disease significantly decreased the possibility to achieve level of HRQOL of general pop

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Kauppila, A. M., 2011	Moderate Quality	Comorbid Conditions	Function (probability of achieving age-standardized 15D (HRQOL) reference score 12mo postop)	Post-Op	75	Prognostic (primary unilateral TKA due to OAK)	Presence of osteoporosis preop	multivariate logistic regression; unclear adjustment; Unclear data value and author significance reporting	OR (95% CI); pvalue	14.7 (1.1-106.1); 0.008	Presence of osteoporosis decreased likelihood of achieving reference value
Lizaur-Utrilla, A., 2014	Low Quality	Comorbid Conditions	Adverse Event (Clinical Failure)	Post-Op	414	Prognostic	Preop Charlson Score Medium vs Low	Logistic regression adjusted for age, BMI, sex, preop WOMAC function, preop SF-12 PCS, preop SF-12 MCS, charlson index, ASA score, preop KSS score, preop ROM, preop KSS function, Preop walking distance, Preop WOMAC pain	Adjusted OR, (CI), Adjusted P-value	1.03, (0.82-1.34), 0.458	NS
Lizaur-Utrilla, A., 2014	Low Quality	Comorbid Conditions	Adverse Event (Clinical Failure)	Post-Op	414	Prognostic	Preop Charlson Score High vs Low	Logistic regression adjusted for age, BMI, sex, preop WOMAC function, preop SF-12 PCS, preop SF-12 MCS, charlson index, ASA score, preop KSS score, preop ROM, preop KSS function, Preop walking distance, Preop WOMAC pain	Adjusted OR, (CI), Adjusted P-value	2.11, (1.94-2.35), 0.0027	Preop charlson score of high has higher odds of clinical failure compared to pts with a low score.
Lizaur-Utrilla, A., 2014	Moderate Quality	Comorbid Conditions	Adverse Event (Failure)	Pre-Op	342	Prognostic	continuous	Multivariate logistic regression with obese cases matched with non-obese controls for gender, age, OA, and preop KSS	P-value	0.412	NS
Maiorano, E., 2017	Low Quality	Comorbid Conditions	Function (Modified Barthel Index Change in Females)	Post-Op	268	Prognostic	Preop Charlson Index	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Maiorano, E., 2017	Low Quality	Comorbid Conditions	Adverse Event (Rate of Infection in Females)	Post-Op	268	Prognostic	Preop Charlson Index	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS
Maiorano, E., 2017	Low Quality	Comorbid Conditions	Function (Modified Barthel Index Change in Males)	Post-Op	85	Prognostic	Preop Charlson Index	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS
Maiorano, E., 2017	Low Quality	Comorbid Conditions	Adverse Event (Rate of infection in Males)	Post-Op	85	Prognostic	Preop Charlson Index	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS
Nunez, M., 2011	Low Quality	Comorbid Conditions	Function (WOMAC Function)	12 months	60	Prognostic	continuous	Multivariate linear regression adjusted for infrapatellar index, IOD, and number of complications after discharge.	Coefficient, (CI), p-value	5.4, (1.2-9.6), 0.0012	Significantly associated with a worse WOMAC function score at 12mos.
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Myocardial Infarction)	Post-Op	156	Prognostic	Preop Hypertension	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0,-,0.997	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Myocardial Infarction)	Post-Op	156	Prognostic	Preop MI/CAD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	67.6, (9.18-498.6), 0	Preop MI/CAD is significantly associated with a higher risk of postop MI.
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Myocardial Infarction)	Post-Op	156	Prognostic	Preop COPD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	2.8, (0.16-46.6), 0.48	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Pneumonia)	Post-Op	156	Prognostic	Preop Hypertension	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0,- ,0.998	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Pneumonia)	Post-Op	156	Prognostic	Preop MI/CAD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1.06, -, 1.0	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Pneumonia)	Post-Op	156	Prognostic	Preop COPD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0, -, 1.0	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Prosthetic Infection)	Post-Op	156	Prognostic	Preop Hypertension	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0, -, 0.998	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Prosthetic Infection)	Post-Op	156	Prognostic	Preop MI/CAD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	2.04, (0.14-29.5), 0.602	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Prosthetic Infection)	Post-Op	156	Prognostic	Preop COPD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0, -, 0.999	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Fat Embolism Syndrom)	Post-Op	156	Prognostic	Preop Hypertension	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0,- ,0.999	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Fat Embolism Syndrom)	Post-Op	156	Prognostic	Preop MI/CAD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.85,-,1	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Fat Embolism Syndrom)	Post-Op	156	Prognostic	Preop COPD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0,-,0.999	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (DVT)	Post-Op	156	Prognostic	Preop Hypertension	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	3.1, (0.63-15.1), 0.164	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (DVT)	Post-Op	156	Prognostic	Preop MI/CAD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	2.54, (0.66-9.81), 0.177	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (DVT)	Post-Op	156	Prognostic	Preop COPD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1, (0.11-9.57), 0.978	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Pulmonary Embolism)	Post-Op	156	Prognostic	Preop Hypertension	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1.6, (0.13-18.8), 0.727	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Pulmonary Embolism)	Post-Op	156	Prognostic	Preop MI/CAD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	8.89, (0.79-100.7), 0.078	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Pulmonary Embolism)	Post-Op	156	Prognostic	Preop COPD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0,- ,0.999	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Urinary Retention)	Post-Op	156	Prognostic	Preop Hypertension	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1.6, (0.37-6.67), 0.542	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Urinary Retention)	Post-Op	156	Prognostic	Preop MI/CAD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.56, (0.06-5.13), 0.605	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Urinary Retention)	Post-Op	156	Prognostic	Preop COPD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1.3, 0.1-, 0.847	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Superficial Infection)	Post-Op	156	Prognostic	Preop Hypertension	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1.9, (0.35-10.2), 0.46	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Superficial Infection)	Post-Op	156	Prognostic	Preop MI/CAD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.8, (0.08-8.12), 0.848	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Superficial Infection)	Post-Op	156	Prognostic	Preop COPD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	6.1, (0.96-38.5), 0.055	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (ICU Admission)	Post-Op	156	Prognostic	Preop Hypertension	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.1, (0.01,1.16), 0.066	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (ICU Admission)	Post-Op	156	Prognostic	Preop MI/CAD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	88.8, (7.56-1042.4), 0	Preop MI/CAD is significantly associated with a higher risk of postop ICU admission
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (ICU Admission)	Post-Op	156	Prognostic	Preop COPD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0, -, 0.998	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Readmission <30 days)	Post-Op	156	Prognostic	Preop Hypertension	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0, -, 0.998	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Readmission <30 days)	Post-Op	156	Prognostic	Preop MI/CAD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	5.73, (0.18-181.4), 0.322	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Readmission <30 days)	Post-Op	156	Prognostic	Preop COPD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0, -, 0.999	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Revision Surgery)	Post-Op	156	Prognostic	Preop Hypertension	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.5, (0.08-2.79), 0.407	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Revision Surgery)	Post-Op	156	Prognostic	Preop MI/CAD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	4.21, (0.34-52.1), 0.263	NS
Peskun, C., 2012	Low Quality	Comorbid Conditions	Adverse Event (Revision Surgery)	Post-Op	156	Prognostic	Preop COPD	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0, - , 0.999	NS
Robbins, S. M., 2014	Low Quality	Comorbid Conditions	Function (Timed Up and Go Test)	3 days	72	Prognostic	continuous	Step wise Multivariate linear regression adjusted for age and comorbidity	Standardized coefficient, p-value	0.28, 0.02	Comorbidities are associated with higher timed up and go test
Robbins, S. M., 2014	Low Quality	Comorbid Conditions	Function (Timed Up and Go Test)	3 days	72	Prognostic	continuous	Pearson Correlation	Correlation Coefficient, p-value	0.29, <.05	Comorbidity is significant correlated with postop TUG score
Robbins, S. M., 2014	Low Quality	Comorbid Conditions	Function (WOMAC Function)	3 days	72	Prognostic	continuous	Step wise Multivariate linear regression adjusted for age, gender, BMI, pain severity, comorbidity, pain catastrophizing, strength			NS
Robbins, S. M., 2014	Low Quality	Comorbid Conditions	Function (WOMAC Function)	3 days	72	Prognostic		Pearson Correlation	Correlation Coefficient	0.09	NS
Song, K., 2016	Low Quality	Comorbid Conditions	Adverse Event (Pulmonary Complications)	Post-Op	111	Prognostic	Hypertension vs no-hypertension	Univariate analysis Chi-squared for entering into multivariate logistic regression	P-value	0.716	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Song, K., 2016	Low Quality	Comorbid Conditions	Adverse Event (Pulmonary Complications)	Post-Op	111	Prognostic	Heart Disease vs. no heart disease	Univariate analysis Chi-squared for entering into multivariate logistic regression	P-value	0.653	NS
Song, K., 2016	Low Quality	Comorbid Conditions	Adverse Event (Pulmonary Complications)	Post-Op	111	Prognostic	Anemia	Univariate analysis Chi-squared for entering into multivariate logistic regression	P-value	0.118	NS
Song, K., 2016	Low Quality	Comorbid Conditions	Adverse Event (Pulmonary Complications)	Post-Op	111	Prognostic	Stroke vs no stroke	Univariate analysis Chi-squared for entering into multivariate logistic regression	P-value	0.348	NS
Sullivan, M., 2009	High Quality	Comorbid Conditions	Function (Postop WOMAC Function)	Post-Op	75	Prognostic	Back Pain	Hierarchical regression analysis adjusted for age, sex, and preop WOMAC function	Beta coefficient, p-value	.23, <.05	Preop back pain is significantly associated with higher postop WOMAC function scores.
Sullivan, M., 2009	High Quality	Comorbid Conditions	Function (Postop WOMAC Function)	Post-Op	75	Prognostic	Preop Comorbidities	Pearson Correlation	Correlation Coefficient	0.05	NS
Tay, K. S., 2017	High Quality	Comorbid Conditions	Adverse Event (Total Complication Rate)	2 years	418	Prognostic	Continuous; Charlson Comorbidity Index	Binomial logistic regression; pts and controls matched on gender, BMI, diagnosis, surgeon, surgery side, history of TKA, year of surgery	Odds Ratio, CI, P-value	1.61, (1.14-2.28), 0.007	Higher CCI score is associated with higher total complication rate.

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Wang, X., 2005	Low Quality	Comorbid Conditions	FIM - Motor subscale (hypertension vs no hypertension)	Discharge	49	PICO 8 Prognostic	No Hypertension vs. Hypertension	none	p value	>.05	NS
Wang, X., 2005	Low Quality	Comorbid Conditions	FIM - Motor subscale(heart disease vs no heart disease)	Discharge	49	PICO 8 Prognostic	No Heart Disease vs. Heart Disease	none	p value	>.05	NS

Table 118: Depression

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Clement, N. D., 2013	Moderate Quality	Depression	Function (Oxford Knee Score)	1 year	2392	Prognostic		Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	-4.17, (-5.42-2.92), <0.001	Depression is associated with lower postop OKS score.
Clement, N. D., 2013	Moderate Quality	Depression	Function (Oxford Knee Score)	1 year	2392	Prognostic	SF-12 MCS	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	0.19, (0.16-0.22), <0.001	Higher preop SF-12 MCS score is associated with higher postop OKS.
Clement, N. D., 2013	Low Quality	Depression	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	depression	univariate analysis for stepwise regression	p-value	0.003	depression is correlated with worse OKS scores
Hirschmann, M. T., 2013	Low Quality	Depression	Function (WOMAC Stiffness)	Post-Op	104	Prognostic	Becks Depression Inventory	Spearman Correlations	Correlation Coefficient, p-value	0.34, <0.01	Preop Becks Depression inventory is significantly correlated with postop WOMAC stiffness
Hirschmann, M. T., 2013	Low Quality	Depression	Function (WOMAC Stiffness)	Post-Op	104	Prognostic	SCL-90 Depression	Spearman Correlations	Correlation coefficient, p-value	0.34, <0.01	Preop SCL-90 depression inventory is significantly correlated with postop WOMAC stiffness

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Hirschmann, M. T., 2013	Low Quality	Depression	Function (WOMAC Function)	Post-Op	104	Prognostic	Becks Depression Inventory	Spearman Correlation	Correlation Coefficient, p-value	0.37, <0.001	Preop Becks depression inventory is significantly correlated with postop WOMAC function
Hirschmann, M. T., 2013	Low Quality	Depression	Function (WOMAC Function)	Post-Op	104	Prognostic	SCL-90 Depression	Spearman Correlation	Correlation Coefficient, p-value	0.41, <0.001	Preop SCL-90 inventory is significantly correlated with postop WOMAC function
Hirschmann, M. T., 2013	Low Quality	Depression	Function (KSS - Knee Score)	Post-Op	104	Prognostic	Becks Depression Inventory	Spearman Correlation	Correlation Coefficient	-0.09	NS
Hirschmann, M. T., 2013	Low Quality	Depression	Function (KSS - Knee Score)	Post-Op	104	Prognostic	SCL-90 Depression	Spearman Correlation	Correlation Coefficient	-0.16	NS
Hirschmann, M. T., 2013	Low Quality	Depression	Function (KSS - Function)	Post-Op	104	Prognostic	Becks Depression Inventory	Spearman Correlation	Correlation Coefficient	0.02	NS
Hirschmann, M. T., 2013	Low Quality	Depression	Function (KSS - Function)	Post-Op	104	Prognostic	SCL-90 Depression	Spearman Correlation	Correlation Coefficient	-0.07	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Hirschmann, M. T., 2013	Low Quality	Depression	Function (Knee Society Score)	Post-Op	104	Prognostic	Becks Depression Inventory	Spearman Correlation	Correlation Coefficient	-0.04	NS
Hirschmann, M. T., 2013	Low Quality	Depression	Function (Knee Society Score)	Post-Op	104	Prognostic	SCL-90 depression	Spearman Correlation	Correlation Coefficient	-0.15	NS
Langlois, J., 2015	Low Quality	Depression	Function (Active Knee Flexion)	Post-Op	460	Prognostic		Univariate mixed model analysis	Coefficient, SE, p-value	-4.4, 1.2, <0.0001	Preop depression is significantly associated with lower postop active knee flexion.
Langlois, J., 2015	Low Quality	Depression	Function (Active Knee Flexion)	Post-Op	460	Prognostic	Depression/Anxiety	Multivariate regression adjusted for height, BMI, no previous surgery, depression, preop active flexion, preop flexion contracture, lateral residual subluxation, AT/AP	Adjusted coefficient, SE, p-value	-4.4, 1.5, 0.01	Preop depression is significantly associated with lower postop active knee flexion.
Lizaur-Utrilla, A., 2014	Low Quality	Depression	Adverse Event (Clinical Failure)	Post-Op	414	Prognostic	Preop SF-12 MCS	Univariate analysis for step wise logistic regression	P-value	0.179	NS
Maiorano, E., 2017	Low Quality	Depression	Function (Modified Barthel Index Change in Females)	Post-Op	268	Prognostic	Preop Depression	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Maiorano, E., 2017	Low Quality	Depression	Adverse Event (Rate of Infection in Females)	Post-Op	268	Prognostic	Preop Depression	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS
Maiorano, E., 2017	Low Quality	Depression	Function (Modified Barthel Index Change in Males)	Post-Op	85	Prognostic	Preop Depression	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS
Maiorano, E., 2017	Low Quality	Depression	Adverse Event (Rate of infection in Males)	Post-Op	85	Prognostic	Preop Depression	Longitudinal regression model adjusted for age, BMI, preop comorbidities, preop depression, previous TJA, preop HB level, MBI at admission			NS
Sullivan, M., 2009	High Quality	Depression	Function (Postop WOMAC Function)	Post-Op	75	Prognostic	PHQ-9	Hierarchical regression analysis adjusted for age, sex, preop WOMAC function, preop PCS, preop TSK,	Beta coefficient	0.04	NS
Sullivan, M., 2009	High Quality	Depression	Function (Postop WOMAC Function)	Post-Op	75	Prognostic	Preop PHQ-9	Pearson Correlation	Correlation Coefficient	0.24	NS
Torres-Claramunt, R., 2017	Low Quality	Depression	Change in WOMAC Functional Score	1 years	803	PICO 8 Prognostic	Group 2 No depression vs. Group 1 Depression	none	p value		Depression is significantly associated with higher WOMAC function score at 1yr postop

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Torres-Claramunt, R., 2017	Low Quality	Depression	KSS Function	1 years	803	PICO 8 Prognostic	Group 2 No depression vs. Group 1 Depression	none	p value		Depression is significantly associated with a lower KSS Function score at 1 yr postop
Torres-Claramunt, R., 2017	Low Quality	Depression	SF-36 Physical Component	1 years	803	PICO 8 Prognostic	Group 2 No depression vs. Group 1 Depression	none	p value	>.05	NS

Table 119: Diabetes

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Clement, N. D., 2013	Moderate Quality	Diabetes	Function (Oxford Knee Score)	1 year	2392	Prognostic		Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	0.10, (-1.06-1.27), 0.86	NS
Peskun, C., 2012	Low Quality	Diabetes	Adverse Event (Myocardial Infarction)	Post-Op	156	Prognostic	Preop Type 2 Diabetes	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.9, (0.14-5.81), 0.902	NS
Peskun, C., 2012	Low Quality	Diabetes	Adverse Event (Pneumonia)	Post-Op	156	Prognostic	Preop Type 2 Diabetes	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.4, -, 1.0	NS
Peskun, C., 2012	Low Quality	Diabetes	Adverse Event (Prosthetic Infection)	Post-Op	156	Prognostic	Preop Type 2 Diabetes	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0, -, 0.999	NS
Peskun, C., 2012	Low Quality	Diabetes	Adverse Event (Fat Embolism Syndrom)	Post-Op	156	Prognostic	Preop Type 2 Diabetes	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0,- ,0.999	NS
Peskun, C., 2012	Low Quality	Diabetes	Adverse Event (DVT)	Post-Op	156	Prognostic	Preop Type 2 Diabetes	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.8, (0.2-3.3), 0.78	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Peskun, C., 2012	Low Quality	Diabetes	Adverse Event (Pulmonary Embolism)	Post-Op	156	Prognostic	Preop Type 2 Diabetes	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0,- ,0.998	NS
Peskun, C., 2012	Low Quality	Diabetes	Adverse Event (Urinary Retention)	Post-Op	156	Prognostic	Preop Type 2 Diabetes	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.4, (0.04-3.25), 0.377	NS
Peskun, C., 2012	Low Quality	Diabetes	Adverse Event (Superficial Infection)	Post-Op	156	Prognostic	Preop Type 2 Diabetes	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.4, (0.04-3.05), 0.39	NS
Peskun, C., 2012	Low Quality	Diabetes	Adverse Event (ICU Admission)	Post-Op	156	Prognostic	Preop Type 2 Diabetes	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.7, (0.09-5.79), 0.754	NS
Peskun, C., 2012	Low Quality	Diabetes	Adverse Event (Readmission <30 days)	Post-Op	156	Prognostic	Preop Type 2 Diabetes	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	2.2, (0.07-62.6), 0.654	NS
Peskun, C., 2012	Low Quality	Diabetes	Adverse Event (Revision Surgery)	Post-Op	156	Prognostic	Preop Type 2 Diabetes	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0, - , 0.998	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Robertson, F., 2012	Low Quality	Diabetes	Fixed Flexion Deformity (FFD)	1 years	734	PICO 8 Prognostic	Group 2 No Diabetes Mellitus vs. Group 1 Diabetes Mellitus	Matched for age, sex, BMI, preop function	p value	>.05	NS
Robertson, F., 2012	Low Quality	Diabetes	Fixed Flexion Deformity (FFD)	5 years	734	PICO 8 Prognostic	Group 2 No Diabetes Mellitus vs. Group 1 Diabetes Mellitus	Matched for age, sex, BMI, preop function	p value		Diabetes group had significantly higher FFD score at 5 years postop (p=0.02)
Robertson, F., 2012	Low Quality	Diabetes	Fixed Flexion Deformity (FFD)	10 years	734	PICO 8 Prognostic	Group 2 No Diabetes Mellitus vs. Group 1 Diabetes Mellitus	Matched for age, sex, BMI, preop function	p value		Diabetes group had significantly higher FFD score at 10 years postop (p=0.02)

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Robertson, F., 2012	Low Quality	Diabetes	Knee Society Score	1 years	734	PICO 8 Prognostic	Group 2 No Diabetes Mellitus vs. Group 1 Diabetes Mellitus	Matched for age, sex, BMI, preop function	p value		Diabetes group had significantly lower KSS score at 1 year postop (p=0.03)
Robertson, F., 2012	Low Quality	Diabetes	Knee Society Score	5 years	734	PICO 8 Prognostic	Group 2 No Diabetes Mellitus vs. Group 1 Diabetes Mellitus	Matched for age, sex, BMI, preop function	p value	>.05	NS
Robertson, F., 2012	Low Quality	Diabetes	Knee Society Score	10 years	734	PICO 8 Prognostic	Group 2 No Diabetes Mellitus vs. Group 1 Diabetes Mellitus	Matched for age, sex, BMI, preop function	p value		Diabetes group had significantly lower KSS score at 10 year postop (p=0.01)

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Robertson, F., 2012	Low Quality	Diabetes	Maximum Flexion	1 years	734	PICO 8 Prognostic	Group 2 No Diabetes Mellitus vs. Group 1 Diabetes Mellitus	Matched for age, sex, BMI, preop function	p value		Diabetes group had significantly lower Maximum Flexion at 1 year postop (p<0.001)
Robertson, F., 2012	Low Quality	Diabetes	Maximum Flexion	5 years	734	PICO 8 Prognostic	Group 2 No Diabetes Mellitus vs. Group 1 Diabetes Mellitus	Matched for age, sex, BMI, preop function	p value		Diabetes group had significantly lower Maximum Flexion at 5 year postop (p=0.004)
Robertson, F., 2012	Low Quality	Diabetes	Maximum Flexion	10 years	734	PICO 8 Prognostic	Group 2 No Diabetes Mellitus vs. Group 1 Diabetes Mellitus	Matched for age, sex, BMI, preop function	p value		Diabetes group had significantly lower Maximum Flexion at 10 year postop (p=0.01)

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Robertson, F., 2012	Low Quality	Diabetes	Total ROM	1 years	734	PICO 8 Prognostic	Group 2 No Diabetes Mellitus vs. Group 1 Diabetes Mellitus	Matched for age, sex, BMI, preop function	p value		Diabetes group had significantly lower Total ROM at 1 year postop (p<0.001)
Robertson, F., 2012	Low Quality	Diabetes	Total ROM	5 years	734	PICO 8 Prognostic	Group 2 No Diabetes Mellitus vs. Group 1 Diabetes Mellitus	Matched for age, sex, BMI, preop function	p value		Diabetes group had significantly lower Total ROM at 5 year postop (p=0.001)
Robertson, F., 2012	Low Quality	Diabetes	Total ROM	10 years	734	PICO 8 Prognostic	Group 2 No Diabetes Mellitus vs. Group 1 Diabetes Mellitus	Matched for age, sex, BMI, preop function	p value		Diabetes group had significantly lower Total ROM at 10 years postop (p=0.01)

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Song, K., 2016	Low Quality	Diabetes	Adverse Event (Pulmonary Complications)	Post-Op	111	Prognostic	Diabetes vs no-diabetes	Univariate analysis Chi-squared for entering into multivariate logistic regression	P-value	0.411	NS
Wada, O., 2016	Low Quality	Diabetes	Knee Extension	6 months	40	PICO 8 Prognostic	G2 - Control vs. G1 - Diabetes	none	p value	>.05	NS
Wada, O., 2016	Low Quality	Diabetes	Knee Extension	12 months	40	PICO 8 Prognostic	G2 - Control vs. G1 - Diabetes	none	p value	>.05	NS
Wada, O., 2016	Low Quality	Diabetes	Knee Flexion	6 months	40	PICO 8 Prognostic	G2 - Control vs. G1 - Diabetes	none	p value	>.05	NS
Wada, O., 2016	Low Quality	Diabetes	Knee Flexion	12 months	40	PICO 8 Prognostic	G2 - Control vs. G1 - Diabetes	none	p value	<.05	Control group had a significantly higher ROM
Wada, O., 2016	Low Quality	Diabetes	Quadriceps Strength	6 months	40	PICO 8 Prognostic	G2 - Control vs. G1 - Diabetes	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Wada, O., 2016	Low Quality	Diabetes	Quadriceps Strength	12 months	40	PICO 8 Prognostic	G2 - Control vs. G1 - Diabetes	none	p value	>.05	NS
Wada, O., 2016	Low Quality	Diabetes	The New KSS - Functional Activities	6 months	40	PICO 8 Prognostic	G2 - Control vs. G1 - Diabetes	none	p value	<.05	Control group had a significantly higher score
Wada, O., 2016	Low Quality	Diabetes	The New KSS - Functional Activities	12 months	40	PICO 8 Prognostic	G2 - Control vs. G1 - Diabetes	none	p value	<.05	Control group had a significantly higher score
Wada, O., 2016	Low Quality	Diabetes	The New KSS - Symptoms	6 months	40	PICO 8 Prognostic	G2 - Control vs. G1 - Diabetes	none	p value	>.05	NS
Wada, O., 2016	Low Quality	Diabetes	The New KSS - Symptoms	12 months	40	PICO 8 Prognostic	G2 - Control vs. G1 - Diabetes	none	p value	>.05	NS
Wada, O., 2016	Low Quality	Diabetes	The New KSS Score	6 months	40	PICO 8 Prognostic	G2 - Control vs. G1 - Diabetes	none	p value	<.05	Control group had a significantly higher score

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Wada, O., 2016	Low Quality	Diabetes	The New KSS Score	12 months	40	PICO 8 Prognostic	G2 - Control vs. G1 - Diabetes	none	p value	<.05	Control group had a significantly higher score
Wang, X., 2005	Low Quality	Diabetes	FIM - Motor subscale	Discharge	49	PICO 8 Prognostic	No Diabetes vs. Diabetes	none	p value	>.05	NS

Table 120: Length of Hospital Stay

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dauty, M., 2009	Moderate Quality	Length of Hospital Stay	Other (Duration of Inpatient Rehabilitation)	Discharge	224	Prognostic	Length of stay in surgical ward; continuous	Univariate analysis for entry into multivariate regression	Coefficient, P-value	0.060, 0.34	NS
Liao, C. D., 2016	Moderate Quality	Length of Hospital Stay	Function (Knee Flexion at discharge)	Discharge	354	Prognostic (All patients received CPM and inpatient rehab exercises)	days, continuous	model contained CPM initial angle, CPM progress, CPM ultimate angle, Length of stay	Stepwise linear regression, beta value, +/- standard error, p-value	-0.725 +/- 0.267, p<0.01	longer length of stay was associated with worse flexion
Liao, C. D., 2016	Moderate Quality	Length of Hospital Stay	Function (Knee Flexion at 6 months)	6 months	354	Prognostic (All patients received CPM and inpatient rehab exercises)	days, continuous	model contained CPM initial angle, CPM progress, CPM ultimate angle, Length of stay, Peak motion pain, BMI, Preop flexion, preop WOMAC	Stepwise linear regression, beta value, +/- standard error, p-value	-0.696 +/- 0.224, p<0.01	longer length of stay was associated with worse flexion

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lizaur, A., 1997	Moderate Quality	Length of Hospital Stay	Function (Final Flexion)	Post-Op	74	Prognostic	continuous	Pearson or Spearman Correlation	p-value	0.33	NS
Lizaur, A., 1997	Moderate Quality	Length of Hospital Stay	Function (Post op Flexion contracture)	Post-Op	74	Prognostic	continuous	Pearson or Spearman Correlation	p-value	0.35	NS
Wang, X., 2005	Low Quality	Length of Hospital Stay	Function (FIM - Motor subscale)	Discharge	49	Prognostic (Selected from an inpatient orthopaedic ward)		Spearman Correlation	Correlation Coefficient, P-value	-0.39, <0.01	Length of stay is negatively correlated with FIM score

Table 121: Patient Support

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dauty, M., 2009	Moderate Quality	Patient Support	Other (Duration of Inpatient Rehabilitation)	Discharge	244	Prognostic	Home help vs no home help	Multivariate linear regression adjusted for gender, home help, and previous joint replacement	Beta Coefficient, SE, P-value	-1.89, 1.79, 0.29	NS
Papakostidou, I., 2012	Low Quality	Patient Support	Function (KSS)	12 months	204	Prognostic	Social Support vs No Social Support	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop KSS			NS
Papakostidou, I., 2012	Low Quality	Patient Support	Function (WOMAC Function)	12 months	204	Prognostic	Social Support vs No Social Support	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	-2.24, (-5.55, 1.06), 0.1	NS
Papakostidou, I., 2012	Low Quality	Patient Support	Function (WOMAC Stiffness)	12 months	204	Prognostic	Social support vs no support	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	-0.17, (-0.59-0.25), 0.4	NS
Sharma, L., 1996	Moderate Quality	Patient Support	Function (SF-36 Physical Function 3mo postop)	3 months	47	Prognostic	Continuous (1-4)	Multiple regression adjusted for gender, education, and age	partial, significance	-0.12, 0.466	NS

Table 122: Preop Function

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Aderinto, J., 2005	Low Quality	Preop Function	Function (postop fixed flexion deformity (FFD) > 10 degrees)	1 week	344	Prognostic (crepe compression bandage applied)	preop fixed flexion deformity compared to postop FFD > 10 degrees at 1 week postop	binary logistic regression (age, gender, diagnosis, preop FFD, max active preop flexion compared to postop FFD>10)	p-value	0.006	pre-op FFD associated with post op ffd
Aderinto, J., 2005	Low Quality	Preop Function	Function (postop fixed flexion deformity (FFD) > 10 degrees)	6 months	344	Prognostic (crepe compression bandage applied)	preop fixed flexion deformity compared to postop FFD > 10 degrees at 6 months postop	binary logistic regression (age, gender, diagnosis, preop FFD, max active preop flexion compared to postop FFD>10)	p-value	0.003	pre-op FFD associated with post op ffd

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Bade, M. J., 2014	Low Quality	Preop Function	Function (Knee Flexion)	2 days	64	Prognostic	Knee flexion	Linear Regression	Unadjusted Coefficient, (CI), P-value	0.03, (-0.20-0.26), 0.80	NS
Bade, M. J., 2014	Low Quality	Preop Function	Function (Knee Flexion)	6 months	64	Prognostic	Knee flexion	Linear Regression	Unadjusted Coefficient, (CI), P-value	0.44, (0.31-0.58), <0.001	Higher preop knee flexion is associated with higher knee flexion at 6 mos.
Bade, M. J., 2014	Low Quality	Preop Function	Function (6 min walk test)	2 days	64	Prognostic	Timed up and go	Linear regression	Unadjusted Coefficient, (CI), P-value	-61, (-107 - -14), 0.01	Higher timed up and go test is associated with a lower postop 6 minute walk test score.
Bade, M. J., 2014	Low Quality	Preop Function	Function (6 min walk test)	6 months	64	Prognostic	Timed up and go	Linear regression	Unadjusted Coefficient, (CI), P-value	-211, (-255- -167), <0.001	Higher timed up and go test is associated with a lower postop 6 minute walk test score at 6 months.
Bade, M. J., 2014	Low Quality	Preop Function	Function (6 min walk test)	6 months	64	Prognostic	Preop TUG time (log sec)	Linear regression adjusted for age, sex, acute TUG time, preop TUG time	Adjusted Coefficient, SE, P-value	-202.3, 25.5, <0.001	Higher preop TUG time is associated with lower 6 minute walk score 6 mos postop

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Bauman, R. D., 2012	Low Quality	Preop Function	knee flexion (degrees)	Post-Op	.	PICO 8 Prognostic	g2 preop flexion > 120 degrees vs. g1 preop flexion < 120 degrees	gap-balancing surgical technique; posterior cruciate-substituting rotating-platform HF-TKA, cemented prosthetic components, resurfaced patella	mean (range) ; p-value as significance of difference b/w groups	131.3 (95.0,150.0); <0.001	Preop flexion >120 degrees is significantly associated with higher postop knee flexion
Bauman, R. D., 2012	Low Quality	Preop Function	postop KSS	Post-Op	.	PICO 8 Prognostic	g2 preop flexion > 120 degrees vs. g1 preop flexion < 120 degrees	gap-balancing surgical technique; posterior cruciate-substituting rotating-platform HF-TKA, cemented prosthetic components, resurfaced patella	mean (range) ; p-value as significance of difference b/w groups	94.1 (59.0,100.0); 0.57	NS
Bauman, R. D., 2012	Low Quality	Preop Function	postop KSS function	Post-Op	.	PICO 8 Prognostic	g2 preop flexion > 120 degrees vs. g1 preop flexion < 120 degrees	gap-balancing surgical technique; posterior cruciate-substituting rotating-platform HF-TKA, cemented prosthetic components, resurfaced patella	mean (range) ; p-value as significance of difference b/w groups	89.5 (50.0,100.0); 0.32	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Bin, S. I., 2007	High Quality	Preop Function	Function (ROM)	Post-Op	90	Prognostic (Received LPS-high flexion implants)	Flexion Contracture	Multiple logistic regression analysis	P-value	>0.05	NS
Brandes, M., 2011	Low Quality	Preop Function	Function (KSS)	1 year	53	Prognostic	preop KSS (continuous)	correlation			NS
Brandes, M., 2011	Low Quality	Preop Function	Function (SF-36)	1 year	53	Prognostic	continuous	correlation	r, pvalue	0.4, 0.013	Higher preop SF-36 is significantly correlated with higher 1 year postop SF-36
Brandes, M., 2011	Low Quality	Preop Function	Function (% Time Spent on Locomotion)	1 year	53	Prognostic	continuous	correlation	r, pvalue	0.5, 0.002	Higher preop % time on locomotion is significantly correlated with higher % postop time on locomotion
Brandes, M., 2011	Low Quality	Preop Function	Function (# Gait Cycles)	1 year	53	Prognostic	continuous	correlation	r, pvalue	0.5, 0.001	Higher preop # gait cycles is associated with higher gait cycles 1 yr postop
Chatterji, U., 2005	Low Quality	Preop Function	Function (Oxford Knee Score)	Post-Op	144	Prognostic (cemented, uncemented, and hybrid prostheses used)	Derived Sport Score Before Surgery	Pearson Correlation	Correlation Coefficient, p-value	-0.46, 0.59	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Chatterji, U., 2005	Low Quality	Preop Function	Function (Performance of Sporting Activities)	Post-Op	144	Prognostic (cemented, uncemented, and hybrid prostheses used)	Preop sport performance	Pearson Correlation	Correlation Coefficient, P-value	0.482, <0.001	Those who did more sport preop tended to do more postop.
Clement, N. D., 2013	Moderate Quality	Preop Function	Function (Oxford Knee Score)	1 year	2392	Prognostic	OKS	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	0.45, (0.39-0.51), <0.001	Higher preop OKS is associated with higher postop OKS
Clement, N. D., 2013	Moderate Quality	Preop Function	Function (Oxford Knee Score)	1 year	2392	Prognostic	SF-12 PCS	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	0.02, (-0.04-0.08), 0.54	NS
Clement, N. D., 2013	Low Quality	Preop Function	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	preop OKS (Oxford Knee Score)	multivariate linear regression analysis to identify preop predictors (back pain, >=4 comorbidities, preop OKS, preop SF-12 MCS (mental component score), constant)	B (95% CI); p-value	0.58 (0.50, 0.67); <0.001	a better preop oks score was associated with less improvement in OKS
Clement, N. D., 2013	Low Quality	Preop Function	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	preop SF-12 MCS (short-form 12 mental component score)	multivariate linear regression analysis to identify preop predictors (back pain, >=4 comorbidities, preop OKS, preop SF-12 MCS (mental component score), constant)	B (95% CI); p-value	0.16 (0.11, 0.22); <0.001	better sf-12 preop mental component scores were associated with better post op oks scores

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Dauty, M., 2009	Moderate Quality	Preop Function	Other (Duration of Inpatient Rehabilitation)	Discharge	224	Prognostic	Continuous; walking distance preop	Univariate analysis for entry into multivariate regression	Coefficient, P-value	-0.097, 0.61	NS
Dauty, M., 2009	Moderate Quality	Preop Function	Other (Duration of Inpatient Rehabilitation)	Discharge	224	Prognostic	Gait assistance prior to surgery; yes vs no	Univariate analysis for entry into multivariate regression	Coefficient, P-value	-0.078, 0.38	NS
Dauty, M., 2009	Moderate Quality	Preop Function	Other (Duration of Inpatient Rehabilitation)	Discharge	224	Prognostic	Preop IKS Function score; continuous	Univariate analysis for entry into multivariate regression	Coefficient, P-value	0.10, 0.87	NS
Dauty, M., 2009	Moderate Quality	Preop Function	Other (Duration of Inpatient Rehabilitation)	Discharge	224	Prognostic	Preop Lesquesne Index; >12 vs 12	Univariate analysis for entry into multivariate regression	Coefficient, P-value	0.01, 0.77	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Gatha, N. M., 2004	High Quality	Preop Function	Function (postop ROM)	Post-Op	135	Prognostic (TKA, cemented NexGen Legacy Posterior-Stabilized Prosthesis)	preop KSS, continuous	least squares adjustment (preop ROM, pre/post-resurfacing patellar thickness, change in patella thickness pre to post resurfacing, pre/post Insall-Salvati ratios, pre/post Blackburne-Peel ratios, preop alignment (varus, valgus, neutral), age, sex, preop extension, preop flexion, preop KSS)	coeff (SE); t-statistic	0.26 (.07); 2.01	NS
Gatha, N. M., 2004	High Quality	Preop Function	Function (postop KSS)	Post-Op	135	Prognostic (TKA, cemented NexGen Legacy Posterior-Stabilized Prosthesis)	preop KSS	least squares adjustment (preop ROM, preop KSS, preop insall-salvati ratio, preop blackburne-peel ratio, postop insall-salvati ratio, postop blackburne-peel ratio, preresurfacing patellar thickness)	coeff (SE); t-statistic	-0.01 (0.04); 0.38	NS
Hiyama, Y., 2017	Low Quality	Preop Function	Function (Life Space Assessment Score)	6 months	59	Prognostic	Modified gait efficacy scale	Multiple linear regression adjusted for age, preop mGES score, preop quadriceps strength, preop TUG score, and preop pain score	Adjusted Beta coefficient, (CI), p-value	0.56, (0.30-0.88), <0.001	Preop modified gait efficacy scale is significantly associated with postop life space assessment
Hiyama, Y., 2017	Low Quality	Preop Function	Function (Life Space Assessment Score)	6 months	59	Prognostic	Timed Up and Go test	Multiple linear regression adjusted for age, preop mGES score, preop quadriceps strength, preop TUG score, and preop pain score	Adjusted Beta coefficient, (CI), p-value	-0.39, (-7.68-1.37), 0.007	Preop timed up and go test is significantly associated with lower postop life space assessment

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Hiyama, Y., 2017	Low Quality	Preop Function	Function (Life Space Assessment Score)	6 months	59	Prognostic	Quadriceps Strength	Univariate analysis for forward-backward stepwise entry			NS
Jones, C. A., 2003	Moderate Quality	Preop Function	Function (WOMAC Function ("standardized" - scores adjusted and direction reversed))	6 months	276	Prognostic	continuous	multiple linear regression adjusted for age, sex, comorbid conditions, preop walking devices	standardized coefficient, (CI), pvalue	0.28, (0.16,0.43), <0.001	Preop WOMAC function is significantly associated with WOMAC function at 6 mo postop
Jones, C. A., 2003	Moderate Quality	Preop Function	Function (SF-36 Physical Function)	6 months	276	Prognostic	continuous	multiple linear regression adjusted for age, sex, preop walking distance, preop walking devices	standardized coefficient, (CI), p-value	0.27, (0.21,0.58), <0.001	Preop WOMAC function is significantly associated with 6mo postop WOMAC function
Jones, C. A., 2003	Moderate Quality	Preop Function	Function (SF-36 Physical Function)	5 months	276	Prognostic	continuous	multiple linear regression adjusted for age, sex, preop WOMAC function, preop walking devices	standardized coefficient, (CI), p-value	0.21, (2.02, 8.57), 0.002	Preop walking distance is significantly associated with 6mo postop WOMAC function

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Kauppila, A. M., 2011	Moderate Quality	Preop Function	Function (probability of achieving age-standardized 15D (HRQOL) reference score 12mo postop)	Pre-Op	75	Prognostic (primary unilateral TKA due to OAK)	below population reference value for preop 15D score (HRQOL) vs. 1>= level of population reference value	multivariate logistic regression of achieving age-standardized 15D (HRQOL) score (age, preop 15D score, WOMAC pain at 12mo f/u, pulmonary disease)	OR (95% CI); pvalue	7.66 (1.47,39.78); 0.02	pre-op score below ref value sig decreased the possibility to achieve level of HRQOL of general pop
Langlois, J., 2015	Low Quality	Preop Function	Function (Active Knee Flexion)	Post-Op	460	Prognostic	Charney Score >1	Univariate mixed model analysis	Coefficient, SE, p-value	-0.9, 0.8	NS
Langlois, J., 2015	Low Quality	Preop Function	Function (Active Knee Flexion)	Post-Op	460	Prognostic	Active Flexion	Univariate mixed model analysis	Coefficient, SE, p-value	0.2, 0.03, <0.0001	Preop Active flexion is significantly associated with higher postop active flexion

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Langlois, J., 2015	Low Quality	Preop Function	Function (Active Knee Flexion)	Post-Op	460	Prognostic	Flexion Contracture > or equal to 5 degrees	Univariate mixed model analysis	Coefficient, SE, p-value	-6.7, 3.1, 0.05	Preop flexion contracture is significantly associated with lower postop active knee flexion
Langlois, J., 2015	Low Quality	Preop Function	Function (Active Knee Flexion)	Post-Op	460	Prognostic	Flexion contracture > or equal to 5 degree	Multivariate regression adjusted for height, BMI, no previous surgery, depression, preop active flexion, preop flexion contracture, lateral residual subluxation, AT/AP	Adjusted coefficient, SE, p-value	-9.5, 6.0	NS
Langlois, J., 2015	Low Quality	Preop Function	Function (Active Knee Flexion)	Post-Op	460	Prognostic	Active flexion	Multivariate regression adjusted for height, BMI, no previous surgery, depression, preop active flexion, preop flexion contracture, lateral residual subluxation, AT/AP	Adjusted coefficient, SE, p-value	0.2, 0.04, 0.004	Preop active flexion is significantly associated with higher postop active flexion.
Liao, C. D., 2016	Moderate Quality	Preop Function	Function (Knee Flexion at 6 months)	6 months	354	Prognostic (All patients received CPM and inpatient rehab exercises)	continuous, preoperative WOMAC score	model contained CPM initial angle, CPM progress, CPM ultimate angle, Length of stay, Peak motion pain, BMI, Preop flexion, preop WOMAC	Stepwise linear regression, beta value, +/- standard error, p-value	-0.526 +/- 0.073. p<0.001	better preop womac was associated with better flexion

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lindberg, M. F., 2016	Low Quality	Preop Function	Depression (HADS)	12 months	202	PICO 8 Prognostic	G2 Continuous Improvement of pain with Walking vs. G1 Recurrent Interference of pain with Walking	none	p value		Continuous Improvement group favored (p = 0.03)
Lizaur, A., 1997	Moderate Quality	Preop Function	Function (Final Flexion)	Post-Op	74	Prognostic	preop patello femoral function	Pearson or Spearman Correlation	p-value	0.9	NS
Lizaur, A., 1997	Moderate Quality	Preop Function	Function (Post op Flexion contracture)	Post-Op	74	Prognostic	preop patello femoral function	Pearson or Spearman Correlation	p-value	0.86	NS
Lizaur-Utrilla, A., 2014	Low Quality	Preop Function	Adverse Event (Clinical Failure)	Post-Op	414	Prognostic	Preop WOM AC Function	Univariate analysis for step wise logistic regression	P-value	0.208	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lizaur-Utrilla, A., 2014	Low Quality	Preop Function	Adverse Event (Clinical Failure)	Post-Op	414	Prognostic	Preop SF-12 PCS	Univariate analysis for step wise logistic regression	P-value	0.738	NS
Lizaur-Utrilla, A., 2014	Low Quality	Preop Function	Adverse Event (Clinical Failure)	Post-Op	414	Prognostic	Knee Society Score; continuous	Logistic regression adjusted for age, BMI, sex, preop WOMAC function, preop SF-12 PCS, preop SF-12 MCS, charlson index, ASA score, preop KSS score, preop ROM, preop KSS function, Preop walking distance, Preop WOMAC pain	Adjusted OR, (CI), Adjusted P-value	0.92, (0.79-1.08), 0.325	NS
Lizaur-Utrilla, A., 2014	Low Quality	Preop Function	Adverse Event (Clinical Failure)	Post-Op	414	Prognostic	KSS Function; continuous	Logistic regression adjusted for age, BMI, sex, preop WOMAC function, preop SF-12 PCS, preop SF-12 MCS, charlson index, ASA score, preop KSS score, preop ROM, preop KSS function, Preop walking distance, Preop WOMAC pain	Adjusted OR, (CI), Adjusted P-value	0.76, (0.63-0.92), 0.006	Higher preop KSS function scores are associated with lower odds of postop clinical failure.
Lizaur-Utrilla, A., 2014	Low Quality	Preop Function	Adverse Event (Clinical Failure)	Post-Op	414	Prognostic	Preop Walking Distance; continuous	Logistic regression adjusted for age, BMI, sex, preop WOMAC function, preop SF-12 PCS, preop SF-12 MCS, charlson index, ASA score, preop KSS score, preop ROM, preop KSS function, Preop walking distance, Preop WOMAC pain	Adjusted OR, (CI), Adjusted P-value	0.87, (0.66-1.14), 0.324	NS
Lizaur-Utrilla, A., 2014	Moderate Quality	Preop Function	Adverse Event (Failure)	Pre-Op	342	Prognostic	continuous; Preop KSS	Multivariate logistic regression with obese cases matched with non-obese controls for gender, age, OA, and preop KSS	P-value	0.239	NS
Mizner, R. L., 2005	High Quality	Preop Function	Function (Knee Flexion)	Post-Op	40	Prognostic (# of pts; 25 men, 15 women)	Quadriceps Strength	Pearson Correlation	Coefficient, p-value	0.031, 0.848	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Papakostidou, I., 2012	Low Quality	Preop Function	Function (KSS)	12 months	204	Prognostic	Preop KSS Function	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop KSS			NS
Papakostidou, I., 2012	Low Quality	Preop Function	Function (WOMAC Function improvement)	12 months	204	Prognostic	Preop WOMAC Function	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	0.17, (0.06-0.28), 0.002	worse preop WOMAC function is associated with more improvement in WOMAC function
Papakostidou, I., 2012	Low Quality	Preop Function	Function (WOMAC Stiffness)	12 months	204	Prognostic	Preop WOMAC stiffness	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	0.07, (-0.02-0.17), 0.1	NS
Park, K. K., 2007	Moderate Quality	Preop Function	Function (Maximum Flexion)	12 months	207	Prognostic (All pts Korean)	Preop AKS scores	Correlation adjusted for BMI, weight, and type of implant	Correlation Coefficient, P-value	0.181, 0.006	Higher preop AKS are correlated with higher postop maximum flexion
Park, K. K., 2007	Moderate Quality	Preop Function	Function (Maximum Flexion)	12 months	207	Prognostic (All pts Korean)	Preop Maximum Flexion	Correlation adjusted for BMI, weight, and type of implant			NS
Park, K. K., 2007	Moderate Quality	Preop Function	Function (Maximum Flexion)	12 months	207	Prognostic (All pts Korean)	Preop Flexion Contracture	Correlation adjusted for BMI, weight, and type of implant			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Park, K. K., 2007	Moderate Quality	Preop Function	Function (Maximum Flexion)	12 months	207	Prognostic (All pts Korean)	Preop WOMAC	Correlation adjusted for BMI, weight, and type of implant			NS
Park, K. K., 2007	Moderate Quality	Preop Function	Function (Maximum Flexion)	12 months	207	Prognostic (All pts Korean)	Preop SF-36	Correlation adjusted for BMI, weight, and type of implant			NS
Rossi, R., 2010	Moderate Quality	Preop Function	Adverse Event (Radiolucency Lines)	Post-Op	62	Prognostic	Continuous Knee Society Score - Function	Multivariable Logistic Regression adjusted for age, sex, BMI, follow-up time, cement penetration, tibial slope, femoral flexion, frontal alignment, clinical, functional, total pre-op and post-op Knee Scores			NS
Sharma, L., 1996	Moderate Quality	Preop Function	Function (SF-36 Physical Function 3mo postop)	3 months	47	Prognostic	unclear	Multiple regression adjusted for BMI, quad strength, bodily pain, CIRS score, previous reconstruction, motivation, social function, role function-emotional, age, education, gender, social support	partial r, significance	0.30, 0.103	NS
Stevens-Lapsley, J. E., 2010	Moderate Quality	Preop Function	Function (Timed Up-and-Go)	1 month	140	Prognostic	continuous	Linear regression unadjusted	P-value for Significant F Change	<0.001	Preop TUG is a significant predictor of 1mo postop TUG

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Stevens-Lapsley, J. E., 2010	Moderate Quality	Preop Function	Function (Timed Up-and-Go)	3 months	120	Prognostic	continuous	Linear regression unadjusted	P-value for Significant F Change	<0.001	Preop TUG is a significant predictor of 3mo postop TUG
Stevens-Lapsley, J. E., 2010	Moderate Quality	Preop Function	Function (Timed Up-and-Go)	6 months	106	Prognostic	continuous	Linear regression unadjusted	P-value for Significant F Change	<0.001	Preop TUG is a significant predictor of 6mo postop TUG
Stevens-Lapsley, J. E., 2010	Moderate Quality	Preop Function	Function (6 Minute Walk Test)	1 month	118	Prognostic	continuous	Linear regression unadjusted	P-value for Significant F Change	<0.001	Preop 6MWT is a significant predictor of 1mo postop 6MWT
Stevens-Lapsley, J. E., 2010	Moderate Quality	Preop Function	Function (6 Minute Walk Test)	3 months	100	Prognostic	continuous	Linear regression unadjusted	P-value for Significant F Change	<0.001	Preop 6MWT is a significant predictor of 3mo postop 6MWT
Stevens-Lapsley, J. E., 2010	Moderate Quality	Preop Function	Function (6 Minute Walk Test)	6 months	85	Prognostic	continuous	Linear regression unadjusted	P-value for Significant F Change	<0.001	Preop 6MWT is a significant predictor of 6mo postop 6MWT

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Stevens-Lapsley, J. E., 2010	Moderate Quality	Preop Function	Function (Stair Climb Test)	1 month	140	Prognostic	continuous	Linear regression unadjusted	P-value for Significant F Change	<0.001	Preop SCT is a significant predictor of 1mo postop SCT
Stevens-Lapsley, J. E., 2010	Moderate Quality	Preop Function	Function (Stair Climb Test)	3 months	120	Prognostic	continuous	Linear regression unadjusted	P-value for Significant F Change	<0.001	Preop SCT is a significant predictor of 3mo postop SCT
Stevens-Lapsley, J. E., 2010	Moderate Quality	Preop Function	Function (Stair Climb Test)	6 months	106	Prognostic	continuous	Linear regression unadjusted	P-value for Significant F Change	<0.001	Preop SCT is a significant predictor of 6mo postop SCT
Stevens-Lapsley, J. E., 2010	Moderate Quality	Preop Function	Function (SF-36 Physical Component Score)	1 month	140	Prognostic	continuous	Linear regression unadjusted	P-value for Significant F Change	<0.001	Preop PCS is a significant predictor of 1mo postop PCS
Stevens-Lapsley, J. E., 2010	Moderate Quality	Preop Function	Function (SF-36 Physical Component Score)	3 months	120	Prognostic	continuous	Linear regression unadjusted	P-value for Significant F Change	<0.001	Preop PCS is a significant predictor of 3mo postop PCS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Stevens-Lapsley, J. E., 2010	Moderate Quality	Preop Function	Function (SF-36 Physical Component Score)	6 months	106	Prognostic	continuous	Linear regression unadjusted	P-value for Significant F Change	<0.001	Preop PCS is a significant predictor of 6mo postop PCS
Sullivan, M., 2009	High Quality	Preop Function	Function (Postop WOMAC Function)	Post-Op	75	Prognostic	Preop WOMAC Function	Hierarchical regression analysis adjusted for age and sex	Beta coefficient	0.13	NS
Sullivan, M., 2009	High Quality	Preop Function	Function (Postop WOMAC Function)	Post-Op	75	Prognostic	WOMAC Function	Pearson Correlation	Correlation Coefficient	0.29	NS
Tribe, K L, 2005	Low Quality	Preop Function	Function (WOMAC Function at 12 months post-surgery)	12 months	70	Prognostic (Pre-op function)	high vs low function	age at operation, gender, discharge destination (home or rehabilitation), preoperative WOMAC Function score, pre-operative SF-36 mental health score	Backwards multiple regression model, Beta, sigma, Adjusted R^2	0.509, 0.000, 0.177	those with better pre-op function had better 12 month function
Twiggs, J., 2017	High Quality	Preop Function	Function (step count 2-4 days postop)	Post-Op	91	Prognostic (Omni Apex prosthesis for TKA)	preop SF12 physical component summary vs postop	stepwise regressed model (preop SF12 physical component summary)	unstandardized coefficient (SE); T-score; p-value	34.94 (12.60); 2.772; 0.00849	SF12 is significantly associated with step count 2-4 days postop

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Twiggs, J., 2017	High Quality	Preop Function	Function (step count 2-4 days postop)	Post-Op	91	Prognostic (Omni Apex prosthesis for TKA)	preop SF 12 PCS vs postop	6-week postop results matched predictor model (preop SF12 PCS, preop step count, gender-coefficient is male)	unstandardized coefficient (SE); T-score; p-value	32.286 (13.383); 2.412; 0.0209	patients with better preop function had higher step count
Twiggs, J., 2017	High Quality	Preop Function	Function (step count 2-4 days postop)	Post-Op	91	Prognostic (Omni Apex prosthesis for TKA)	preop step count vs postop	6-week postop results matched predictor model (preop SF12 PCS, preop step count, gender-coefficient is male)	unstandardized coefficient (SE); T-score; p-value	0.063 (0.036); 1.746; 0.0891	NS
Twiggs, J., 2017	High Quality	Preop Function	Function (step count 2-4 days postop)	Post-Op	91	Prognostic (Omni Apex prosthesis for TKA)	gender (male vs female)	6-week postop results matched predictor model (preop SF12 PCS, preop step count, gender-coefficient is male)	unstandardized coefficient; T-score; p-value	- 246.65; -0.98; 0.3336	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Worland, R. L., 1998	Low Quality	Preop Function	Function (Knee Flexion at 6 wks)	6 weeks	80	Prognostic	Pre-op HSS Score	model included: sex, affected side, HSS score, Knee Flexion, Flexion Contracture	Multivariate logistic regression, Odds Ratio, P value	0.998, p=0.933	NS
Worland, R. L., 1998	Low Quality	Preop Function	Function (Knee Flexion at 6 wks)	6 weeks	80	Prognostic	continuous Flexion Contracture	model included: sex, affected side, HSS score, Knee Flexion, Flexion Contracture	Multivariate logistic regression, Odds Ratio, P value	1.093, p=0.026	Patient flexion contracture pre-surgery was associated with less knee flexion at 6 wks
Zeni, J. A., Jr., 2010	Low Quality	Preop Function	walk with handrail	3 months	105	PICO 8 Prognostic	KOS-ADLS Score	none	p value	>.05	NS
Zeni, J. A., Jr., 2010	Low Quality	Preop Function	walk with handrail	2 years	105	PICO 8 Prognostic	KOS-ADLS Score	none	p value	>.05	NS
Zeni, J. A., Jr., 2010	Low Quality	Preop Function	walk with handrail	3 months	105	PICO 8 Prognostic	Pattern - % Step over (vs. step-to)	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Zeni, J. A., Jr., 2010	Low Quality	Preop Function	walk with handrail	2 years	105	PICO 8 Prognostic	Pattern - % Step over (vs. step-to)	none	p value	>.05	NS
Zeni, J. A., Jr., 2010	Low Quality	Preop Function	walk with handrail	3 months	105	PICO 8 Prognostic	Preop handrail use vs no Handrail use	none	p value	<.05	Handrail users had sig higher preop handrail use than non-users
Zeni, J. A., Jr., 2010	Low Quality	Preop Function	walk with handrail	2 years	105	PICO 8 Prognostic	Preop handrail use vs no Handrail use	none	p value	<.05	Handrail users had sig higher preop handrail use than non-users
Zeni, J. A., Jr., 2010	Low Quality	Preop Function	walk with handrail	3 months	105	PICO 8 Prognostic	Preop Stair Climb Test	none	p value	>.05	NS
Zeni, J. A., Jr., 2010	Low Quality	Preop Function	walk with handrail	2 years	105	PICO 8 Prognostic	Preop Stair Climb Test	none	p value	>.05	NS
Zeni, J. A., Jr., 2010	Low Quality	Preop Function	walk with handrail	3 months	105	PICO 8 Prognostic	Quadriiceps Index	none	p value	>.05	NS
Zeni, J. A., Jr., 2010	Low Quality	Preop Function	walk with handrail	2 years	105	PICO 8 Prognostic	Quadriiceps Index	none	p value	<.05	Handrail users had sig lower Quadriceps index than non-users

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Zeni, J. A., Jr., 2010	Low Quality	Preop Function	walk with handrail	3 months	105	PICO 8 Prognostic	Quadriceps strength (operative side)	none	p value	>.05	NS
Zeni, J. A., Jr., 2010	Low Quality	Preop Function	walk with handrail	2 years	85	PICO 8 Prognostic	Quadriceps strength (operative side)	none	p value	<.05	Handrail users had sig lower quadriceps strength on the operative side than non-users

Table 123: Preop ROM

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Antony, J., 2017	Low Quality	Preop ROM	Function (maximum extension angle (MEA))	1 year	105	Prognostic	preop MEA (continuous)	unclear	p-value	>0.5	NS
Antony, J., 2017	Low Quality	Preop ROM	Function (Maximum flexion angle (MFA))	1 year	105	Prognostic	preop MEA (continuous)	unclear	pvalue	>0.5	NS
Antony, J., 2017	Low Quality	Preop ROM	Function (ROM)	1 year	105	Prognostic	preop MEA (continuous)	unclear	pvalue	>0.5	NS
Bade, M. J., 2014	Low Quality	Preop ROM	Function (Knee Extension)	2 days	64	Prognostic	knee extension	Linear regression	Unadjusted Coefficient, (CI), P-value	0.05, (-0.25-0.35), 0.76	NS
Bade, M. J., 2014	Low Quality	Preop ROM	Function (Knee Extension)	6 months	64	Prognostic	knee extension	Linear regression	Unadjusted Coefficient, (CI), P-value	0.46, (0.27-0.64), <0.001	Higher preop knee extension is associated with higher postop knee extension at 6 mos postop.

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Bin Abd Razak, H. R., 2014	Low Quality	Preop ROM	Flexion ROM	6 months	302	PICO 8 Prognostic	G2 Preop ROM > or equal to 110 degrees vs. G1 Preop ROM <110 degrees	none	p value		Preop ROM > or equal to 110 degrees had higher postop flexion at 6 months (p <0.001)
Bin Abd Razak, H. R., 2014	Low Quality	Preop ROM	Flexion ROM	2 years	302	PICO 8 Prognostic	G2 Preop ROM > or equal to 110 degrees vs. G1 Preop ROM <110 degrees	none	p value		Preop ROM > or equal to 110 degrees had higher postop flexion at 2 years (p <0.001)
Bin, S. I., 2007	High Quality	Preop ROM	Function (post op ROM)	Post-Op	90	Prognostic (Received LPS-high flexion implants)	Preop ROM	Multiple logistic regression analysis	P-value	<0.001	Higher preop ROM is associated with higher postop ROM

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Bugala-Szpak, J., 2010	Low Quality	Preop ROM	Function (KOOS)	6 weeks	40	Prognostic	axis of knee joint (range > 90° vs range < 90°)	ANOVA, no adjustment	Mean Square, P-Value	66.5626, 0.512700	NS
Bugala-Szpak, J., 2010	Low Quality	Preop ROM	Function (KOOS)	6 weeks	40	Prognostic	contracture of the knee (groups in five-degree spans (range: -5° ÷ 40°))	ANOVA, no adjustment	Mean Square, P-Value	66.5626, 0.512700	NS
Bugala-Szpak, J., 2010	Low Quality	Preop ROM	Function (SF-36)	6 weeks	40	Prognostic	axis of knee joint (range > 90° vs range < 90°)	ANOVA, no adjustment	Mean Square, P-Value	195.7407, 0.508110	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Bugala-Szpak, J., 2010	Low Quality	Preop ROM	Function (SF-36)	6 weeks	40	Prognostic	contracture of the knee (groups in five-degree spans (range: -5° ÷ 40°))	ANOVA, no adjustment	Mean Square, P-Value	195.7407, 0.508110	NS
Cheng, K., 2010	High Quality	Preop ROM	Fixed Flexion Deformity	1 years	154	PICO 8 Prognostic	G2 No Preop Fixed Flexion Deformity vs. G1 Preop Fixed Flexion Deformity	Matched by age, sex, and BMI	p value	p<.001	p<0.001; p-value is of change score from baseline; No Preop FFD group favored

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cheng, K., 2010	High Quality	Preop ROM	Fixed Flexion Deformity	5 years	154	PICO 8 Prognostic	G2 No Preop Fixed Flexion Deformity vs. G1 Preop Fixed Flexion Deformity	Matched by age, sex, and BMI	p value	p=.042	p=0.042; p-value is of change score from 1 yr to 5 yr; No Preop FFD group favored
Cheng, K., 2010	High Quality	Preop ROM	Fixed Flexion Deformity	10 years	154	PICO 8 Prognostic	G2 No Preop Fixed Flexion Deformity vs. G1 Preop Fixed Flexion Deformity	Matched by age, sex, and BMI	p value	p=0.058; p-value is of change score from 5 to 10 yrs	p=0.058; p-value is of change score from 5 to 10 yrs

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cheng, K., 2010	High Quality	Preop ROM	KSS	1 years	154	PICO 8 Prognostic	G2 No Preop Fixed Flexion Deformity vs. G1 Preop Fixed Flexion Deformity	Matched by age, sex, and BMI	p value	p<.001	p<0.001; p-value is of change score from baseline; No Preop FFD group favored
Cheng, K., 2010	High Quality	Preop ROM	KSS	5 years	154	PICO 8 Prognostic	G2 No Preop Fixed Flexion Deformity vs. G1 Preop Fixed Flexion Deformity	Matched by age, sex, and BMI	p value	p=0.637; p-value is of change score from 1 yr to 5 yr	p=0.637; p-value is of change score from 1 yr to 5 yr

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cheng, K., 2010	High Quality	Preop ROM	KSS	10 years	154	PICO 8 Prognostic	G2 No Preop Fixed Flexion Deformity vs. G1 Preop Fixed Flexion Deformity	Matched by age, sex, and BMI	p value	p=0.349; p-value is of change score from 5 to 10 yrs	p=0.349; p-value is of change score from 5 to 10 yrs
Cheng, K., 2010	High Quality	Preop ROM	Maximum Flexion	1 years	154	PICO 8 Prognostic	G2 No Preop Fixed Flexion Deformity vs. G1 Preop Fixed Flexion Deformity	Matched by age, sex, and BMI	p value	p=0.355; p-value is of change score from baseline	p=0.355; p-value is of change score from baseline

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cheng, K., 2010	High Quality	Preop ROM	Maximum Flexion	5 years	154	PICO 8 Prognostic	G2 No Preop Fixed Flexion Deformity vs. G1 Preop Fixed Flexion Deformity	Matched by age, sex, and BMI	p value	p=0.264; p-value is of change score from 1 yr to 5 yr	p=0.264; p-value is of change score from 1 yr to 5 yr
Cheng, K., 2010	High Quality	Preop ROM	Maximum Flexion	10 years	154	PICO 8 Prognostic	G2 No Preop Fixed Flexion Deformity vs. G1 Preop Fixed Flexion Deformity	Matched by age, sex, and BMI	p value	p=0.052; p-value is of change score from 5 to 10 yrs	p=0.052; p-value is of change score from 5 to 10 yrs

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cheng, K., 2010	High Quality	Preop ROM	Total ROM	1 years	154	PICO 8 Prognostic	G2 No Preop Fixed Flexion Deformity vs. G1 Preop Fixed Flexion Deformity	Matched by age, sex, and BMI	p value	p=.001	p=0.001; p-value is of change score from baseline; No Preop FFD group favored
Cheng, K., 2010	High Quality	Preop ROM	Total ROM	5 years	154	PICO 8 Prognostic	G2 No Preop Fixed Flexion Deformity vs. G1 Preop Fixed Flexion Deformity	Matched by age, sex, and BMI	p value	p=0.944; p-value is of change score from 1 yr to 5 yr	p=0.944; p-value is of change score from 1 yr to 5 yr

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cheng, K., 2010	High Quality	Preop ROM	Total ROM	10 years	154	PICO 8 Prognostic	G2 No Preop Fixed Flexion Deformity vs. G1 Preop Fixed Flexion Deformity	Matched by age, sex, and BMI	p value	p=0.207; p-value is of change score from 5 to 10 yrs	p=0.207; p-value is of change score from 5 to 10 yrs
Gatha, N. M., 2004	High Quality	Preop ROM	Function (postop ROM)	Post-Op	135	Prognostic (TKA, cemented NexGen Legacy Posterior-Stabilized Prosthesis)	preop ROM, continuous	least squares adjustment (preop ROM, pre/post-resurfacing patellar thickness, change in patella thickness pre to post resurfacing, pre/post Insall-Salvati ratios, pre/post Blackburne-Peel ratios, preop alignment (varus, valgus, neutral), age, sex, preop extension, preop flexion, preop KSS)	coeff (SE); t-statistic	0.28 (.07); 4.09	preop rom is associated with postop rom
Gatha, N. M., 2004	High Quality	Preop ROM	Function (postop ROM)	Post-Op	135	Prognostic (TKA, cemented NexGen Legacy Posterior-Stabilized Prosthesis)	preop extension	least squares adjustment (preop ROM, pre/post-resurfacing patellar thickness, change in patella thickness pre to post resurfacing, pre/post Insall-Salvati ratios, pre/post Blackburne-Peel ratios, preop alignment (varus, valgus, neutral), age, sex, preop extension, preop flexion, preop KSS)	coeff (SE); t-statistic	-0.03 (1.23); 1.68	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Gatha, N. M., 2004	High Quality	Preop ROM	Function (postop ROM)	Post-Op	135	Prognostic (TKA, cemented NexGen Legacy Posterior-Stabilized Prosthesis)	preop flexion	least squares adjustment (preop ROM, pre/post-resurfacing patellar thickness, change in patella thickness pre to post resurfacing, pre/post Insall-Salvati ratios, pre/post Blackburne-Peel ratios, preop alignment (varus, valgus, neutral), age, sex, preop extension, preop flexion, preop KSS)	coeff (SE); t-statistic	0.17 (1.65); 1.62	NS
Gatha, N. M., 2004	High Quality	Preop ROM	Function (postop KSS)	Post-Op	135	Prognostic (TKA, cemented NexGen Legacy Posterior-Stabilized Prosthesis)	preop ROM; continuous	least squares adjustment (preop ROM, preop KSS, preop insall-salvati ratio, preop blackburne-peel ratio, postop insall-salvati ratio, postop blackburne-peel ratio, preresurfacing patellar thickness)	coeff (SE); t-statistic	0.23 (0.02); 1.31	NS
Gatha, N. M., 2004	High Quality	Preop ROM	Function (Knee Extension)	Post-Op	135	Prognostic (TKA, cemented NexGen Legacy Posterior-Stabilized Prosthesis)	Preop Extension; continuous	least squares regression	coeff (SE); t-statistic	-0.01 (3.35), 2.44	Preop flexion contracture is associated with increased postop flexion contracture
Holm, B., 2010	Moderate Quality	Preop ROM	Function (% change form pre to postop for 10-m fast-speed walk)	Discharge	23	Prognostic	continuous; Knee-flexion ROM	Multivariate linear regression adjusting for age, sex, knee swelling, knee-extension strength, knee-flexion ROM	Adjusted B, (CI), p-value	0.4, (0.1-0.6), .018	Knee-flexion ROM is significantly associated with an increased % change of 10m walking speed

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lee, D. C., 1998	Low Quality	Preop ROM	Function (Mean ROM - flexion)	2 years	34	Prognostic (Preop ROM 3 Categories)	poor vs intermediate vs good preop ROM	mean ROM within Group	poor preop ROM mean, sd/intermediate preop ROM mean, sd/good preop ROM mean, sd; (p value)	103, 14/110, 10/119, 10 (p>0.05)	NS
Liao, C. D., 2016	Moderate Quality	Preop ROM	Function (Knee Flexion at 6 months)	6 months	354	Prognostic (All patients received CPM and inpatient rehab exercises)	continuous, preoperative flexion (degrees)	model contained CPM initial angle, CPM progress, CPM ultimate angle, Length of stay, Peak motion pain, BMI, Preop flexion, preop WOMAC	Stepwise linear regression, beta value, +/- standard error, p-value	0.143 +/- 0.036, p<0.001	better preop flexion was associated with better post op flexion

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Liao, C. D., 2016	Moderate Quality	Preop ROM	Function (WOMAC score at discharge)	Discharge	354	Prognostic (All patients received CPM and inpatient rehab exercises)	continuous, preoperative flexion (degrees)	model contained CPM initial angle, CPM progress, CPM ultimate angle, BMI, Preoperative flexion	Stepwise linear regression, beta value, +/- standard error, p-value	-0.091 +/- 0.022, p<0.001	higher preop ROM was associated with better post op WOMAC scores
Liao, C. D., 2016	Moderate Quality	Preop ROM	Function (WOMAC score at 6 months)	6 months	354	Prognostic (All patients received CPM and inpatient rehab exercises)	continuous, preoperative flexion (degrees)	model contained CPM initial angle, CPM progress, CPM ultimate angle, BMI, Preoperative flexion	Stepwise linear regression, beta value, +/- standard error, p-value	-0.044 +/- 0.01, p<0.01	higher preop ROM was associated with better post op WOMAC scores
Lizaur, A., 1997	Moderate Quality	Preop ROM	Function (Final Flexion)	Post-Op	74	Prognostic	preop femoro tibial angle (continuous)	Pearson or Spearman Correlation	p-value	0.22	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lizaur, A., 1997	Moderate Quality	Preop ROM	Function (Final Flexion)	Post-Op	74	Prognostic	continuous	Student t test	p-value	0.002	Preoperative range of flexion is significantly associated with postop flexion
Lizaur, A., 1997	Moderate Quality	Preop ROM	Function (Final Flexion)	Post-Op	74	Prognostic	Preop flexion contracture (continuous)	Student t test	p-value	0.59	NS
Lizaur, A., 1997	Moderate Quality	Preop ROM	Function (Post op Flexion contracture)	Post-Op	74	Prognostic	preop femoro tibial angle (continuous)	Pearson or Spearman Correlation	p-value	0.16	NS
Lizaur, A., 1997	Moderate Quality	Preop ROM	Function (Post op Flexion contracture)	Post-Op	74	Prognostic	Preop flexion contracture (continuous)	Pearson or Spearman Correlation	p-value	0.93	NS
Lizaur, A., 1997	Moderate Quality	Preop ROM	Function (Post op Flexion contracture)	Post-Op	74	Prognostic	Preop flexion (continuous)	Pearson or spearman correlation	p-value	0.3	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lizaur, A., 1997	Moderate Quality	Preop ROM	Function (post op flexion of 90 degrees)	Post-Op	74	Prognostic	preop flexion (continuous)	univariate analysis	% achieving final flexion over 90 degrees in patient with a minimum preop flexion of 90/% achieving it in those with less than 90 degrees preop flexion, p-value	91.3%/71.4%, p=.040	better preop flexion was associated with better post op flexion
Lizaur-Utrilla, A., 2014	Low Quality	Preop ROM	Adverse Event (Clinical Failure)	Post-Op	414	Prognostic	continuous	Logistic regression adjusted for age, BMI, sex, preop WOMAC function, preop SF-12 PCS, preop SF-12 MCS, charlson index, ASA score, preop KSS score, preop ROM, preop KSS function, Preop walking distance, Preop WOMAC pain	Adjusted OR, (CI), Adjusted P-value	1.01, (0.95-1.08), 0.590	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Mizner, R. L., 2005	High Quality	Preop ROM	Function (Timed Up and Go Test)	Post-Op	40	Prognostic (# of pts; 25 men, 15 women)	preop flexion ROM continuous	F-test comparing regressions, adjusted for age, flex ROM, bodily pain	p-value	p>.05	NS
Mizner, R. L., 2005	High Quality	Preop ROM	Function (Stair Climbing Test)	Post-Op	40	Prognostic (# of pts; 25 men, 15 women)	preop flexion ROM continuous	F-test comparing regressions, adjusted for age, flex ROM, bodily pain	p-value	p>.05	NS
Mizner, R. L., 2005	High Quality	Preop ROM	Function (Knee Outcome Survey-Activities of Daily Living Scale (KOS-ADLS))	Post-Op	40	Prognostic (# of pts; 25 men, 15 women)	preop flexion ROM continuous	F-test comparing regressions, adjusted for age, flex ROM, bodily pain	p-value	p>.05	NS
Mizner, R. L., 2005	High Quality	Preop ROM	Function (SF-36 physical component summary (PCS))	Post-Op	40	Prognostic (# of pts; 25 men, 15 women)	preop flexion ROM continuous	F-test comparing regressions, adjusted for age, flex ROM, bodily pain	p-value	p>.05	NS
Park, K. K., 2007	Moderate Quality	Preop ROM	Function (Maximum Flexion)	12 months	207	Prognostic (All pts Korean)	Preop ROM	Correlation adjusted for BMI, weight, and type of implant			NS
Schurman, D. J., 2005	Low Quality	Preop ROM	Function (improvement in arc motion)	Post-Op	358	Prognostic (5 different types of prostheses: insall-burstein I, insall-burstein II, apollo, performance, ascent)	preop range of motion	unclear correlation test	regression coefficient; p value	-.65; P<.05	better preop range of motion is associated with less improvement in arc of motion

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Schurman, D. J., 2005	Low Quality	Preop ROM	Function (improvement in arc of motion)	Post-Op	358	Prognostic (5 different types of prostheses: insall-burstein I, insall-burstein II, apollo, performance, ascent)	preop arc of motion	unclear correlation test	regression coefficient; p value	-.073; p<.05	better preop arc of motion is associated with less improvement in arc of motion
Schurman, D. J., 2005	Low Quality	Preop ROM	Function (improvement absolute flexion)	Post-Op	358	Prognostic (5 different types of prostheses: insall-burstein I, insall-burstein II, apollo, performance, ascent)	preop ROM	unclear correlation test	regression coefficient; p value	-.44; P<.05	better preop ROM is associated with less improvement in absolute flexion
Siddiqui, M. M., 2012	Low Quality	Preop ROM	Function (Moderate or Severe Recurvatum (>5 degrees))	2 years	2587	Prognostic	continuous	Binary Logistic Regression adjusted for age, BMI, diagnosis, implant design, and postop AP laxity	pvalue	0.14	NS
Worland, R. L., 1998	Low Quality	Preop ROM	Function (Knee Flexion at 6 wks)	6 weeks	80	Prognostic	continuous Knee Flexion	model included: sex, affected side, HSS score, Knee Flexion, Flexion Contracture	Multivariate logistic regression, Odds Ratio, P value	1.000, p=0.980	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Zech, A., 2015	Low Quality	Preop ROM	Function (Active Knee ROM improvement from baseline)	Discharge	64	Prognostic (Exercise Therapy)	Baseline values of respective WOMAC and ROM data before start of rehab	Medical condition and gender included in model as factors; Baseline values, age, BMI, days after surgery, and exercise therapy dosage (duration and intensity) included as covariates	Analysis of Covariance, P-value, R ²	<0.001, 0.665	Those w/ lower ROM @ start of rehab had sig higher increase compared w/ patients w/high baseline ROM
Zech, A., 2015	Low Quality	Preop ROM	Function (Passive Knee ROM improvement from baseline)	Discharge	64	Prognostic (Exercise Therapy)	Baseline values of respective WOMAC and ROM data before start of rehab	Medical condition and gender included in model as factors; Baseline values, age, BMI, days after surgery, and exercise therapy dosage (duration and intensity) included as covariates	Analysis of Covariance, P-value, R ²	<0.001, 0.669	Those w/ lower ROM @ start of rehab had sig higher increase compared w/ patients w/high baseline ROM
Zeni, J. A., Jr., 2010	Low Quality	Preop ROM	walk with handrail	3 months	105	PICO 8 Prognostic	ROM - extension	none	p value	>.05	NS
Zeni, J. A., Jr., 2010	Low Quality	Preop ROM	walk with handrail	2 years	105	PICO 8 Prognostic	ROM - extension	none	p value	>.05	NS
Zeni, J. A., Jr., 2010	Low Quality	Preop ROM	walk with handrail	3 months	105	PICO 8 Prognostic	ROM - flexion	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Zeni, J. A., Jr., 2010	Low Quality	Preop ROM	walk with handrail	2 years	105	PICO 8 Prognostic	ROM - flexion	none	p value	>.05	NS

Table 124: Preop Strength

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Holm, B., 2010	Moderate Quality	Preop Strength	Function (% change from pre to postop for 10-m fast-speed walk)	Discharge	23	Prognostic	continuous; Knee-extension strength	Multivariate linear regression adjusting for age, sex, knee swelling, knee-extension strength, knee-flexion ROM	Adjusted B, (CI), p-value	0.5, (0.1-0.9), .009	Knee-extension strength is significantly associated with an increased % change of 10m walking speed
Sharma, L., 1996	Moderate Quality	Preop Strength	Function (SF-36 Physical Function 3mo postop)	3 months	47	Prognostic	unclear	Multiple regression adjusted for BMI, preop physical function, bodily pain, CIRS score, previous reconstruction, motivation, social function, role function-emotional, age, education, gender, social support	partial r, significance	0.05, 0.788	NS

Table 125: SES Low vs High Education

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Papakostidou, I., 2012	Low Quality	SES Low vs High Education	Function (KSS)	12 months	204	Prognostic	Low education vs High education	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop KSS			NS
Papakostidou, I., 2012	Low Quality	SES Low vs High Education	Function (WOMAC Function)	12 months	204	Prognostic	Low education vs High education	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	-3.08, (-6.76-0.59), 0.09	NS
Papakostidou, I., 2012	Low Quality	SES Low vs High Education	Function (WOMAC Stiffness)	12 months	204	Prognostic	Low education vs High education	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	-0.16, (-0.70-0.28), 0.8	NS
Sharma, L., 1996	Moderate Quality	SES Low vs High Education	Function (SF-36 Physical Function 3mo postop)	3 months	47	Prognostic	Unclear	Multiple regression adjusted for social support, age, and gender	partial r, significance	-0.25, 0.119	NS

Table 126: SES Rural vs Urban residence

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Papakostidou, I., 2012	Low Quality	SES Rural vs Urban residence	Function (KSS)	12 months	204	Prognostic	Rural residence vs urban residence	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop KSS			NS
Papakostidou, I., 2012	Low Quality	SES Rural vs Urban residence	Function (WOMAC Function)	12 months	204	Prognostic	Rural residence vs urban residence	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	-2.25, (-4.87-0.38), 0.09	NS
Papakostidou, I., 2012	Low Quality	SES Rural vs Urban residence	Function (WOMAC Stiffness)	12 months	204	Prognostic	Rural residence vs urban residence	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	-0.25, (-0.59-0.22), 0.06	NS

Table 127: SES Socioeconomic Deprivation

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Clement, N. D., 2013	Low Quality	SES Socioeconomic Deprivation	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	socioeconomic deprivation (SIMD)	univariate analysis for stepwise regression	p-value	0.93	NS

Table 128: Sex

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Aderinto, J., 2005	Low Quality	Sex	Function (postop fixed flexion deformity (FFD) > 10 degrees)	1 week	344	Prognostic (crepe compression bandage applied)	males compared to females	binary logistic regression (age, gender, diagnosis, preop FFD, max active preop flexion compared to postop FFD>10)	p-value	0.0073	women had less post op FFD
Antony, J., 2017	Low Quality	Sex	Function (maximum extension angle (MEA))	1 year	105	Prognostic	male vs female (direction unclear)	unclear	p-value	>0.5	NS
Antony, J., 2017	Low Quality	Sex	Function (ROM)	1 year	105	Prognostic	male vs female (direction unclear)	unclear	pvalue	>0.5	NS
Astephen Wilson, J. L., 2015	Low Quality	Sex	Average Gait Speed	1 years	52	PICO 8 Prognostic	G2 Women vs. G1 Men	none	p value	>.05	NS
Astephen Wilson, J. L., 2015	Low Quality	Sex	Knee Extension Strength	1 years	52	PICO 8 Prognostic	G2 Women vs. G1 Men	none	p value		Men had significantly higher postop knee extension strength (p < 0.0001)

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Astephen Wilson, J. L., 2015	Low Quality	Sex	Knee Flexion Strength	1 years	52	PICO 8 Prognostic	G2 Women vs. G1 Men	none	p value		Men had significantly higher postop knee flexion strength (p = 0.001)
Astephen Wilson, J. L., 2015	Low Quality	Sex	Plantar flexion Strength	1 years	52	PICO 8 Prognostic	G2 Women vs. G1 Men	none	p value		Men had significantly higher postop plantar flexion strength (p < 0.0001)
Bade, M. J., 2014	Low Quality	Sex	Function (6 min walk test)	6 months	64	Prognostic	Male vs female	Linear regression adjusted for age, sex, acute TUG time, preop TUG time	Adjusted Coefficient, SE, P-value	34.2, 16.2, 0.04	Being male is significantly associated with higher 6 minute walk test at 6 mos postop.
Bin, S. I., 2007	High Quality	Sex	Function (ROM)	Post-Op	90	Prognostic (Received LPS-high flexion implants)	Male vs female	Multiple logistic regression analysis	P-value	>0.05	NS
Bonnefoy-Mazure, A., 2017	Low Quality	Sex	Function (Gain in Gait Speed 1 year post op)	1 year	79	Prognostic (Obese (BMI 30+) vs. Non-Obese (BMI <30))	Women (=1) vs. Men	Multivariate Linear Regression adjusted for BMI, Age, magnitude WOMAC pain improvement	Coefficient, 95% CI, pvalue	0.04, (-0.03, 0.14), 0.238	NS
Bonnefoy-Mazure, A., 2017	Low Quality	Sex	Function (Gain in Knee ROM 1 year postop)	1 year	79	Prognostic (Obese (BMI 30+) vs. Non-Obese (BMI <30))	Women (1) vs. Men	Multivariable Linear Regression adjusted for BMI, age, magnitude WOMAC pain improvement	Coefficient, 95% CI, pvalue	1.78, (-1.72, 5.30), 0.314	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Carvalho Junior, L. H., 2017	Low Quality	Sex	Function (ROM)	6 months	155	Prognostic	male vs. female (direction unclear)	Student's T Test or Wilcoxon's test	p-value	>0.05	NS
Chatterji, U., 2005	Low Quality	Sex	Derived Sport Score	Post-Op	128	PICO 8 Prognostic	Group 3 Females vs. Group 2 Males	none	p value		Men had a higher postop derived sports score than women (p=<0.003)
Chatterji, U., 2005	Low Quality	Sex	Oxford Knee Score	Post-Op	144	PICO 8 Prognostic	Group 3 Females vs. Group 2 Males	none	p value	>.05	NS
Chatterji, U., 2005	Low Quality	Sex	Patient Perceived Sport Score	Post-Op	144	PICO 8 Prognostic	Group 3 Females vs. Group 2 Males	none	p value	>.05	NS
Chung, L. H., 2011	Low Quality	Sex	Deep Vein Thrombosis	Post-Op	328	PICO 8 Prognostic	Group 2 Male vs. Group 1 Women	none	p value	p<.05	women at higher risk of dvt

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Clement, N. D., 2013	Moderate Quality	Sex	Function (Oxford Knee Score)	1 year	2392	Prognostic	Female vs male	Multivariate linear regression adjusted for gender, back pain, comorbidities, preop OKS, preop SF-12 PCS and MCS, surgeon, prosthesis	Coefficient, CI, p-value	0.37, (-0.35-1.10), 0.31	NS
Clement, N. D., 2013	Low Quality	Sex	Function (improvement in Oxford Knee Score (OKS) after TKR)	Post-Op	966	Prognostic (primary TKR for symptomatic OA)	male	univariate analysis for stepwise regression	p-value	0.023	women had better oks scores
Dalury, Df, 2011	Low Quality	Sex	Function (Reaction Time)	4 weeks	29	Prognostic	Female vs Male	Two by two factorial analysis with one between-subject factor			NS
Dalury, Df, 2011	Low Quality	Sex	Function (Gas-off)	4 weeks	29	Prognostic	Female vs Male	Two by two factorial analysis with one between-subject factor			NS
Dalury, Df, 2011	Low Quality	Sex	Function (Transition Time)	4 weeks	29	Prognostic	Female vs Male	Two by two factorial analysis with one between-subject factor			NS
Dauty, M., 2009	Moderate Quality	Sex	Other (Duration of Inpatient Rehabilitation)	Discharge	244	Prognostic	Female vs male	Multivariate linear regression adjusted for gender, home help, and previous joint replacement	Beta Coefficient, SE, P-value	2.36, 1.08, 0.02	Males are associated with longer duration of inpatient rehab.

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Emerson, R. H., Jr., 2008	Low Quality	Sex	Flexion(in subgroup with extended implant size)	6 months	212	PICO 8 Prognostic	Group 4: Extended Implant Size - Women vs. Group 3: Extended Implant Size - Men	none	p value	>.05	NS
Emerson, R. H., Jr., 2008	Low Quality	Sex	Flexion(in subgroup with original implant size)	6 months	183	PICO 8 Prognostic	Group 2: Original Implant Size - Women vs. Group 1: Original Implant Size - Men	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Emerson, R. H., Jr., 2008	Low Quality	Sex	Knee Society Score(in subgroup with extended implant size)	6 months	212	PICO 8 Prognostic	Group 4: Extended Implant Size - Women vs. Group 3: Extended Implant Size - Men	none	p value	>.05	NS
Emerson, R. H., Jr., 2008	Low Quality	Sex	Knee Society Score(in subgroup with original implant size)	6 months	183	PICO 8 Prognostic	Group 2: Original Implant Size - Women vs. Group 1: Original Implant Size - Men	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Gatha, N. M., 2004	High Quality	Sex	Function (postop ROM)	Post-Op	135	Prognostic (TKA, cemented NexGen Legacy Posterior-Stabilized Prosthesis)	male compared to female	least squares adjustment (preop ROM, pre/post-resurfacing patellar thickness, change in patella thickness pre to post resurfacing, pre/post Insall-Salvati ratios, pre/post Blackburne-Peel ratios, preop alignment (varus, valgus, neutral), age, sex, preop extension, preop flexion, preop KSS)	coeff (SE); t-statistic	0.01 (1.76); 0.12	NS
Gen, L. Y., 2015	Low Quality	Sex	Knee Society Score	2 years	217	PICO 8 Prognostic	G2 Female vs. G1 Male	none	p value	>.05	NS
Gen, L. Y., 2015	Low Quality	Sex	KSS - Function	2 years	217	PICO 8 Prognostic	G2 Female vs. G1 Male	none	p value	>.05	NS
Gen, L. Y., 2015	Low Quality	Sex	Oxford Knee Score	2 years	217	PICO 8 Prognostic	G2 Female vs. G1 Male	none	p value	>.05	NS
Gen, L. Y., 2015	Low Quality	Sex	Range of Motion	2 years	217	PICO 8 Prognostic	G2 Female vs. G1 Male	none	p value	>.05	NS
Gen, L. Y., 2015	Low Quality	Sex	SF-36 PCS	2 years	217	PICO 8 Prognostic	G2 Female vs. G1 Male	none	p value	>.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Ha, C. W., 2016	Low Quality	Sex	Function (Knee Society Function)	Post-Op	630	Prognostic	Female compared to male	Multiple Median Regression adjusted for preop ROM, change in ROM, age, sex, BMI, KS knee, KS function, and WOMAC pain, stiffness, and function	Regression Coefficient, (CI), p-value	2.860, (0.680 - 5.040), 0.010	Significantly associated with higher postop KS function score
Ha, C. W., 2016	Low Quality	Sex	Function (High Flexion Knee Score)	Post-Op	630	Prognostic	Female compared to male	Multiple Median Regression adjusted for preop ROM, change in ROM, age, sex, BMI, KS knee, KS function, and WOMAC pain, stiffness, and function	Regression Coefficient, (CI), p-value	1.758, (0.626 - 2.889), 0.002	Significantly associated with a higher postop HKFS function score
Ha, C. W., 2016	Low Quality	Sex	Function (WOMAC Function)	Post-Op	630	Prognostic	Female compared to male	Multiple Median Regression adjusted for preop ROM, change in ROM, age, sex, BMI, KS knee, KS function, and WOMAC pain, stiffness, and function	Regression Coefficient, (CI), p-value	-2.495, (-3.811 - 1.179), <.001	Significantly associated with a lower postop WOMAC function score
Holm, B., 2010	Moderate Quality	Sex	Function (% Changes from pre-to-post op Knee-Extension Strength)	Discharge	24	Prognostic	Men vs women	Multivariate linear regression adjusting for age, sex, knee swelling	Adjusted B, (CI), p-value	-0.1, (-11.0-10.7), .978	NS
Holm, B., 2010	Moderate Quality	Sex	Function (% change form pre to postop for 10-m fast-speed walk)	Discharge	23	Prognostic	Men versus women	Multivariate linear regression adjusting for age, sex, knee swelling, knee-extension strength, knee-flexion ROM	Adjusted B, (CI), p-value	0.7, (-8.7-10.1), .871	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Jones, C. A., 2003	Moderate Quality	Sex	Function (WOMAC Function ("standardized" - scores adjusted and direction reversed))	6 months	276	Prognostic	Female vs Male (ref)	multiple linear regression adjusted for age, preop WOMAC function, comorbid conditions, preop walking devices	Standardized coefficient, (CI), pvalue	-0.01, (-4.85, 4.32) 0.91	NS
Jones, C. A., 2003	Moderate Quality	Sex	Function (SF-36 Physical Function)	6 months	276	Prognostic	female vs male (ref)	multiple linear regression adjusted for age, preop WOMAC function, preop walking distance, preop walking devices	standardized coefficient, (CI), p-value	-0.05, (-8.65, 3.40), 0.39	NS
Jones, C. A., 2012	Low Quality	Sex	Function (WOMAC function)	Post-Op	376	Prognostic (TKA)	Female vs. male (ref)	random effects model fitted for WOMAC function scores (time, time-square, BMI 30.0-34.9kg/m ² , BMI≥35.0kg/m ² , DM, cardiac disease, female, age, DMxtime, genderxtime)	Coeff (95% CI); p-value	-7.44 (-3.82, 11.07); <0.001	Female is significantly associated with lower WOMAC function score compared to males.
Jones, C. A., 2012	Low Quality	Sex	Function (WOMAC function rate of change from baseline)	Post-Op	376	Prognostic (TKA)	gender x time	random effects model fitted for WOMAC function scores (time, time-square, BMI 30.0-34.9kg/m ² , BMI≥35.0kg/m ² , DM, cardiac disease, female, age, DMxtime, genderxtime)	Coeff (95% CI); p-value	0.21 (0.07, 0.36); 0.005	rate of improvement from baseline was slower in females

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Kauppila, A. M., 2011	Moderate Quality	Sex	Function (self-reported functional recovery (WOMAC))	Post-Op	75	Prognostic (primary unilateral TKA due to OAK)	male gender	linear regression (age, male gender, presence of osteoporosis, WOMAC preop pain (centered, Wp=60), preop function of opposite knee)	Unstandardized linear regression coefficient (SE); pvalue	-12.0 (5.55); 0.04	Male gender would have decreased mean improvement in the WOMAC function score by 12.0mm
Langlois, J., 2015	Low Quality	Sex	Function (Active Knee Flexion)	Post-Op	460	Prognostic	Female vs male	Univariate mixed model analysis	Coefficient, SE	-1.0, 0.9	NS
Lin, J., 2009	Moderate Quality	Sex	Hospital for Special Surgery Score	1 years	60	PICO 8 Prognostic	Group 2 Female vs. Group 1 Male	Matched on age and BMI	mean difference(CI)	1.43(-3.21,2.41)	NS
Lin, J., 2009	Moderate Quality	Sex	Knee Extension	1 weeks	60	PICO 8 Prognostic	Group 2 Female vs. Group 1 Male	Matched on age and BMI	mean difference(CI)	0.38(-0.74,0.74)	NS
Lin, J., 2009	Moderate Quality	Sex	Knee Extension	2 weeks	60	PICO 8 Prognostic	Group 2 Female vs. Group 1 Male	Matched on age and BMI	mean difference(CI)	0.18(-0.06,0.66)	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lin, J., 2009	Moderate Quality	Sex	Knee Extension	1 years	60	PICO 8 Prognostic	Group 2 Female vs. Group 1 Male	Matched on age and BMI	mean difference(CI)	0.13(-0.15,0.35)	NS
Lin, J., 2009	Moderate Quality	Sex	Knee Flexion	1 weeks	60	PICO 8 Prognostic	Group 2 Female vs. Group 1 Male	Matched on age and BMI	mean difference(CI)	2.41(-8.71,0.71)	NS
Lin, J., 2009	Moderate Quality	Sex	Knee Flexion	2 weeks	60	PICO 8 Prognostic	Group 2 Female vs. Group 1 Male	Matched on age and BMI	mean difference(CI)	2.81(-8.51,2.51)	NS
Lin, J., 2009	Moderate Quality	Sex	Knee Flexion	1 years	60	PICO 8 Prognostic	Group 2 Female vs. Group 1 Male	Matched on age and BMI	mean difference(CI)	2.06(-5.05,3.05)	NS
Lin, J., 2009	Moderate Quality	Sex	Length of postop hospitalization	Discharge	60	PICO 8 Prognostic	Group 2 Female vs. Group 1 Male	Matched on age and BMI	mean difference(CI)	1.28(-2.2,2.8)	NS
Lin, J., 2009	Moderate Quality	Sex	ROM	1 weeks	60	PICO 8 Prognostic	Group 2 Female vs. Group 1 Male	Matched on age and BMI	mean difference(CI)	2.45(-8.81,0.81)	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lin, J., 2009	Moderate Quality	Sex	ROM	2 weeks	60	PICO 8 Prognostic	Group 2 Female vs. Group 1 Male	Matched on age and BMI	mean difference(CI)	2.83(-8.54,2.54)	NS
Lin, J., 2009	Moderate Quality	Sex	ROM	1 years	60	PICO 8 Prognostic	Group 2 Female vs. Group 1 Male	Matched on age and BMI	mean difference(CI)	2.07(-5.05,3.05)	NS
Lizaur, A., 1997	Moderate Quality	Sex	Function (Final Flexion)	Post-Op	74	Prognostic	unclear	Pearson or Spearman Correlation	p-value	0.41	NS
Lizaur, A., 1997	Moderate Quality	Sex	Function (Post op Flexion contracture)	Post-Op	74	Prognostic	unclear	Pearson or Spearman Correlation	p-value	0.22	NS
Lizaur-Utrilla, A., 2014	Low Quality	Sex	Adverse Event (Clinical Failure)	Post-Op	414	Prognostic	Female vs male	Logistic regression adjusted for age, BMI, sex, preop WOMAC function, preop SF-12 PCS, preop SF-12 MCS, charlson index, ASA score, preop KSS score, preop ROM, preop KSS function, Preop walking distance, Preop WOMAC pain	Adjusted OR, (CI), Adjusted P-value	1.50, (0.21-11.06), 0.653	NS
Lizaur-Utrilla, A., 2017	High Quality	Sex	Adverse Event (Revision)	Post-Op	119	Prognostic	unclear	Cox Proportional Hazards Regression adjusted for age, BMI	HR, 95% CI	1.7, (0.4, 6.8)	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Messieh, M., 1999	Low Quality	Sex	Adverse Event (Suspicion of Pulmonary Embolism)	Post-Op	124	Prognostic	male vs female (unclear direction)	chi square test	significance	>0.5	NS
Naylor, J. M., 2012	High Quality	Sex	Function (Recovery of Knee Flexion)	Post-Op	191	Prognostic	Low preop flexion compared to medium preop flexion compared to high preop flexion	Longitudinal data modeling using a MIXED method adjusted for age, sex, and BMI	P-value	0.27	NS
Naylor, J. M., 2012	High Quality	Sex	Function (Terminal Knee Extension Recovery)	Post-Op	191	Prognostic	Preop restricted terminal knee extension compared to proep non-restricted terminal knee extension	Longitudinal data modeling using a MIXED method adjusted for age, sex, and BMI	P-value	0.03	Men have a worse terminal knee extension than women postop

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Naylor, J. M., 2012	High Quality	Sex	Function (Oxford Knee Score)	Post-Op	191	Prognostic	Low preop flexion compared to medium preop flexion compared to high preop flexion	Longitudinal data modeling using a MIXED method adjusted for age, sex, and BMI	P-value	<.001	Men had a greater Oxford score than women post.
Naylor, J. M., 2012	High Quality	Sex	Function (Oxford Knee Score)	Post-Op	191	Prognostic	Preop restricted terminal knee extension compared to proep non-restricted terminal knee extension	Longitudinal data modeling using a MIXED method adjusted for age, sex, and BMI	P-value	<.001	Males had a significantly higher postop OKS score than women
Nazzal, M. I., 2012	Low Quality	Sex	Function (magnitude of change in ROM (degrees))	2 weeks	56	Prognostic (60+ years vs. below 60)	male vs. female	t-test			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Nazzal, M. I., 2012	Low Quality	Sex	Function (magnitude of change in ROM (degrees))	3 months	56	Prognostic (60+ years vs. below 60)	male vs. female	t-test			NS
Papakostidou, I., 2012	Low Quality	Sex	Function (KSS)	12 months	204	Prognostic	Male vs Female	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop KSS			NS
Papakostidou, I., 2012	Low Quality	Sex	Function (WOMAC Function)	12 months	204	Prognostic	Male vs Female	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	1.30, (-1.68-4.28), 0.4	NS
Papakostidou, I., 2012	Low Quality	Sex	Function (WOMAC Stiffness)	12 months	204	Prognostic	Male vs Female	Multivariate linear regression adjusted for gender, age, BMI, education, social support, residence, preop WOMAC,	coefficient, (CI), p-value	-0.15, (-0.52-0.23), 0.4	NS
Park, K. K., 2007	Moderate Quality	Sex	Function (Maximum Flexion)	12 months	207	Prognostic (All pts Korean)	male vs female	Correlation adjusted for BMI, weight, and type of implant			NS
Parsley, B. S., 2010	Low Quality	Sex	KSS - Function	Post-Op	395	PICO 8 Prognostic	G2 - Men vs. G1 - Women	none	p value	P<.001	Men had a higher KSS Function score postop (p<0.0001)
Parsley, B. S., 2010	Low Quality	Sex	KSS - Knee Score	Post-Op	395	PICO 8 Prognostic	G2 - Men vs. G1 - Women	none	p value	p<.001	Men had a higher KSS Knee score postop (p<0.0002)

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Parsley, B. S., 2010	Low Quality	Sex	ROM	Post-Op	395	PICO 8 Prognostic	G2 - Men vs. G1 - Women	none	p value	No statistical differences between the groups (p=0.7441)	No statistical differences between the groups (p=0.7441)
Peskun, C., 2012	Low Quality	Sex	Adverse Event (Myocardial Infarction)	Post-Op	156	Prognostic	Male compared to female	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.4, (0.07-2.01), 0.248	NS
Peskun, C., 2012	Low Quality	Sex	Adverse Event (Pneumonia)	Post-Op	156	Prognostic	Male compared to female	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0,-,0.998	NS
Peskun, C., 2012	Low Quality	Sex	Adverse Event (Prosthetic Infection)	Post-Op	156	Prognostic	Male compared to female	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.3, (0.02-3.37), 0.314	NS
Peskun, C., 2012	Low Quality	Sex	Adverse Event (Fat Embolism Syndrom)	Post-Op	156	Prognostic	Male compared to female	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0,-, 0.999	NS
Peskun, C., 2012	Low Quality	Sex	Adverse Event (DVT)	Post-Op	156	Prognostic	Male compared to female	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1.3, (0.39-4.14), 0.683	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Peskun, C., 2012	Low Quality	Sex	Adverse Event (Pulmonary Embolism)	Post-Op	156	Prognostic	Male compared to female	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	4.2, (0.37-48.2), 0.246	NS
Peskun, C., 2012	Low Quality	Sex	Adverse Event (Urinary Retention)	Post-Op	156	Prognostic	Male compared to female	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	0.5, (0.12-1.64), 0.228	NS
Peskun, C., 2012	Low Quality	Sex	Adverse Event (Superficial Infection)	Post-Op	156	Prognostic	Male compared to female	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1.5, (0.34-6.76), 0.59	NS
Peskun, C., 2012	Low Quality	Sex	Adverse Event (ICU Admission)	Post-Op	156	Prognostic	Male compared to female	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	2, (0.41-9.82), 0.393	NS
Peskun, C., 2012	Low Quality	Sex	Adverse Event (Readmission <30 days)	Post-Op	156	Prognostic	Male compared to female	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	1.4, (0.04-42.3), 0.859	NS
Peskun, C., 2012	Low Quality	Sex	Adverse Event (Revision Surgery)	Post-Op	156	Prognostic	Male compared to female	Multivariate logistic regression adjusted for age, gender, anaesthesia use, preop hypertension, diabetes, preop MI/CAD, preop COPD	OR, (CI), p-value,	4.1, (0.42-39.1), 0.224	NS
Robbins, S. M., 2014	Low Quality	Sex	Function (Timed Up and Go Test)	3 days	72	Prognostic	Male vs female	Step wise Multivariate linear regression adjusted for age, gender, BMI, pain severity, comorbidity, pain catastrophizing, strength			NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Robbins, S. M., 2014	Low Quality	Sex	Function (Timed Up and Go Test)	3 days	72	Prognostic		Point Biserial Correlation	Correlation Coefficient	-0.09	NS
Robbins, S. M., 2014	Low Quality	Sex	Function (WOMAC Function)	3 days	72	Prognostic	Male vs female	Step wise Multivariate linear regression adjusted for age, gender, BMI, pain severity, comorbidity, pain catastrophizing, strength			NS
Robbins, S. M., 2014	Low Quality	Sex	Function (WOMAC Function)	3 days	72	Prognostic		Point Biserial Correlation	Correlation Coefficient	-0.1	NS
Rossi, R., 2010	Moderate Quality	Sex	Adverse Event (Radiolucency Lines)	Post-Op	62	Prognostic	men vs. women	Multivariable Logistic Regression adjusted for age, sex, BMI, follow-up time, cement penetration, tibial slope, femoral flexion, frontal alignment, clinical, functional, total pre-op and post-op Knee Scores			NS
Schurman, D. J., 2005	Low Quality	Sex	Function (final change in ROM)	Post-Op	358	Prognostic (5 different types of prostheses: insall-burstein I, insall-burstein II, apollo, performance, ascent)	male vs female	linear model controlled for preop arc of motion	p-value	0.77	NS
Sharma, L., 1996	Moderate Quality	Sex	Function (SF-36 Physical Function 3mo postop)	3 months	47	Prognostic	unclear	Multiple regression adjusted for social support, education, and age	partial, significance	-0.28, 0.083	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Si, H. B., 2017	Moderate Quality	Sex	Adverse Event (Falls)	1 year	321	Prognostic	Female vs. Male (ref)	Binary Logistic Regression	OR, 95% CI	5.54, (1.17, 26.20)	Females are at significantly higher odds of falls @ 1 year postop
Si, H. B., 2017	Moderate Quality	Sex	Adverse Event (Falls)	2 years	350	Prognostic	Female vs. Male (ref)	Binary Logistic Regression	OR, 95% CI	1.65, (0.38, 7.09)	NS
Song, K., 2016	Low Quality	Sex	Adverse Event (Pulmonary Complications)	Post-Op	111	Prognostic	Male	Univariate analysis Chi-squared for entering into multivariate logistic regression	P-value	0.164	NS
Sullivan, M., 2009	High Quality	Sex	Function (Postop WOMAC Function)	Post-Op	75	Prognostic	continuous	Hierarchical regression analysis adjusted for age	Beta coefficient	0.09	NS
Worland, R. L., 1998	Low Quality	Sex	Function (Knee Flexion at 6 wks)	6 weeks	80	Prognostic	not specified	model included: sex, affected side, HSS score, Knee Flexion, Flexion Contracture	Multivariate logistic regression, Odds Ratio, P value	1.098, p=0.0853	NS
Yercan, H. S., 2006	Low Quality	Sex	Adverse Event (Knee Stiffness (<75 degree flexion after 10 days))	Post-Op	46	Prognostic (pts received early or late manipulation under anesthesia)	Male vs female	Correlation	p-value	>0.05	NS

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Zech, A., 2015	Low Quality	Sex	Function (Passive Knee ROM)	Discharge	64	Prognostic (Exercise Therapy)	male vs. female	Medical condition and gender included in model as factors; Baseline values, age, BMI, days after surgery, and exercise therapy dosage (duration and intensity) included as covariates	Analysis of Covariance, P-value, R ²	0.156, 0.082	NS
Zeni, J. A., Jr., 2010	Low Quality	Sex	walk with handrail	3 months	105	PICO 8 Prognostic	Proportion Female	none	p value	>.05	NS
Zeni, J. A., Jr., 2010	Low Quality	Sex	walk with handrail	2 years	105	PICO 8 Prognostic	Proportion Female	none	p value	>.05	NS
Zietek, P., 2015	Low Quality	Sex	Knee function score	2 weeks	62	PICO 8 Prognostic	g2 Women vs. g1 Men	none	p value		Score was lower in women than in men (p <.001)
Zietek, P., 2016	Low Quality	Sex	Function (Knee Society Score)	6 weeks	78	Prognostic	Male compared to female	Multiple linear regression adjusted for age, sex, and TNF-alpha concentrations	Beta Coefficient, (CI), P-value	0.28, (0.04-0.53), 0.024	Male sex is significantly associated with a higher postop KSS score compared to females.
Zietek, P., 2016	Low Quality	Sex	Function (KSS)	6 weeks	78	Prognostic	male vs female (ref)	multiple linear regression controlled for logTNF-alpha, age	regression coefficient B, 95% CI, pvalue	0.28, (0.04, 0.53), 0.024	Male is positively associated with 6 week postop KSS controlled for logTNF-alpha and age

Table 129: Timing

Reference Title	Quality	Risk Factor	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Lizaur, A., 1997	Moderate Quality	Timing	Function (Final Flexion)	Post-Op	74	Prognostic	Time of mobilization (continuous)	Pearson or Spearman Correlation	p-value	0.51	NS
Lizaur, A., 1997	Moderate Quality	Timing	Function (Final Flexion)	Post-Op	74	Prognostic	Time of weight bearing (continuous)	Pearson or Spearman Correlation	p-value	0.9	NS
Lizaur, A., 1997	Moderate Quality	Timing	Function (Post op Flexion contracture)	Post-Op	74	Prognostic	Time of mobilization (continuous)	Pearson or Spearman Correlation	p-value	0.78	NS
Lizaur, A., 1997	Moderate Quality	Timing	Function (Post op Flexion contracture)	Post-Op	74	Prognostic	Time of weight bearing (continuous)	Pearson or Spearman Correlation	p-value	0.84	NS

PICO 9: Postoperative Physical Therapy Programs

Study Quality Evaluation Tables

QE - Intervention - Observational

Study	Design	Participant Recruitment	Allocation	Confounding Variables	Follow-Up Length	Other Bias? (If retrospective comparative, mark Yes)	Inclusion	Strength
Hiyama, Y., 2016	☐	☒	☒	☒	☒	☐	Include	Low Quality
Naylor, J. M., 2017	☐	☒	☒	☒	☒	☒	Include	Low Quality
Warren, M., 2016	☐	☒	☒	☒	☒	☐	Include	Low Quality

QE - Intervention - Randomized

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Akbaba, Y. A., 2016	☒	☒	☒	☐	☒	☐	Include	Moderate Quality
Anneli, H, 2017	☒	☒	☐	☒	☒	☒	Include	High Quality
Artz, N., 2017	☒	☒	☐	☐	☒	☒	Include	Moderate Quality
Bade, M. J., 2017	☒	☒	☒	☒	☒	☒	Include	High Quality
Buhagiar, M. A., 2017	☒	☒	☐	☒	☒	☒	Include	Moderate Quality
Fransen, M., 2017	☒	☒	☐	☒	☒	☒	Include	High Quality
Han, A. S., 2015	☒	☒	☐	☒	☒	☐	Include	Moderate Quality
Hudakova, Z., 2016	☒	☒	☒	☒	☒	☒	Include	High Quality
Jin, C., 2018	☒	☒	☐	☒	☒	☒	Include	Moderate Quality
Kauppila, A. M., 2010	☒	☒	☐	☒	☒	☒	Include	Moderate Quality
Kramer, J. F., 2003	☒	☒	☐	☒	☒	☒	Include	Moderate Quality

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Levine, M., 2013	●	●	○	○	●	◐	Include	Moderate Quality
Madsen, M., 2013	●	●	◐	●	●	●	Include	High Quality
Moffet, H., 2015	●	◐	●	◐	○	○	Include	Moderate Quality
Piqueras, M., 2013	●	◐	○	●	◐	◐	Include	Moderate Quality
Russo, L. R., 2017	●	●	○	●	●	○	Include	Moderate Quality
Vuorenmaa, M., 2014	●	●	○	●	●	○	Include	Moderate Quality

Summary of Findings

Figure 42: Summary of Findings-PICO 9 part 1: Group PT vs No Group PT

	High Quality	Moderate Quality	Low Quality
↑ Better Outcomes ↓ Worse Outcomes • Not Significant	Fransen, M., 2017	Kaupplia, A. M., 2010	Artz, N., 2017 Hiyama, Y., 2016
Complications			
Adverse Event(TKA Related Readmission)	•		
Adverse Event(Total # of Adverse Events)	•		
Adverse Event(Death)	•		
Composite			
Other(Self-efficacy for Rehabilitation)			•
Other(Aberdeen Measures of Impairment, Activity Limitation, and Participation Restriction)			•
Other(Measure Yourself Medical Outcome Profile)		↓	
Function(WOMAC - Total)	•		
Function			
Function(15m Walk Test)		•	
Function(50-foot Walk Speed)	•		
Function(Active Range of Motion (higher range value))		•	
Function(Active Range of Motion (lower range value))		•	
Function(Hamstring/Quadriceps Ratio)		•	
Function(Knee Extension ROM)	•		↑
Function(Knee Extension Strength)	•		
Function(Knee Flexion ROM)	•		↑
Function(Knee Flexion Strength)	•		
Function(Lower Extremity Functional Scale)		↑	
Function(Peak Torque Extension)		•	
Function(Quadriceps Strength)			↑
Function(Relative Peak Torque Extension)		•	
Function(Relative Peak Torque Flexion)		•	
Function(SF-12 Physical Functioning)	•		
Other(KOOS - Sports & Rec)			•
Function(Activities-specific Balance Confidence Scale)			↓
Other(KOOS - ADLs)			•
Function(Stair Power)	•		
Function(Stair Test - down)		•	
Function(Stair Test - Up)		•	
Function(Timed Up and Go)			•
Function(WOMAC - Stiffness)		•	
Function(WOMAC - Function)		•	
Function(WOMAC - Physical Function)	•		
Other			
Other(KOOS - Symptoms)			↑
Other(KOOS - QoL)			↑
Other(Length of Hospital Stay)			↑
Other(SF-12 Mental Health)	•		
Other(UCLA Activity Score)		•	
Other(15-D score)		•	
Pain			
Pain(WOMAC - Pain)	•	•	
Pain(VAS - Pain)			•
Pain(KOOS - Pain)			•
Pain(Overall pain rating in last 24 hrs)			↑

Figure 43: Summary of Findings-PICO 9 part 2: Group Pt vs Home Pt

	High Quality
	Madsen, M., 2013
↑ Better Outcomes	
↓ Worse Outcomes	
● Not Significant	
Composite	
Other(Oxford Knee Score)	●
Function	
(SF-36 - Physical Function)	●
Function(30-sec Sit-to-stand)	●
Function(5-times Sit-to-stand)	●
Function(Asymmetry Leg Extensor Power, W/kg)	↓
Function(Balance)	●
Function(ROM)	●
Function(Peak Leg Extensor Power, non-operated leg)	●
Function(Peak Leg Extensor Power, operated leg)	●
Function(Walking Velocity)	●
Other	
Other(EQ-5D)	●
Pain	
Pain(VAS - Pain)	●

Figure 44: Summary of Findings-PICO 9 part 3: Clinic based PT vs Home PT

	Moderate Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Kramer, J. F., 2003
Composite	
Other(WOMAC - Total)	●
Other(Knee Society Clinical Rating Scale)	●
Function	
Function(30-Second Stair Test)	●
Function(6-minute Walk Test)	●
Function(Knee Flexion ROM)	●
Function(WOMAC - Function)	●
Other	
Other(SF-36)	●
Pain	
Pain(WOMAC - Pain)	●
Pain(Pain Scale of Knee Society Clinical Rating Scale)	●

Figure 45: Summary of Findings-PICO 9 part 4: Home PT vs No Home PT

	High Quality Moderate Quality			
	Anneli, H, 2017	Han, A. S., 2015	Vuorenmaa, M., 2014	Levine, M., 2013
↑ Better Outcomes ↓ Worse Outcomes • Not Significant				
Complications				
Adverse Event(Manipulation under Anesthesia)		•		
Adverse Event(TKR-related Re-admissions)		•		
Composite				
Other(WOMAC)				•
Function				
Function(50 foot Walk Time)		•		
Function(Active Extension Deficit)			•	
Function(Active Flexion)			•	
Function(Cadence (Maximal))	↑			
Function(Cadence (Normal))	•			
Function(Extension)				•
Function(Flexion)				•
Function(Get-Up-and-Go Test)				•
Function(Isometric Strength of Operated Knee - Extension)			•	
Function(Isometric Strength of Operated Knee - Flexion)			↑	
Function(Knee ROM - Extension)		•		
Function(Knee ROM - Flexion)		•		
Function(KSS - Function)				•
Function(Maximal Walking Speed)			↑	
Function(Muscle Strength - Knee Extension)	•			
Function(Muscle Strength - Knee Flexion)	↑			
Function(Passive Extension Deficit)			•	
Function(Passive Flexion)			•	
Function(SF-36 - PCS)			•	
Function(Timed Up and Go Test)			•	
Function(Velocity (Maximal))	↑			
Function(Velocity (Normal))	•			
Function(WOMAC - Functional Difficulty)			•	
Function(WOMAC - Stiffness)			•	
Function(WOMAC - Physical Function)		•		
Other				
Other(SF-36 - MCS)			•	
Pain				
Pain(WOMAC - Pain)		•	•	
Pain(KSS - Pain)				•
Pain(Knee Pain During Loading - VAS)	•			

Figure 46: Summary of Findings-PICO 9 part 5: Supervised PT vs Home PT

	High Quality
	Hudakova, Z., 2016
↑ Better Outcomes	
↓ Worse Outcomes	
● Not Significant	
Function	
Function(SF-36 Physical Function)	●
Function(SF-36 Physical Role)	↑
Other	
Other(SF-36 General Health)	●
Other(SF-36 Vitality)	↑
Other(SF-36 Mental Health)	●
Other(SF-36 Emotional Role)	●
Other(SF-36 Social Function)	●
Pain	
Pain(VAS Pain)	↑
Pain(SF-36 Bodily Pain)	↑

Figure 47: Summary of Findings-PICO 9 part 6: Supervised PT and Home PT vs Supervised PT

	Moderate Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Moffet, H., 2015
Complications	
Adverse Event(Death)	●
Adverse Event(Pain in Operated Knee)	●
Adverse Event(Patients with Adverse Events)	●
Adverse Event(Adverse Events Related to Study Therapy)	●
Adverse Event(Bruising in Operated Knee)	●
Adverse Event(Hospitalization)	●
Adverse Event(Fall with Minor Symptoms)	●
Adverse Event(Signs of Infection in Operated Knee)	●
Adverse Event(Mobilization Under Anesthesia)	●
Adverse Event(Swelling in Operated Knee)	●
Adverse Event(Hip Fracture Due to Fall)	●
Adverse Event(Thrombophlebitis)	●
Adverse Event(Problems with Wound-healing in Operated Knee)	●
Composite	
Other(WOMAC - Total)	●
Function	
Other(WOMAC - Stiffness)	●
Function(Isometric Strength - at 30 degrees of flexion)	●
Function(Isometric Strength - at 60 degrees of flexion)	●
Function(Isometric Strength - in extension at 30 degrees of flexion)	●
Function(Isometric Strength - In extension at 60 degrees of flexion)	●
Other(KOOS - ADL)	●
Function(ROM - Extension)	●
Function(ROM - Flexion)	●
Function(Six-minute Walk Test)	●
Function(Timed Stair Test)	●
Other(KOOS - Sports and Rec Activities)	●
Function(WOMAC - Function)	●
Other	
Other(KOOS - QoL)	●
Other(KOOS - Sympoms)	●
Pain	
Pain(WOMAC - Pain)	●
Pain(KOOS - Pain)	●

Figure 48: Summary of Findings-PICO 9 part 7: Inpatient PT and Home PT vs Home PT

	Moderate Quality
	Buhagiar, M. A., 2017
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Complications	
Adverse Event(Readmission)	●
Adverse Event(ED Visits)	●
Adverse Event(Manipulations Under Anesthetic)	●
Composite	
Other(Oxford Knee Score)	●
Other(EuroQol Group 5-Dimension (EQ-5D) Descriptive Index)	●
Other(KOOS)	●
Function	
Function(15m Walk Test)	●
Function(6-minute Walk Test)	●
Function(Knee Flexion ROM >= 100 degrees)	●
Other	
Other(EQ-5D Visual Analog Scale)	●
Other(Outpatient PT Sessions)	●
Other(Time to Return to Work)	●
Other(Patient Satisfaction with Rehab)	↑

Figure 49: Summary of Findings-PICO 9 part 8: Inpatient PT vs No Inpatient PT

	Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Naylor, J. M., 2017
Composite	
Other(Median Oxford Knee Score)	●
Other	
Other(Length of Stay)	●
Other(Patients w/time off work >6wks)	●
Other(EuroQoL Visual Analogue Scale)	↓

Figure 50: Summary of Findings-PICO 9 part 9: Outpatient PT vs Home and Outpatient PT

	Low Quality
	Warren, M., 2016
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Complications	
Adverse Event(Manipulation under Anesthesia)	●
Function	
Function(KOOS - ADL)	●
Function(KOOS - Symptoms)	●
Function(Six Minute Walk Test)	●
Function(Meeting ROM Goal of 110 degress Flexion)	●
Function(Meeting ROM Goal of 0 degress Extension)	●
Other	
Other(KOOS - QoL)	●
Pain	
Pain(KOOS - Pain)	●

Figure 11: Summary of Findings-PICO 10 part 3: High Intensity PT vs No High Intensity PT

		High Quality	Moderate Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Bade, M. J., 2017 Akbaba, Y. A., 2016		
Composite			
Other(WOMAC)	●		
Function			
Function(WOMAC - Function)		↑	
Function(6-minute Walk Test)	●		
Function(Quadriceps Strength)	●		
Function(WOMAC - Stiffness)		↑	
Function(Knee Extension)	●		
Function(Knee Flexion)	●		
Function(Timed Up and Go Test)	●	↑	
Function(Stair Climbing Test)	●	↑	
Function(Hamstrings Strength)	●		
Function(Quad Activation)	●		
Function(Physical Activity Scale for the Elderly)	↑		
Function(SF-12 Physical Component)	↑		
Function(Single Leg Stance (Right Leg))		↑	
Function(Single Leg Stance (Left Leg))		↑	
Function(Cadence)		●	
Other			
Other(SF-12 Mental Component)	↓		
Pain			
Pain(WOMAC - Pain)		↑	

Figure 51: Summary of Findings-PICO 9 part 12: Virtual PT vs Non-virtual PT

	Moderate Quality		
	Piqueras, M., 2013	Jin, C., 2018	Russo, L. R., 2017
↑ Better Outcomes ↓ Worse Outcomes • Not Significant			
Complications			
Adverse Event(Drop-out due to Joint Stiffness and/or Surgical Wound Complications)	●		
Composite			
Function(KSS)			↑
Function(WOMAC)		↑	↑
Function			
Function(Active Knee Extension)	↑		
Function(Active Knee Flexion)	●		
Function(Days Needed to Reach 60 degrees ROM)		↑	
Function(Days Needed to Reach 90 degrees ROM)		↑	
Function(ROM)		↑	
Function(Hamstring Strength)	●		
Function(Hospital for Special Surgery)		↑	
Function(Quadriceps Strength)	↑		
Function(SF-36 - Physical)			●
Function(Timed Get-up-and-go)	↓		
Function(VAS)			↑
Function(WOMAC - Stiffness)	●		
Function(WOMAC - Function)	●		
Other			
Other(SF-36 - Mental)			●
Other(Tampa Scale of Kinesiophobia)			↑
Other(Beck Depression Inventory)			↑
Other(State-Trait Anxiety Inventory)			↑
Pain			
Pain(WOMAC - Pain)	●		
Pain(VAS - Pain)	●	↑	

Detailed Data Tables

Table 130: PICO 9 part 1- Group PT vs No Group PT: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Fransen, M., 2017	High Quality	Adverse Event(TKA Related Readmission)	12 months	212	210	Group Exercise Program after 6wk Home Program	Usual Care	RR	7.08%	6.19%	1.14(0.56,2.34)	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Adverse Event(Total # of Adverse Events)	12 months	212	210	Group Exercise Program after 6wk Home Program	Usual Care	RR	9.43%	8.10%	1.17(0.63,2.16)	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Adverse Event(Death)	12 months	212	210	Group Exercise Program after 6wk Home Program	Usual Care	RR	0.47%	0.48%	0.99(0.06,15.73)	Not Significant (P-value>.05)

Table 131: PICO 9 part 1- Group PT vs No Group PT: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Artz, N., 2017	Moderate Quality	Other(Self-efficacy for Rehabilitation)	2 weeks	20	19	Postop Group PT	Usual Care (Control)	MeanDiff	90.2(20.10)	91.2(16.90)	-1(-12.63,10.63)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(Self-efficacy for Rehabilitation)	3 months	19	14	Postop Group PT	Usual Care (Control)	MeanDiff	108.7(13.00)	99.9(23.50)	8.8(-4.83,22.43)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(Self-efficacy for Rehabilitation)	6 months	21	15	Postop Group PT	Usual Care (Control)	MeanDiff	110.7(10.70)	103.8(18.30)	6.9(-3.43,17.23)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(Aberdeen Measures of Impairment, Activity Limitation, and Participation Restriction)	2 weeks	20	19	Postop Group PT	Usual Care (Control)	MeanDiff	18.3(5.10)	20(4.40)	-1.7(-4.69,1.29)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(Aberdeen Measures of Impairment, Activity Limitation, and Participation Restriction)	3 months	19	14	Postop Group PT	Usual Care (Control)	MeanDiff	11.5(4.20)	13.9(6.10)	-2.4(-6.11,1.31)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(Aberdeen Measures of Impairment, Activity Limitation, and Participation Restriction)	6 months	21	15	Postop Group PT	Usual Care (Control)	MeanDiff	10.9(3.10)	15.4(9.80)	-4.5(-9.63,0.63)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(Measure Yourself Medical Outcome Profile)	6 months	21	15	Postop Group PT	Usual Care (Control)	MeanDiff	1.9(1.40)	2.4(1.30)	-0.5(-1.39,0.39)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Artz, N., 2017	Moderate Quality	Other(Measure Yourself Medical Outcome Profile)	6 weeks	20	19	Postop Group PT	Usual Care (Control)	MeanDiff	3.2(0.80)	3.7(0.70)	-0.5(-0.97,-0.03)	Treatment 2 Significant (P-value<.05)
Artz, N., 2017	Moderate Quality	Other(Measure Yourself Medical Outcome Profile)	3 months	19	14	Postop Group PT	Usual Care (Control)	MeanDiff	1.9(1.30)	2.8(0.90)	-0.9(-1.65,-0.15)	Treatment 2 Significant (P-value<.05)
Kauppila, A. M., 2010	Moderate Quality	Function(WOMAC - total)	2 months	41	40	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(WOMAC - total)	6 months	36	39	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(WOMAC - total)	12 months	36	39	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 132: PICO 9 part 1- Group PT vs No Group PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Artz, N., 2017	Moderate Quality	Function(Lower Extremity Functional Scale)	2 weeks	20	19	Postop Group PT	Usual Care (Control)	MeanDiff	26.1(11.50)	30.1(13.40)	-4(-11.86,3.86)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Function(Lower Extremity Functional Scale)	3 months	19	14	Postop Group PT	Usual Care (Control)	MeanDiff	55.8(15.60)	48.8(17.40)	7(-4.50,18.50)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Function(Lower Extremity Functional Scale)	6 months	21	15	Postop Group PT	Usual Care (Control)	MeanDiff	57.8(15.20)	45(20.80)	12.8(0.43,25.17)	Treatment 1 Significant (P-value<.05)
Fransen, M., 2017	High Quality	Function(SF-12 Physical Functioning)	6 weeks	195	193	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	36.8(.)	35.6(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(50-foot Walk Speed)	6 weeks	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	1.27(.)	1.27(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(WOMAC - Physical Function)	6 weeks	195	193	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	22.5(.)	22.5(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(SF-12 Physical Functioning)	6 months	195	193	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	45.8(.)	44.1(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(WOMAC - Physical Function)	6 months	195	193	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	11.7(.)	12.8(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Fransen, M., 2017	High Quality	Function(50-foot Walk Speed)	6 months	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	1.58(.)	1.55(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(SF-12 Physical Functioning)	12 months	195	193	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	43.2(.)	42.7(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(50-foot Walk Speed)	12 months	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	1.6(.)	1.6(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(WOMAC - Physical Function)	12 months	195	193	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	10.4(.)	11.3(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Knee Extension ROM)	6 weeks	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	-7.3(.)	-6.9(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Knee Flexion ROM)	6 weeks	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	96.5(.)	95.6(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Knee Flexion Strength)	6 weeks	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	34.2(.)	36.5(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Knee Extension Strength)	6 weeks	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	53.8(.)	54.2(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Fransen, M., 2017	High Quality	Function(Stair Power)	6 weeks	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	184(.)	183(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Knee Flexion Strength)	6 months	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	41.8(.)	39.7(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Knee Extension ROM)	6 months	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	-2.9(.)	-3.1(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Knee Flexion ROM)	6 months	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	107.3(.)	106.2(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Knee Extension Strength)	6 months	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	70.5(.)	74.2(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Stair Power)	6 months	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	267(.)	256(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Knee Extension ROM)	12 months	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	-2.7(.)	-1.6(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Knee Flexion ROM)	12 months	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	109.6(.)	109.2(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Fransen, M., 2017	High Quality	Function(Knee Flexion Strength)	12 months	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	44.3(.)	42.8(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Knee Extension Strength)	12 months	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	74.6(.)	77.2(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Function(Stair Power)	12 months	195	188	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	279(.)	278(.)	NA	Not Significant (P-value>.05)
Hiyama, Y., 2016	Low Quality	Function(Timed Up and Go)	Post-Op	227	203	Group Exercise PT Program	Individualized Exercise Program	MeanDiff	15.8(4.70)	16.2(5.80)	-0.4(-1.41,0.61)	Not Significant (P-value>.05)
Hiyama, Y., 2016	Low Quality	Function(Quadriceps Strength)	Post-Op	227	203	Group Exercise PT Program	Individualized Exercise Program	MeanDiff	0.5(0.13)	0.3(0.17)	0.2(0.17, 0.23)	Treatment 1 Significant (P-value<.05)
Hiyama, Y., 2016	Low Quality	Function(Knee Flexion ROM)	Discharge	227	203	Group Exercise PT Program	Individualized Exercise Program	MeanDiff	94(6.50)	86.2(9.90)	7.8(6.20, 9.40)	Treatment 1 Significant (P-value<.05)
Hiyama, Y., 2016	Low Quality	Function(Knee Extension ROM)	Discharge	227	203	Group Exercise PT Program	Individualized Exercise Program	MeanDiff	-0.8(2.20)	-6(5.30)	5.2(4.42, 5.98)	Treatment 1 Significant (P-value<.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Stair Test - Up)	2 months	36	35	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	15.1(7.70)	13.6(7.30)	1.5(-1.99,4.99)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(WOMAC - stiffness)	2 months	41	40	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(WOMAC - function)	2 months	41	40	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Kauppila, A. M., 2010	Moderate Quality	Function(15m Walk Test)	2 months	36	39	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	16.2(4.00)	16.7(4.00)	-0.5(-2.31,1.31)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(15m Walk Test)	6 months	36	39	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	13.4(2.40)	13.3(2.50)	0.1(-1.01,1.21)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(WOMAC - stiffness)	6 months	36	39	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(WOMAC - function)	6 months	36	39	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Stair Test - Up)	6 months	36	36	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	11(5.60)	9.6(3.40)	1.4(-0.74,3.54)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(15m Walk Test)	12 months	36	39	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	13.8(3.60)	13.7(2.90)	0.1(-1.39,1.59)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Stair Test - Up)	12 months	36	34	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	10.3(3.70)	10(4.10)	0.3(-1.53,2.13)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(WOMAC - stiffness)	12 months	36	39	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(WOMAC - function)	12 months	36	39	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Stair Test - down)	2 months	36	35	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	16.5(9.50)	14.6(7.60)	1.9(-2.10,5.90)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Relative Peak Torque Extension)	2 months	25	26	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	0.86(0.36)	0.98(0.38)	-0.12(-0.32,0.08)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Kauppila, A. M., 2010	Moderate Quality	Function(Active Range of Motion (lower range value))	2 months	41	40	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	8(5.00)	8(4.00)	0(-1.97,1.97)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Peak Torque Extension)	2 months	34	33	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	68.4(24.10)	77.8(31.00)	-9.4(-22.72,3.92)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Active Range of Motion (higher range value))	2 months	41	40	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	97(14.00)	94(12.00)	3(-2.67,8.67)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Hamstring/Quadriceps Ratio)	2 months	31	32	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	0.85(0.27)	0.84(0.31)	0.01(-0.13,0.15)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Relative Peak Torque Flexion)	2 months	25	26	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	0.69(0.21)	0.79(0.26)	-0.1(-0.23,0.03)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Active Range of Motion (lower range value))	6 months	36	38	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	6(3.00)	6(3.00)	0(-1.37,1.37)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Hamstring/Quadriceps Ratio)	6 months	29	33	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	0.74(0.24)	0.77(0.22)	-0.03(-0.15,0.09)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Peak Torque Extension)	6 months	29	33	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	88.8(25.00)	93.8(30.40)	-5(-18.80,8.80)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Active Range of Motion (higher range value))	6 months	36	38	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	105(12.00)	103(11.00)	2(-3.25,7.25)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Relative Peak Torque Extension)	6 months	28	29	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	1.15(0.44)	1.14(0.39)	0.01(-0.21,0.23)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Kauppila, A. M., 2010	Moderate Quality	Function(Relative Peak Torque Flexion)	6 months	28	29	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	0.8(0.27)	0.83(0.24)	-0.03(-0.16,0.10)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Stair Test - down)	6 months	36	36	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	10.7(5.00)	10.5(4.10)	0.2(-1.91,2.31)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Peak Torque Extension)	12 months	29	32	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	98(28.10)	99.2(39.10)	-1.2(-18.17,15.77)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Active Range of Motion (lower range value))	12 months	36	38	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	5(4.00)	4(4.00)	1(-0.82,2.82)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Relative Peak Torque Flexion)	12 months	29	31	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	0.85(0.30)	0.78(0.21)	0.07(-0.06,0.20)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Active Range of Motion (higher range value))	12 months	36	38	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	107(11.00)	105(9.00)	2(-2.59,6.59)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Hamstring/Quadriceps Ratio)	12 months	29	31	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	0.7(0.18)	0.79(0.71)	-0.09(-0.35,0.17)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Stair Test - down)	12 months	36	33	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	10.7(5.30)	10.7(5.00)	0(-2.43,2.43)	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Function(Relative Peak Torque Extension)	12 months	29	32	Multidisciplinary Rehab Program	Conventional Care	MeanDiff	1.23(0.43)	1.21(0.49)	0.02(-0.21,0.25)	Not Significant (P-value>.05)

Table 133: PICO 9 part 1- Group PT vs No Group PT: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Artz, N., 2017	Moderate Quality	Other(KOOS - Sports & Rec)	2 weeks	20	19	Postop Group PT	Usual Care (Control)	MeanDiff	16.2(25.90)	12.9(11.90)	3.3(-9.25,15.85)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(KOOS - Sports & Rec)	3 months	19	14	Postop Group PT	Usual Care (Control)	MeanDiff	39.2(29.40)	27.9(20.20)	11.3(-5.63,28.23)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(KOOS - Sports & Rec)	6 months	21	15	Postop Group PT	Usual Care (Control)	MeanDiff	46.3(35.40)	37.1(25.70)	9.2(-10.76,29.16)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(UCLA Activity Score)	2 weeks	20	19	Postop Group PT	Usual Care (Control)	MeanDiff	2.8(0.80)	2.5(0.80)	0.3(-0.20,0.80)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Function(Activities-specific Balance Confidence Scale)	3 months	19	14	Postop Group PT	Usual Care (Control)	MeanDiff	84.3(15.20)	79(19.40)	5.3(-6.95,17.55)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(UCLA Activity Score)	3 months	19	14	Postop Group PT	Usual Care (Control)	MeanDiff	4.9(1.70)	4.3(1.10)	0.6(-0.36,1.56)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(UCLA Activity Score)	6 months	21	15	Postop Group PT	Usual Care (Control)	MeanDiff	5.2(1.50)	4.5(1.90)	0.7(-0.46,1.86)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Function(Activities-specific Balance Confidence Scale)	6 months	21	15	Postop Group PT	Usual Care (Control)	MeanDiff	84.1(17.30)	80.7(19.80)	3.4(-9.06,15.86)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(KOOS - ADLs)	2 weeks	20	19	Postop Group PT	Usual Care (Control)	MeanDiff	54.4(17.60)	60.8(19.80)	-6.4(-18.18,5.38)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(KOOS - QoL)	2 weeks	20	19	Postop Group PT	Usual Care (Control)	MeanDiff	23.8(17.60)	16.7(7.50)	7.1(-1.32,15.52)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Artz, N., 2017	Moderate Quality	Other(KOOS - ADLs)	3 months	19	14	Postop Group PT	Usual Care (Control)	MeanDiff	81.2(15.90)	76.1(18.50)	5.1(-6.94,17.14)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(KOOS - ADLs)	6 months	21	15	Postop Group PT	Usual Care (Control)	MeanDiff	79.6(23.40)	73.5(26.40)	6.1(-10.59,22.79)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(KOOS - QoL)	6 months	21	15	Postop Group PT	Usual Care (Control)	MeanDiff	61.5(32.30)	45.1(29.20)	16.4(-3.83,36.63)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(KOOS - Symptoms)	3 months	19	14	Postop Group PT	Usual Care (Control)	MeanDiff	59.6(16.40)	54.8(16.90)	4.8(-6.72,16.32)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(KOOS - Symptoms)	6 months	21	15	Postop Group PT	Usual Care (Control)	MeanDiff	58.4(18.90)	56.7(14.30)	1.7(-9.15,12.55)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Other(KOOS - QoL)	3 months	19	14	Postop Group PT	Usual Care (Control)	MeanDiff	52.4(27.10)	36.1(17.30)	16.3(1.11,31.49)	Treatment 1 Significant (P-value<.05)
Artz, N., 2017	Moderate Quality	Other(KOOS - Symptoms)	2 weeks	20	19	Postop Group PT	Usual Care (Control)	MeanDiff	52.2(13.90)	42.9(10.60)	9.3(1.57,17.03)	Treatment 1 Significant (P-value<.05)
Artz, N., 2017	Moderate Quality	Function(Activities-specific Balance Confidence Scale)	2 weeks	20	19	Postop Group PT	Usual Care (Control)	MeanDiff	43.7(23.30)	58.4(21.10)	-14.7(-28.64,-0.76)	Treatment 2 Significant (P-value<.05)
Fransen, M., 2017	High Quality	Other(SF-12 Mental Health)	6 weeks	195	193	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	49.8(.)	50.5(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Other(SF-12 Mental Health)	6 months	195	193	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	53.6(.)	54.4(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Fransen, M., 2017	High Quality	Other(SF-12 Mental Health)	12 months	195	193	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	53.1(.)	54.3(.)	NA	Not Significant (P-value>.05)
Hiyama, Y., 2016	Low Quality	Other(Length of Hospital Stay)	Discharge	227	203	Group Exercise PT Program	Individualized Exercise Program	MeanDiff	6.2(0.40)	7.9(0.80)	-1.7(-1.82,-1.58)	Treatment 1 Significant (P-value<.05)
Kauppila, A. M., 2010	Moderate Quality	Other(15-D score)	2 months	41	40	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Other(15-D score)	6 months	36	39	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Other(15-D score)	12 months	36	39	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 134: PICO 9 part 1- Group PT vs No Group PT: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Artz, N., 2017	Moderate Quality	Pain(KOOS - Pain)	2 weeks	20	19	Postop Group PT	Usual Care (Control)	MeanDiff	46.7(13.50)	52.9(18.10)	-6.2(-16.26,3.86)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Pain(KOOS - Pain)	3 months	19	14	Postop Group PT	Usual Care (Control)	MeanDiff	74.1(19.90)	69.1(19.50)	5(-8.58,18.58)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Pain(KOOS - Pain)	6 months	21	15	Postop Group PT	Usual Care (Control)	MeanDiff	78.6(25.90)	70.9(27.10)	7.7(-9.93,25.33)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Pain(VAS - Pain)	2 weeks	20	19	Postop Group PT	Usual Care (Control)	MeanDiff	5.3(2.50)	5.7(2.20)	-0.4(-1.88,1.08)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Pain(VAS - Pain)	3 months	19	14	Postop Group PT	Usual Care (Control)	MeanDiff	3.5(3.10)	3.6(2.20)	-0.1(-1.91,1.71)	Not Significant (P-value>.05)
Artz, N., 2017	Moderate Quality	Pain(VAS - Pain)	6 months	21	15	Postop Group PT	Usual Care (Control)	MeanDiff	2.9(3.40)	3.9(3.60)	-1(-3.33,1.33)	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Pain(WOMAC - Pain)	6 weeks	195	193	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	7.2(.)	7.4(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Pain(WOMAC - Pain)	6 months	195	193	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	3.2(.)	3.5(.)	NA	Not Significant (P-value>.05)
Fransen, M., 2017	High Quality	Pain(WOMAC - Pain)	12 months	195	193	Group Exercise Program after 6wk Home Program	Usual Care	Author Reported	2.6(.)	2.5(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Hiyama, Y., 2016	Low Quality	Pain(Overall pain rating in last 24 hrs)	Discharge	227	203	Group Exercise PT Program	Individualized Exercise Program	MeanDiff	2.1(1.40)	3.7(1.70)	-1.6(-1.90,-1.30)	Treatment 1 Significant (P-value<.05)
Kauppila, A. M., 2010	Moderate Quality	Pain(WOMAC - pain)	2 months	41	40	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Pain(WOMAC - pain)	6 months	36	39	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kauppila, A. M., 2010	Moderate Quality	Pain(WOMAC - pain)	12 months	36	39	Multidisciplinary Rehab Program	Conventional Care	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 135: PICO 9 part 2- Group Pt vs Home Pt: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Madsen, M., 2013	High Quality	Other(Oxford Knee Score)	3 months	36	34	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	Author Reported	7.9(5.90)	. %	.(,.)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Other(Oxford Knee Score)	6 months	36	32	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	10.5(7.50)	9.7(8.50)	0.8(-3.03,4.63)	Not Significant (P-value>.05)

Table 136: PICO 9 part 2- Group Pt vs Home Pt: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Madsen, M., 2013	High Quality	(SF-36 - Physical Function)	3 months	36	34	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	16.8(14.20)	18(16.60)	-1.2(-8.46,6.06)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	(SF-36 - Physical Function)	6 months	36	32	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	22.6(19.40)	19.5(19.40)	3.1(-6.14,12.34)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(Peak Leg Extensor Power, non-operated leg)	3 months	36	34	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	0.13(0.35)	0.15(0.20)	-0.02(-0.15,0.11)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(30-sec Sit-to-stand)	3 months	36	34	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	3.7(3.60)	3.5(2.60)	0.2(-1.27,1.67)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(Asymmetry Leg Extensor Power, W/kg)	3 months	36	34	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	-0.46(0.47)	-0.31(0.32)	-0.15(-0.34,0.04)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(Peak Leg Extensor Power, operated leg)	3 months	36	34	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	0.59(0.44)	0.45(0.36)	0.14(-0.05,0.33)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(5-times Sit-to-stand)	3 months	36	34	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	-2.6(2.70)	-3.7(4.00)	1.1(-0.51,2.71)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(ROM)	3 months	36	34	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	13.4(12.20)	13.3(10.50)	0.1(-5.22,5.42)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Madsen, M., 2013	High Quality	Function(Balance)	3 months	36	34	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	0.2(3.90)	1.5(4.80)	-1.3(-3.36,0.76)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(Balance)	6 months	36	32	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	0.2(3.10)	0.9(4.70)	-0.7(-2.62,1.22)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(30-sec Sit-to-stand)	6 months	36	32	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	5(4.00)	4(3.20)	1(-0.71,2.71)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(Peak Leg Extensor Power, non-operated leg)	6 months	36	32	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	0.13(0.33)	0.19(0.34)	-0.06(-0.22,0.10)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(ROM)	6 months	36	32	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	19.8(14.70)	17.3(13.00)	2.5(-4.08,9.08)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(5-times Sit-to-stand)	6 months	36	32	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	-3.5(2.60)	-4.8(3.70)	1.3(-0.24,2.84)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(Peak Leg Extensor Power, operated leg)	6 months	36	32	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	0.75(0.39)	0.6(0.36)	0.15(-0.03,0.33)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(Walking Velocity)	3 months	36	34	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	0.32(0.21)	0.3(0.20)	0.02(-0.08,0.12)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Madsen, M., 2013	High Quality	Function(Walking Velocity)	6 months	36	32	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	0.4(0.22)	0.36(0.22)	0.04(-0.06,0.14)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Function(Asymmetry Leg Extensor Power, W/kg)	6 months	36	32	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	-0.61(0.44)	-0.41(0.38)	-0.2(-0.39,-0.01)	Treatment 2 Significant (P-value<.05)

Table 137: PICO 9 part 2- Group Pt vs Home Pt: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Madsen, M., 2013	High Quality	Other(EQ-5D)	3 months	36	34	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	0.09(0.13)	0.09(0.15)	0(-0.07,0.07)	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Other(EQ-5D)	6 months	36	32	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	MeanDiff	0.13(0.12)	0.1(0.20)	0.03(-0.05,0.11)	Not Significant (P-value>.05)

Table 138: PICO 9 part 2- Group Pt vs Home Pt: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Madsen, M., 2013	High Quality	Pain(VAS - Pain)	3 months	36	34	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Madsen, M., 2013	High Quality	Pain(VAS - Pain)	6 months	36	32	Group-based Program plus Home Exercises	Control (Home Exercises and 1-2 PT visit)	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 139: PICO 9 part 3- Clinic based PT vs Home PT: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Kramer, J. F., 2003	Moderate Quality	Other(WOMAC - Total)	12 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Other(Knee Society Clinical Rating Scale)	12 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Other(Knee Society Clinical Rating Scale)	52 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Other(WOMAC - Total)	52 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Other(SF-36)	12 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Other(SF-36)	52 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 140: PICO 9 part 3- Clinic based PT vs Home PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Kramer, J. F., 2003	Moderate Quality	Function(Knee Flexion ROM)	12 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Function(WOMAC - Function)	12 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Function(6-Minute Walk test)	12 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Function(30-Second Stair Test)	12 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Function(Knee Flexion ROM)	52 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Function(6-Minute Walk test)	52 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Function(WOMAC - Function)	52 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Function(30-Second Stair Test)	52 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 141: PICO 9 part 3- Clinic based PT vs Home PT: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Kramer, J. F., 2003	Moderate Quality	Pain(WOMAC - Pain)	12 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Pain(Pain Scale of Knee Society Clinical Rating Scale)	12 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Pain(Pain Scale of Knee Society Clinical Rating Scale)	52 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Kramer, J. F., 2003	Moderate Quality	Pain(WOMAC - Pain)	52 weeks	69	65	Clinic-based Rehab	Home-based Rehab	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 142: PICO 9 part 4- Home PT vs No Home PT: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Han, A. S., 2015	Moderate Quality	Adverse Event(TKR-related Re-admissions)	6 weeks	194	196	Monitored Home Exercise Program	Usual Care	RR	4.12%	4.59%	0.90(0.35,2.28)	Not Significant (P-value>.05)
Han, A. S., 2015	Moderate Quality	Adverse Event(Manipulation Under Anesthesia)	6 weeks	194	196	Monitored Home Exercise Program	Usual Care	RR	0.52%	1.02%	0.51(0.05,5.53)	Not Significant (P-value>.05)

Table 143: PICO 9 part 4- Home PT vs No Home PT: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Levine, M., 2013	Moderate Quality	Other(WOMAC)	6 weeks	30	33	NMES and Unsupervised at Home ROM Exercise	Physical Therapist Managed Rehab (Standard of Care)	MeanDiff	75.86(13.41)	70.19(17.08)	5.67(-1.88,13.22)	Not Significant (P-value>.05)
Levine, M., 2013	Moderate Quality	Other(WOMAC)	6 months	26	24	NMES and Unsupervised at Home ROM Exercise	Physical Therapist Managed Rehab (Standard of Care)	MeanDiff	86.61(14.68)	80.8(16.95)	5.81(-3.01,14.63)	Not Significant (P-value>.05)

Table 144: PICO 9 part 4- Home PT vs No Home PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Anneli, H, 2017	High Quality	Function(Velocity (Normal))	14 months	50	52	12 Month Home Exercise Program	Usual Care Control	MeanDiff	1.24(0.37)	1.18(0.28)	0.06(-0.07,0.19)	Not Significant (P-value>.05)
Anneli, H, 2017	High Quality	Function(Cadence (Normal))	14 months	50	52	12 Month Home Exercise Program	Usual Care Control	MeanDiff	120.9(21.40)	116.8(11.20)	4.1(-2.57,10.77)	Not Significant (P-value>.05)
Anneli, H, 2017	High Quality	Function(Velocity (Maximal))	14 months	50	52	12 Month Home Exercise Program	Usual Care Control	MeanDiff	1.67(0.40)	1.52(0.41)	0.15(-0.01,0.31)	Treatment 1 Significant (P-value<.05)
Anneli, H, 2017	High Quality	Function(Muscle Strength - Knee Flexion)	14 months	50	52	12 Month Home Exercise Program	Usual Care Control	MeanDiff	150(50.00)	120(50.00)	30(10.59,49.41)	Treatment 1 Significant (P-value<.05)
Anneli, H, 2017	High Quality	Function(Muscle Strength - Knee Extension)	14 months	50	52	12 Month Home Exercise Program	Usual Care Control	MeanDiff	350(130.00)	280(150.00)	70(15.59,124.41)	Not Significant (P-value>.05)
Anneli, H, 2017	High Quality	Function(Cadence (Maximal))	14 months	50	52	12 Month Home Exercise Program	Usual Care Control	MeanDiff	141.4(16.50)	133.7(14.90)	7.7(1.59,13.81)	Treatment 1 Significant (P-value<.05)
Han, A. S., 2015	Moderate Quality	Function(Knee ROM - Extension)	6 weeks	194	196	Monitored Home Exercise Program	Usual Care	MeanDiff	-6.3(7.30)	-6.5(6.30)	0.2(-1.15,1.55)	Not Significant (P-value>.05)
Han, A. S., 2015	Moderate Quality	Function(50 foot Walk Time)	6 weeks	194	196	Monitored Home Exercise Program	Usual Care	MeanDiff	12.9(3.80)	12.9(3.50)	0(-0.73,0.73)	Not Significant (P-value>.05)
Han, A. S., 2015	Moderate Quality	Function(WOMAC - Physical Function)	6 weeks	194	196	Monitored Home Exercise Program	Usual Care	MeanDiff	22.4(13.20)	22.5(11.50)	-0.1(-2.56,2.36)	Not Significant (P-value>.05)
Han, A. S., 2015	Moderate Quality	Function(Knee ROM - Flexion)	6 weeks	194	196	Monitored Home Exercise Program	Usual Care	MeanDiff	96.8(13.30)	95.7(15.10)	1.1(-1.72,3.92)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Levine, M., 2013	Moderate Quality	Function(KSS - Function)	6 weeks	30	33	NMES and Unsupervised at Home ROM Exercise	Physical Therapist Managed Rehab (Standard of Care)	MeanDiff	63.3(19.68)	58.33(19.19)	4.97(-4.65,14.59)	Not Significant (P-value>.05)
Levine, M., 2013	Moderate Quality	Function(Get-Up-and-Go Test)	6 weeks	30	33	NMES and Unsupervised at Home ROM Exercise	Physical Therapist Managed Rehab (Standard of Care)	MeanDiff	13.53(4.14)	12.21(2.83)	1.32(-0.45,3.09)	Not Significant (P-value>.05)
Levine, M., 2013	Moderate Quality	Function(Flexion)	6 weeks	30	33	NMES and Unsupervised at Home ROM Exercise	Physical Therapist Managed Rehab (Standard of Care)	MeanDiff	104.4(10.37)	107.6(11.18)	-3.2(-8.52,2.12)	Not Significant (P-value>.05)
Levine, M., 2013	Moderate Quality	Function(Extension)	6 weeks	30	33	NMES and Unsupervised at Home ROM Exercise	Physical Therapist Managed Rehab (Standard of Care)	MeanDiff	4.8(4.38)	4.15(6.27)	0.65(-2.00,3.30)	Not Significant (P-value>.05)
Levine, M., 2013	Moderate Quality	Function(Flexion)	6 months	26	24	NMES and Unsupervised at Home ROM Exercise	Physical Therapist Managed Rehab (Standard of Care)	MeanDiff	114.5(13.01)	112.2(10.56)	2.3(-4.25,8.85)	Not Significant (P-value>.05)
Levine, M., 2013	Moderate Quality	Function(Get-Up-and-Go Test)	6 months	25	24	NMES and Unsupervised at Home ROM Exercise	Physical Therapist Managed Rehab (Standard of Care)	MeanDiff	10.64(2.88)	10.25(2.11)	0.39(-1.02,1.80)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Levine, M., 2013	Moderate Quality	Function(Extension)	6 months	26	24	NMES and Unsupervised at Home ROM Exercise	Physical Therapist Managed Rehab (Standard of Care)	MeanDiff	2.58(2.86)	3.54(6.05)	-0.96(-3.62,1.70)	Not Significant (P-value>.05)
Levine, M., 2013	Moderate Quality	Function(KSS - Function)	6 months	26	24	NMES and Unsupervised at Home ROM Exercise	Physical Therapist Managed Rehab (Standard of Care)	MeanDiff	80(18.60)	72.08(18.23)	7.92(-2.29,18.13)	Not Significant (P-value>.05)
Vuorenmaa, M., 2014	Moderate Quality	Function(Timed Up and Go Test)	Post-Op	53	55	12-month Home Exercise Program	Normal Care	MeanDiff	-1.58(3.53)	-1.43(2.19)	-0.15(-1.26,0.96)	Not Significant (P-value>.05)
Vuorenmaa, M., 2014	Moderate Quality	Function(Passive Extension Deficit)	14 months	53	55	12-month Home Exercise Program	Normal Care	MeanDiff	-3.7(4.83)	-3.5(4.16)	-0.2(-1.90,1.50)	Not Significant (P-value>.05)
Vuorenmaa, M., 2014	Moderate Quality	Function(Isometric Strength of Operated Knee - Flexion)	14 months	53	55	12-month Home Exercise Program	Normal Care	MeanDiff	4.4(4.83)	2.4(3.78)	2(0.36,3.64)	Treatment 1 Significant (P-value<.05)
Vuorenmaa, M., 2014	Moderate Quality	Function(Isometric Strength of Operated Knee - Extension)	14 months	53	55	12-month Home Exercise Program	Normal Care	MeanDiff	15.1(9.29)	13.1(11.35)	2(-1.91,5.91)	Not Significant (P-value>.05)
Vuorenmaa, M., 2014	Moderate Quality	Function(Passive Flexion)	14 months	53	55	12-month Home Exercise Program	Normal Care	MeanDiff	13.2(10.77)	13.9(14.38)	-0.7(-5.48,4.08)	Not Significant (P-value>.05)
Vuorenmaa, M., 2014	Moderate Quality	Function(Maximal Walking Speed)	14 months	53	55	12-month Home Exercise Program	Normal Care	MeanDiff	0.32(0.22)	0.17(0.26)	0.15(0.06,0.24)	Treatment 1 Significant (P-value<.05)
Vuorenmaa, M., 2014	Moderate Quality	Function(Active Flexion)	14 months	53	55	12-month Home Exercise Program	Normal Care	MeanDiff	14.4(11.14)	14.2(14.76)	0.2(-4.72,5.12)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Vuorenmaa, M., 2014	Moderate Quality	Function(WOMAC - Functional Difficulty)	14 months	53	55	12-month Home Exercise Program	Normal Care	MeanDiff	-18(22.29)	-13(18.92)	-5(-12.81,2.81)	Not Significant (P-value>.05)
Vuorenmaa, M., 2014	Moderate Quality	Function(WOMAC - Stiffness)	14 months	53	55	12-month Home Exercise Program	Normal Care	MeanDiff	-25(26.00)	-17(30.27)	-8(-18.63,2.63)	Not Significant (P-value>.05)
Vuorenmaa, M., 2014	Moderate Quality	Function(SF-36 - PCS)	14 months	53	55	12-month Home Exercise Program	Normal Care	MeanDiff	8(11.14)	6(11.35)	2(-2.24,6.24)	Not Significant (P-value>.05)
Vuorenmaa, M., 2014	Moderate Quality	Function(Active Extension Deficit)	14 months	53	55	12-month Home Exercise Program	Normal Care	MeanDiff	-5.9(5.20)	-6(3.78)	0.1(-1.62,1.82)	Not Significant (P-value>.05)

Table 145: PICO 9 part 4- Home PT vs No Home PT: Other

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Vuorenmaa, M., 2014	Moderate Quality	Other(SF-36 - MCS)	14 month s	53	55	12-month Home Exercise Program	Normal Care	MeanDif	4(11.14)	3(11.35)	1(-3.24,5.24)	Not Significant (P-value>.05)

Table 146: PICO 9 part 4- Home PT vs No Home PT: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Anneli, H, 2017	High Quality	Pain(Knee Pain During Loading - VAS)	14 months	50	52	12 Month Home Exercise Program	Usual Care Control	MeanDiff	12(21.00)	15(20.00)	-3(-10.96,4.96)	Not Significant (P-value>.05)
Han, A. S., 2015	Moderate Quality	Pain(WOMAC - Pain)	6 weeks	194	196	Monitored Home Exercise Program	Usual Care	MeanDiff	7.2(4.10)	7.4(3.50)	-0.2(-0.96,0.56)	Not Significant (P-value>.05)
Levine, M., 2013	Moderate Quality	Pain(KSS - Pain)	6 weeks	30	33	NMES and Unsupervised at Home ROM Exercise	Physical Therapist Managed Rehab (Standard of Care)	MeanDiff	63.97(15.15)	61.21(18.98)	2.76(-5.69,11.21)	Not Significant (P-value>.05)
Levine, M., 2013	Moderate Quality	Pain(KSS - Pain)	6 months	26	24	NMES and Unsupervised at Home ROM Exercise	Physical Therapist Managed Rehab (Standard of Care)	MeanDiff	79.08(10.97)	75.5(14.77)	3.58(-3.68,10.84)	Not Significant (P-value>.05)
Vuorenmaa, M., 2014	Moderate Quality	Pain(WOMAC - Pain)	14 months	53	55	12-month Home Exercise Program	Normal Care	MeanDiff	-15(18.57)	-14(18.92)	-1(-8.07,6.07)	Not Significant (P-value>.05)

Table 147: PICO 9 part 5- Supervised PT vs Home PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Hudakova, Z., 2016	High Quality	Function(SF-36 Physical Function)	1 minute	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	8.2(-1.10,17.60)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Function(SF-36 Physical Role)	1 minute	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	6.8(-1.90,15.50)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Function(SF-36 Physical Role)	3 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	7.3(-1.40,16.00)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Function(SF-36 Physical Function)	3 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	8.6(-0.70,18.00)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Function(SF-36 Physical Function)	6 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	7.1(-2.30,16.50)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Function(SF-36 Physical Role)	6 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	9.6(0.9,18.3)	in favor of supervised physio Significant (P-value<.05)

Table 148: PICO 9 part 5- Supervised PT vs Home PT: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Hudakova, Z., 2016	High Quality	Other(SF-36 Emotional Role)	1 minute	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	8.3(-1.10,17.80)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 Emotional Role)	3 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	7.8(-1.60,17.30)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 Emotional Role)	6 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	7.2(-2.20,16.70)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 Mental Health)	1 minute	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	7.2(-2.30,16.80)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 Mental Health)	3 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	7.3(-1.10,15.40)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 Mental Health)	6 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	6.8(-2.70,16.40)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 Vitality)	1 minute	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	5.6(-3.20,14.50)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 Social Function)	1 minute	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	6.7(-2.80,16.30)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 General Health)	1 minute	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	7.8(-1.00,16.70)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 General Health)	3 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	6.3(-2.60,15.20)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Hudakova, Z., 2016	High Quality	Other(SF-36 Social Function)	3 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	6(-3.60,15.60)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 Social Function)	6 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	7.4(-2.20,16.70)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 Vitality)	6 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	5.8(-2.90,14.70)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 General Health)	6 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	7.9(-1.00,16.80)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Other(SF-36 Vitality)	3 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	9.1(0.30, 17.90)	Treatment 1 Significant (P-value<.05)

Table 149: PICO 9 part 5- Supervised PT vs Home PT: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Hudakova, Z., 2016	High Quality	Pain(SF-36 Bodily Pain)	1 minute	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	7.4(-0.50,15.40)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Pain(VAS Pain)	6 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	-0.8(-1.80,0.20)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Pain(SF-36 Bodily Pain)	6 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	7(-0.90,14.90)	Not Significant (P-value>.05)
Hudakova, Z., 2016	High Quality	Pain(VAS Pain)	1 minute	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	-1.2(-2.20,-0.30)	in favor of supervised physio Significant (P-value<.05)
Hudakova, Z., 2016	High Quality	Pain(VAS Pain)	3 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	-1.3(-2.30,-0.40)	in favor of supervised physio Significant (P-value<.05)
Hudakova, Z., 2016	High Quality	Pain(SF-36 Bodily Pain)	3 months	40	40	Supervised Physiotherapy	Standardized Home Program	Author Reported	. %	. %	12.2(4.20,20.10)	in favor of supervised physio Significant (P-value<.05)

Table 150: PICO 9 part 6- Supervised PT and Home PT vs Supervised PT: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Moffet, H., 2015	Moderate Quality	Adverse Event(Pain in Operated Knee)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RR	1.92%	4.95%	0.39(0.08,1.96)	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Adverse Event(Patients with Adverse Events)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RR	13.46%	15.84%	0.85(0.44,1.65)	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Adverse Event(Adverse Events Related to Study Therapy)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RD	0.00%	1.98%	-0.02(-0.05,0.01)	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Adverse Event(Bruising in Operated Knee)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RD	0.00%	0.99%	-0.01(-0.03,0.01)	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Adverse Event(Hospitalization)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RR	6.73%	4.95%	1.36(0.45,4.14)	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Adverse Event(Fall with Minor Symptoms)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RR	2.88%	3.96%	0.73(0.17,3.17)	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Adverse Event(Signs of Infection in Operated Knee)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RR	1.92%	1.98%	0.97(0.14,6.76)	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Adverse Event(Mobilization Under Anesthesia)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RR	2.88%	0.99%	2.91(0.31,27.55)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Moffet, H., 2015	Moderate Quality	Adverse Event(Swelling in Operated Knee)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RD	0.00%	0.99%	-0.01(-0.03,0.01)	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Adverse Event(Hip Fracture Due to Fall)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RD	0.96%	0.00%	0.01(-0.01,0.03)	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Adverse Event(Thrombophlebitis)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RR	1.92%	1.98%	0.97(0.14,6.76)	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Adverse Event(Problems with Wound-healing in Operated Knee)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RR	1.92%	1.98%	0.97(0.14,6.76)	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Adverse Event(Death)	4 months	104	101	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	RD	0.00%	0.99%	-0.01(-0.03,0.01)	Not Significant (P-value>.05)

Table 151: PICO 9 part 6- Supervised PT and Home PT vs Supervised PT: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Moffet, H., 2015	Moderate Quality	Other(WOMAC - Total)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	78.5(.)	78.5(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Other(WOMAC - Total)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	83.5(.)	82.6(.)	NA	Not Significant (P-value>.05)

Table 152: PICO 9 part 6- Supervised PT and Home PT vs Supervised PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Moffet, H., 2015	Moderate Quality	Function(WOMAC - Function)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	80.5(.)	80.3(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Function(WOMAC - Function)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	84.9(.)	83.9(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Function(Six-minute Walk Test)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	373.2(.)	362(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Function(ROM - Extension)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	-4.8(.)	-4.5(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Function(ROM - Flexion)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	108.9(.)	109.6(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Function(Timed Stair Test)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	30.6(.)	34.2(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Function(ROM - Extension)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	-3.6(.)	-3.4(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Function(ROM - Flexion)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	111.5(.)	112.4(.)	NA	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Moffet, H., 2015	Moderate Quality	Function(Timed Stair Test)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	26.6(.)	29.9(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Function(Six-minute Walk Test)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	407.5(.)	396.3(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Function(Isometric Strength - In extension at 60 degrees of flexion)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	105.7(.)	105.4(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Function(Isometric Strength - at 60 degrees of flexion)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	52.1(.)	54.9(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Function(Isometric Strength - in extension at 30 degrees of flexion)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	76.4(.)	74.6(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Function(Isometric Strength - at 30 degrees of flexion)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	67.1(.)	69.4(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Other(WOMAC - Stiffness)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	67.4(.)	67.6(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Other(WOMAC - Stiffness)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	71(.)	72.1(.)	NA	Not Significant (P-value>.05)

Table 153: PICO 9 part 6- Supervised PT and Home PT vs Supervised PT: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Moffet, H., 2015	Moderate Quality	Other(KOOS - Sports and Rec Activities)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	25.2(.)	25.6(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Other(KOOS - ADL)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	80.8(.)	80.9(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Other(KOOS - ADL)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	85.7(.)	84.2(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Other(KOOS - Sports and Rec Activities)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	30.9(.)	29.8(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Other(KOOS - QoL)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	63.9(.)	61.3(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Other(KOOS - QoL)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	69.5(.)	69(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Other(KOOS - Sympoms)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	69.7(.)	68(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Other(KOOS - Sympoms)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	74.8(.)	71.9(.)	NA	Not Significant (P-value>.05)

Table 154: PICO 9 part 6- Supervised PT and Home PT vs Supervised PT: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Moffet, H., 2015	Moderate Quality	Pain(KOOS - Pain)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	72.1(.)	70.7(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Pain(WOMAC - Pain)	2 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	77.2(.)	76.9(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Pain(KOOS - Pain)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	80.1(.)	78.1(.)	NA	Not Significant (P-value>.05)
Moffet, H., 2015	Moderate Quality	Pain(WOMAC - Pain)	4 months	98	100	In-home telerehabilitation	Face-to-face home visits (Standard Rehab)	Author Reported	84(.)	82.8(.)	NA	Not Significant (P-value>.05)

Table 155: PICO 9 part 7- Inpatient PT and Home PT vs Home PT: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Buhagiar, M. A., 2017	Moderate Quality	Adverse Event(ED Visits)	52 weeks	81	84	Inpatient and Home Program	Home Program	RR	4.94%	4.76%	1.04(0.27,4.01)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Adverse Event(Manipulations Under Anesthetic)	52 weeks	81	84	Inpatient and Home Program	Home Program	RR	4.94%	3.57%	1.38(0.32,5.99)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Adverse Event(Readmission)	52 weeks	81	84	Inpatient and Home Program	Home Program	RR	4.94%	2.38%	2.07(0.39,11.01)	Not Significant (P-value>.05)

Table 156: PICO 9 part 7- Inpatient PT and Home PT vs Home PT: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Buhagiar, M. A., 2017	Moderate Quality	Other(Oxford Knee Score)	10 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	33.3(8.72)	32.1(8.88)	1.2(-1.49,3.89)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Other(EuroQol Group 5-Dimension (EQ-5D) Descriptive Index)	10 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	0.74(0.18)	0.69(0.23)	0.05(-0.01,0.11)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Other(Oxford Knee Score)	26 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	36.9(8.27)	34.8(8.88)	2.1(-0.52,4.72)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Other(EuroQol Group 5-Dimension (EQ-5D) Descriptive Index)	26 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	0.74(0.18)	0.72(0.23)	0.02(-0.04,0.08)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Other(EuroQol Group 5-Dimension (EQ-5D) Descriptive Index)	52 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	0.7(0.23)	0.73(0.23)	-0.03(-0.10,0.04)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Other(Oxford Knee Score)	52 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	36.5(8.72)	37(8.88)	-0.5(-3.19,2.19)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Other(KOOS)	10 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	66.9(18.37)	66.7(19.17)	0.2(-5.53,5.93)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Other(KOOS)	26 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	75.7(18.37)	73.7(18.70)	2(-3.66,7.66)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Buhagiar, M. A., 2017	Moderate Quality	Other(KOOS)	52 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	76.4(18.37)	77(18.70)	-0.6(-6.26,5.06)	Not Significant (P-value>.05)

Table 157: PICO 9 part 7- Inpatient PT and Home PT vs Home PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Buhagiar, M. A., 2017	Moderate Quality	Function(6-minute Walk Test)	10 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	386.8(15.53)	383.2(15.3.84)	3.6(-43.00,50.20)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Function(15-meter Walk Test)	10 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	13(4.59)	13.2(5.14)	-0.2(-1.69,1.29)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Function(15-meter Walk Test)	26 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	12.5(5.05)	12(5.14)	0.5(-1.05,2.05)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Function(6-minute Walk Test)	26 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	402.7(14.6.02)	403.7(14.8.23)	-1(-45.90,43.90)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Function(6-minute Walk Test)	52 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	391.2(15.2.45)	404.8(15.5.25)	-13.6(-60.55,33.35)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Function(15-meter Walk Test)	52 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	12.3(5.05)	12.7(5.14)	-0.4(-1.95,1.15)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Function(Knee Flexion ROM >= 100 degrees)	10 weeks	78	80	Inpatient and Home Program	Home Program	RR	70.51%	70.00%	1.01(0.82,1.23)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Function(Knee Flexion ROM >= 100 degrees)	26 weeks	80	80	Inpatient and Home Program	Home Program	RR	82.50%	77.50%	1.06(0.91,1.24)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Function(Knee Flexion ROM >= 100 degrees)	52 weeks	80	79	Inpatient and Home Program	Home Program	RR	83.75%	87.34%	0.96(0.84,1.09)	Not Significant (P-value>.05)

Table 158: PICO 9 part 7- Inpatient PT and Home PT vs Home PT: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Buhagiar, M. A., 2017	Moderate Quality	Other(EQ-5D Visual Analog Scale)	10 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	80.4(16.07)	79.7(16.83)	0.7(-4.32,5.72)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Other(EQ-5D Visual Analog Scale)	26 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	78.8(16.07)	80.2(16.83)	-1.4(-6.42,3.62)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Other(EQ-5D Visual Analog Scale)	52 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	76.9(16.07)	77.4(16.83)	-0.5(-5.52,4.52)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Other(Outpatient PT Sessions)	52 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	3.02(1.29)	3.07(1.26)	-0.05(-0.44,0.34)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Other(Time to Return to Work)	52 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	7.57(12.44)	7.8(10.57)	-0.23(-3.76,3.30)	Not Significant (P-value>.05)
Buhagiar, M. A., 2017	Moderate Quality	Other(Patient Satisfaction with Rehab)	52 weeks	81	84	Inpatient and Home Program	Home Program	MeanDiff	91.9(19.29)	82.9(20.11)	9(2.99,15.01)	Treatment 1 Significant (P-value<.05)

Table 159: PICO 9 part 8- Inpatient PT vs No Inpatient PT: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Naylor, J. M., 2017	Low Quality	Other(Median Oxford Knee Score)	90 days	129	129	Inpatient Rehab	No Inpatient Rehab	Author Reported	40(.)	40(.)	NA	Not Significant (P-value>.05)
Naylor, J. M., 2017	Low Quality	Other(Median Oxford Knee Score)	1 year	129	129	Inpatient Rehab	No Inpatient Rehab	Author Reported	44(.)	44(.)	NA	Not Significant (P-value>.05)

Table 160: PICO 9 part 8- Inpatient PT vs No Inpatient PT: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Naylor, J. M., 2017	Low Quality	Other(Length of Stay)	Post-Op	129	129	Inpatient Rehab	No Inpatient Rehab	MeanDiff	6.5(1.90)	6.3(2.80)	0.2(-0.38,0.78)	Not Significant (P-value>.05)
Naylor, J. M., 2017	Low Quality	Other(Patients w/time off work >6wks)	90 days	129	129	Inpatient Rehab	No Inpatient Rehab	MeanDiff	16.1(47.52)	18.6(49.26)	-2.5(-14.31,9.31)	Not Significant (P-value>.05)
Naylor, J. M., 2017	Low Quality	Other(EuroQoL Visual Analogue Scale)	90 days	129	129	Inpatient Rehab	No Inpatient Rehab	Author Reported	85(.)	90(.)	NA	Not Significant (P-value>.05)
Naylor, J. M., 2017	Low Quality	Other(EuroQoL Visual Analogue Scale)	1 year	129	129	Inpatient Rehab	No Inpatient Rehab	Author Reported	85(.)	85(.)	NA	Not Significant (P-value>.05)
Naylor, J. M., 2017	Low Quality	Other(EuroQoL Visual Analogue Scale)	35 days	129	129	Inpatient Rehab	No Inpatient Rehab	Author Reported	. %	. %	NA	Intervention group 2 was Significant (P-value<.05)

Table 161: PICO 9 part 9- Outpatient PT vs Home and Outpatient PT: Complications

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Warren, M., 2016	Low Quality	Adverse Event(Manipulation under Anesthesia)	Post-Op	87	22	Outpatient PT Immediately after DIscharge	Home Health then Outpatient PT	RD	0.00%	4.55%	-0.05(-0.13,0.04)	Not Significant (P-value>.05)

Table 162: PICO 9 part 9- Outpatient PT vs Home and Outpatient PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Warren, M., 2016	Low Quality	Function(KOOS - ADL)	2 months	109	109	Outpatient PT Immediately after Discharge	Home Health then Outpatient PT	Author Reported	84.2(.)	84.3(.)	NA	Not Significant (P-value>.05)
Warren, M., 2016	Low Quality	Function(Six Minute Walk Test)	2 months	109	109	Outpatient PT Immediately after Discharge	Home Health then Outpatient PT	Author Reported	363.7(.)	359.9(.)	NA	Not Significant (P-value>.05)
Warren, M., 2016	Low Quality	Function(KOOS - Symptoms)	2 months	109	109	Outpatient PT Immediately after Discharge	Home Health then Outpatient PT	Author Reported	73.3(.)	75.5(.)	NA	Not Significant (P-value>.05)
Warren, M., 2016	Low Quality	Function(Meeting ROM Goal of 110 degrees Flexion)	2 months	.	.			Logistic Regression, Odds Ratio	4.79(0.91-24.24)			Not Significant (P-value>.05)
Warren, M., 2016	Low Quality	Function(Meeting ROM Goal of 0 degrees Extension)	2 months	.	.			Logistic Regression, Odds Ratio	3.35 (0.95-11.8)			Not Significant (P-value>.05)

Table 163: PICO 9 part 9- Outpatient PT vs Home and Outpatient PT: Other

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Warren, M., 2016	Low Quality	Other(KOOS - QoL)	2 month s	109	109	Outpatient PT Immediately after DIscharge	Home Health then Outpatient PT	Author Reporte d	64.1(.)	62.7(.)	NA	Not Significant (P-value>.05)

Table 164: PICO 9 part 9- Outpatient PT vs Home and Outpatient PT: Pain

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Warren, M., 2016	Low Quality	Pain(KOOS - Pain)	2 month s	109	109	Outpatient PT Immediately after DIscharge	Home Health then Outpatient PT	Author Reporte d	75.9(.)	79.1(.)	NA	Not Significant (P-value>.05)

Table 36: PICO 10 part 3- High Intensity PT vs No High Intensity PT: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Bade, M. J., 2017	High Quality	Adverse Event(Adverse Event)	Post-Op	84	78	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	Author Reported	8.30%	10.20%		Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Adverse Event(Frequency of Musculoskeletal Injuries)	Post-Op	84	78	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	Author Reported	. %	. %		Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Adverse Event(Frequency of Knee Manipulations)	Post-Op	84	78	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	Author Reported	. %	. %		Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Adverse Event(Frequency of Falls)	Post-Op	84	78	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	Author Reported	. %	. %		Not Significant (P-value>.05)

Table 37: PICO 10 part 3- High Intensity PT vs No High Intensity PT: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Bade, M. J., 2017	High Quality	Other(WOMAC)	1 month	78	74	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	29.27(11.64)	30.13(12.30)	9.7(6.06, 13.34)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Other(WOMAC)	12 months	62	62	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	6.69(7.75)	7.16(6.28)	-0.47(-2.95, 2.01)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Other(WOMAC)	2 months	77	76	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	19.34(10.56)	19.57(11.24)	-10.79(-14.42, -7.16)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Other(WOMAC)	3 months	72	75	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	14.49(8.98)	14.55(8.38)	-0.06(-2.87, 2.75)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Other(WOMAC)	6 months	66	67	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	8.97(7.27)	10.6(9.45)	-1.63(-4.49, 1.23)	Not Significant (P-value>.05)

Table 38: PICO 10 part 3- High Intensity PT vs No High Intensity PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Akbaba, Y. A., 2016	Moderate Quality	Function(Cadence)	1 month	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	95.5(16.70)	89(21.00)	6.5(-5.26,18.26)	Not Significant (P-value>.05)
Akbaba, Y. A., 2016	Moderate Quality	Function(Cadence)	2 months	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	106.7(17.70)	102(14.30)	4.7(-5.27,14.67)	Not Significant (P-value>.05)
Akbaba, Y. A., 2016	Moderate Quality	Function(Single Leg Stance (Left Leg))	1 month	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	15.8(17.40)	3.2(2.20)	12.6(4.91,20.29)	Treatment 1 Significant (P-value<.05)
Akbaba, Y. A., 2016	Moderate Quality	Function(Single Leg Stance (Left Leg))	2 months	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	42.6(32.50)	8.1(6.20)	34.5(20.00,49.00)	Treatment 1 Significant (P-value<.05)
Akbaba, Y. A., 2016	Moderate Quality	Function(Single Leg Stance (Right Leg))	1 month	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	15.3(16.80)	3.2(1.80)	12.1(4.69,19.51)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Akbaba, Y. A., 2016	Moderate Quality	Function(Single Leg Stance (Right Leg))	2 months	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	44.2(32.20)	13.8(9.70)	30.4(15.66,45.14)	Treatment 1 Significant (P-value<.05)
Akbaba, Y. A., 2016	Moderate Quality	Function(Stair Climbing Test)	1 month	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	34.9(20.50)	46.5(23.90)	-11.6(-25.40,2.20)	Not Significant (P-value>.05)
Akbaba, Y. A., 2016	Moderate Quality	Function(Stair Climbing Test)	2 months	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	17.5(7.20)	30.1(12.30)	-12.6(-18.85,-6.35)	Treatment 1 Significant (P-value<.05)
Akbaba, Y. A., 2016	Moderate Quality	Function(Timed Up and Go Test)	1 month	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	19(10.30)	26.7(17.60)	-7.7(-16.64,1.24)	Not Significant (P-value>.05)
Akbaba, Y. A., 2016	Moderate Quality	Function(Timed Up and Go Test)	2 months	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	12.9(2.90)	18.2(11.40)	-5.3(-10.46,-0.14)	Treatment 1 Significant (P-value<.05)
Akbaba, Y. A., 2016	Moderate Quality	Function(WOMAC - Function)	1 month	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	4.7(2.50)	6.2(1.70)	-1.5(-2.82,-0.18)	Treatment 1 Significant (P-value<.05)
Akbaba, Y. A., 2016	Moderate Quality	Function(WOMAC - Function)	2 months	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	1.9(0.90)	4(1.70)	-2.1(-2.94,-1.26)	Treatment 1 Significant (P-value<.05)
Akbaba, Y. A., 2016	Moderate Quality	Function(WOMAC - Stiffness)	1 month	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	5.8(2.20)	5.2(2.80)	0.6(-0.96,2.16)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Akbaba, Y. A., 2016	Moderate Quality	Function(WOMAC - Stiffness)	2 months	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	2.5(1.60)	4(2.10)	-1.5(-2.66,-0.34)	Treatment 1 Significant (P-value<.05)
Bade, M. J., 2017	High Quality	Function(Quad Activation)	1 month	68	62	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	72.45(17.02)	73.14(20.25)	-0.69(-7.15,5.77)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(6-minute Walk Test)	1 month	82	78	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	392.4(100.40)	374.4(87.33)	18(-11.12,47.12)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Hamstrings Strength)	1 month	81	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	0.56(0.24)	0.57(0.22)	-0.01(-0.08,0.06)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Knee Extension)	1 month	82	78	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	1.83(2.91)	2.45(2.60)	-0.62(-1.47,0.23)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Knee Flexion)	1 month	82	78	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	108.1(15.12)	110.83(10.81)	-2.73(-6.79,1.33)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Physical Activity Scale for the Elderly)	1 month	77	75	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	83.42(55.80)	76.25(48.15)	7.17(-9.39,23.73)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Quadriceps Strength)	1 month	81	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	0.75(0.32)	0.8(0.34)	-0.05(-0.15,0.05)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(SF-12 Physical Component)	1 month	78	73	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	33.23(8.81)	33.07(7.83)	0.16(-2.50,2.82)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Stair Climbing Test)	1 month	82	78	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	24.93(12.39)	24.42(8.51)	0.51(-2.77,3.79)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Timed-up-and-go)	1 month	82	78	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	10.84(4.16)	10.48(2.60)	0.36(-0.71,1.43)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Bade, M. J., 2017	High Quality	Function(Knee Extension)	12 minutes	71	67	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	-2.18(2.43)	-1.76(2.28)	-0.42(-1.21,0.37)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(6-minute Walk Test)	12 months	69	67	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	531.7(98.90)	513.6(78.40)	18.1(-11.85,48.05)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Hamstrings Strength)	12 months	70	67	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	0.84(0.31)	0.85(0.29)	-0.01(-0.11,0.09)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Knee Flexion)	12 months	71	67	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	129.28(8.89)	128.27(8.61)	1.01(-1.91,3.93)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Physical Activity Scale for the Elderly)	12 months	45	47	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	208.23(89.51)	166.48(74.74)	41.75(7.98,75.52)	Treatment 1 Significant (P-value<.05)
Bade, M. J., 2017	High Quality	Function(Quad Activation)	12 months	62	59	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	83.39(11.73)	83.73(10.12)	-0.34(-4.24,3.56)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Quadriceps Strength)	12 months	70	67	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	1.42(0.47)	1.43(0.44)	-0.01(-0.16,0.14)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(SF-12 Physical Component)	12 months	67	61	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	51.59(8.33)	50.07(7.16)	1.52(-1.16,4.20)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Stair Climbing Test)	12 months	70	67	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	11.4(3.62)	11.77(3.15)	-0.37(-1.50,0.76)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Timed-up-and-go)	12 months	71	67	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	7.36(1.77)	7.44(1.50)	-0.08(-0.63,0.47)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(6-minute Walk Test)	2 months	79	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	467.7(96.60)	465.6(84.30)	2.1(-26.33,30.53)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Bade, M. J., 2017	High Quality	Function(Hamstrings Strength)	2 months	78	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	0.68(0.25)	0.7(0.23)	-0.02(-0.10,0.06)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Knee Extension)	2 months	79	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	0.85(2.92)	0.82(2.25)	0.03(-0.79,0.85)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Knee Flexion)	2 months	79	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	119.25(10.75)	120.1(9.38)	-0.85(-4.01,2.31)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Physical Activity Scale for the Elderly)	2 months	76	74	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	136.53(90.63)	131.96(80.03)	4.57(-22.77,31.91)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Quad Activation)	2 months	66	64	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	80.65(13.60)	80.34(16.96)	0.31(-4.98,5.60)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Quadriceps Strength)	2 months	78	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	1.07(0.38)	1.07(0.38)	0(-0.12,0.12)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(SF-12 Physical Component)	2 months	76	75	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	40.63(8.01)	39.15(8.72)	1.48(-1.19,4.15)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Stair Climbing Test)	2 months	79	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	15.16(5.78)	15.27(4.67)	-0.11(-1.76,1.54)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Timed-up-and-go)	2 months	79	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	8.36(2.42)	8.27(1.67)	0.09(-0.56,0.74)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(6-minute Walk Test)	3 months	77	76	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	493.7(92.40)	478.7(82.70)	15(-12.78,42.78)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Hamstrings Strength)	3 months	77	76	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	0.76(0.28)	0.74(0.26)	0.02(-0.07,0.11)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Bade, M. J., 2017	High Quality	Function(Knee Extension)	3 months	77	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	-0.09(2.97)	0.06(2.37)	-0.15(-1.00,0.70)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Knee Flexion)	3 months	77	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	123.79(9.10)	123.71(8.97)	0.08(-2.77,2.93)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Physical Activity Scale for the Elderly)	3 months	75	75	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	168.51(103.36)	162.48(86.87)	6.03(-24.53,36.59)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Quad Activation)	3 months	67	63	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	82.77(10.78)	79.94(13.78)	2.83(-1.44,7.10)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Quadriceps Strength)	3 months	77	76	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	1.21(0.42)	1.15(0.40)	0.06(-0.07,0.19)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(SF-12 Physical Component)	3 months	75	75	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	45.92(7.96)	43.09(9.40)	2.83(0.04,5.62)	Treatment 1 Significant (P-value<.05)
Bade, M. J., 2017	High Quality	Function(Stair Climbing Test)	3 months	77	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	13.02(4.62)	13.6(3.58)	-0.58(-1.89,0.73)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Timed-up-and-go)	3 months	77	77	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	7.58(1.82)	7.98(1.58)	-0.4(-0.94,0.14)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Knee Extension)	6 minutes	71	71	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	-1.38(1.66)	-0.9(2.62)	-0.48(-1.20,0.24)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(6-minute Walk Test)	6 months	71	71	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	520.3(91.10)	511.7(77.70)	8.6(-19.25,36.45)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Hamstrings Strength)	6 months	84	78	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	71(0.80)	71(0.80)	0(-0.25,0.25)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Bade, M. J., 2017	High Quality	Function(Knee Flexion)	6 months	71	71	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	127.1(6.57)	127.45(7.88)	-0.35(-2.74,2.04)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Physical Activity Scale for the Elderly)	6 months	63	60	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	169.59(8.067)	171.98(8.112)	-2.39(-30.99,26.21)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Quad Activation)	6 months	61	62	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	80.87(12.01)	82.92(9.55)	-2.05(-5.89,1.79)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Quadriceps Strength)	6 months	71	71	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	1.35(0.46)	1.35(0.40)	0(-0.14,0.14)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(SF-12 Physical Component)	6 months	71	68	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	50.84(6.23)	49.02(7.37)	1.82(-0.45,4.09)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Stair Climbing Test)	6 months	71	71	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	11.78(4.29)	12.15(3.30)	-0.37(-1.63,0.89)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Timed-up-and-go)	6 months	71	71	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	7.33(1.60)	7.48(1.45)	-0.15(-0.65,0.35)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Function(Frequency of Knee ROM Limitations)	Post-Op	84	78	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	Author Reported	. %	. %		Not Significant (P-value>.05)

Table 39: PICO 10 part 3- High Intensity PT vs No High Intensity PT: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Bade, M. J., 2017	High Quality	Other(SF-12 Mental Component)	1 month	78	73	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	51.83(9.99)	50.51(9.59)	1.32(-1.80,4.44)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Other(SF-12 Mental Component)	12 months	67	61	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	55.76(6.48)	57.83(3.58)	-2.07(-3.86,-0.28)	Treatment 2 Significant (P-value<.05)
Bade, M. J., 2017	High Quality	Other(SF-12 Mental Component)	2 months	76	75	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	56.3(8.74)	56.69(8.50)	-0.39(-3.14,2.36)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Other(SF-12 Mental Component)	3 months	75	75	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	56.73(7.29)	57.05(6.86)	-0.32(-2.59,1.95)	Not Significant (P-value>.05)
Bade, M. J., 2017	High Quality	Other(SF-12 Mental Component)	6 months	71	68	High-intensity, Progression-based Rehab Program	Time-based Rehab Program	MeanDiff	55.76(7.26)	56.64(6.20)	-0.88(-3.12,1.36)	Not Significant (P-value>.05)

Table 40: PICO 10 part 3- High Intensity PT vs No High Intensity PT: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Akbaba, Y. A., 2016	Moderate Quality	Pain(WOMAC - Pain)	1 month	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	3.3(2.10)	3.3(1.20)	0(-1.06,1.06)	Not Significant (P-value>.05)
Akbaba, Y. A., 2016	Moderate Quality	Pain(WOMAC - Pain)	2 months	20	20	Intensive Supervision Rehab	Less Intensive Supervised Rehab	MeanDiff	1.4(1.00)	2.6(1.30)	-1.2(-1.92,-0.48)	Treatment 1 Significant (P-value<.05)

Table 41: PICO 9 part 12- Virtual PT vs Non-virtual PT: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Piqueras, M., 2013	Moderate Quality	Adverse Event(Drop-out due to Joint Stiffness and/or Surgical Wound Complications)	1 week	90	91	Interactive Virtual Outpatient Program	Standard Care	RR	20.00%	23.08%	0.87(0.50,1.51)	Not Significant (P-value>.05)

Table 42: PICO 9 part 12- Virtual PT vs Non-virtual PT: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Jin, C., 2018	Moderate Quality	Function(WOMAC)	1 month	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	32(5.24)	35.06(5.19)	-3.06(-5.58,-0.54)	Treatment 1 Significant (P-value<.05)
Jin, C., 2018	Moderate Quality	Function(WOMAC)	3 months	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	25.79(4.20)	29.67(5.55)	-3.88(-6.25,-1.51)	Treatment 1 Significant (P-value<.05)
Jin, C., 2018	Moderate Quality	Function(WOMAC)	6 months	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	21.58(4.19)	26.33(3.85)	-4.75(-6.69,-2.81)	Treatment 1 Significant (P-value<.05)
Russo, L. R., 2017	Moderate Quality	Function(WOMAC)	3 months	52	50	Videoin sight Video Psychological Tx	No Video (Control)	MeanDiff	79.9(13.00)	69.7(9.50)	10.2(5.79,14.61)	Treatment 1 Significant (P-value<.05)
Russo, L. R., 2017	Moderate Quality	Function(KSS)	3 months	52	50	Videoin sight Video Psychological Tx	No Video (Control)	MeanDiff	88(10.00)	78(8.00)	10(6.49,13.51)	Treatment 1 Significant (P-value<.05)

Table 43: PICO 9 part 12- Virtual PT vs Non-virtual PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Jin, C., 2018	Moderate Quality	Function(Days Needed to Reach 60 degrees ROM)	Post-Op	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	2.45(0.71)	3.09(0.77)	-0.64(-1.00,-0.28)	Treatment 1 Significant (P-value<.05)
Jin, C., 2018	Moderate Quality	Function(Days Needed to Reach 90 degrees ROM)	Post-Op	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	13.48(2.48)	15.24(2.82)	-1.76(-3.04,-0.48)	Treatment 1 Significant (P-value<.05)
Jin, C., 2018	Moderate Quality	Function(ROM)	3 days	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	65.03(3.96)	62(4.65)	3.03(0.95,5.11)	Treatment 1 Significant (P-value<.05)
Jin, C., 2018	Moderate Quality	Function(ROM)	7 days	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	79.64(6.45)	71.76(4.69)	7.88(5.16,10.60)	Treatment 1 Significant (P-value<.05)
Jin, C., 2018	Moderate Quality	Function(ROM)	14 days	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	93.73(6.57)	86.36(4.97)	7.37(4.56,10.18)	Treatment 1 Significant (P-value<.05)
Jin, C., 2018	Moderate Quality	Function(Hospital for Special Surgery)	1 month	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	68.39(4.32)	60.45(4.56)	7.94(5.80,10.08)	Treatment 1 Significant (P-value<.05)
Jin, C., 2018	Moderate Quality	Function(Hospital for Special Surgery)	3 months	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	77.73(5.48)	67.94(4.51)	9.79(7.37,12.21)	Treatment 1 Significant (P-value<.05)
Jin, C., 2018	Moderate Quality	Function(Hospital for Special Surgery)	6 months	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	87.55(4.29)	80.39(4.39)	7.16(5.07,9.25)	Treatment 1 Significant (P-value<.05)
Piqueras, M., 2013	Moderate Quality	Function(Active Knee Extension)	2 weeks	72	70	Interactive Virtual Outpatient Program	Standard Care	MeanDiff	0.2(2.80)	0.9(3.70)	-0.7(-1.78,0.38)	Treatment 1 Significant (P-value<.05)
Piqueras, M., 2013	Moderate Quality	Function(Active Knee Extension)	3 months	68	65	Interactive Virtual Outpatient Program	Standard Care	MeanDiff	1.3(3.10)	0.8(3.30)	0.5(-0.59,1.59)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Piqueras, M., 2013	Moderate Quality	Function(Active Knee Flexion)	2 weeks	72	70	Interactive Virtual Outpatient Program	Standard Care	MeanDiff	8.53(6.56)	7.71(6.89)	0.82(-1.39,3.03)	Not Significant (P-value>.05)
Piqueras, M., 2013	Moderate Quality	Function(Active Knee Flexion)	3 months	68	65	Interactive Virtual Outpatient Program	Standard Care	MeanDiff	18.16(9.71)	15.63(8.82)	2.53(-0.62,5.68)	Not Significant (P-value>.05)
Piqueras, M., 2013	Moderate Quality	Function(Hamstring Strength)	2 weeks	72	70	Interactive Virtual Outpatient Program	Standard Care	MeanDiff	1.17(2.60)	0.69(2.22)	0.48(-0.31,1.27)	Not Significant (P-value>.05)
Piqueras, M., 2013	Moderate Quality	Function(Hamstring Strength)	3 months	68	65	Interactive Virtual Outpatient Program	Standard Care	MeanDiff	2.93(3.33)	2.26(3.30)	0.67(-0.46,1.80)	Not Significant (P-value>.05)
Piqueras, M., 2013	Moderate Quality	Function(Quadriceps Strength)	2 weeks	72	70	Interactive Virtual Outpatient Program	Standard Care	MeanDiff	2.98(3.15)	1.64(2.60)	1.34(0.39,2.29)	Treatment 1 Significant (P-value<.05)
Piqueras, M., 2013	Moderate Quality	Function(Quadriceps Strength)	3 months	68	65	Interactive Virtual Outpatient Program	Standard Care	MeanDiff	8.48(4.96)	5.89(5.17)	2.59(0.87,4.31)	Treatment 1 Significant (P-value<.05)
Piqueras, M., 2013	Moderate Quality	Function(Timed Get-up-and-go)	2 weeks	72	70	Interactive Virtual Outpatient Program	Standard Care	MeanDiff	-3.36(5.38)	5.22(6.25)	-8.58(-10.50,-6.66)	Not Significant (P-value>.05)
Piqueras, M., 2013	Moderate Quality	Function(Timed Get-up-and-go)	3 months	68	65	Interactive Virtual Outpatient Program	Standard Care	MeanDiff	-7(6.31)	-10.86(8.72)	3.86(1.26,6.46)	Treatment 2 Significant (P-value<.05)
Piqueras, M., 2013	Moderate Quality	Function(WOMAC - Function)	2 weeks	72	70	Interactive Virtual Outpatient Program	Standard Care	Author Reported	. %	. %		Not Significant (P-value>.05)
Piqueras, M., 2013	Moderate Quality	Function(WOMAC - Function)	3 months	68	65	Interactive Virtual Outpatient Program	Standard Care	Author Reported	. %	. %		Not Significant (P-value>.05)
Piqueras, M., 2013	Moderate Quality	Function(WOMAC - Stiffness)	2 weeks	72	70	Interactive Virtual Outpatient Program	Standard Care	Author Reported	. %	. %		Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Piqueras, M., 2013	Moderate Quality	Function(WOMAC - Stiffness)	3 months	68	65	Interactive Virtual Outpatient Program	Standard Care	Author Reported	. %	. %		Not Significant (P-value>.05)
Russo, L. R., 2017	Moderate Quality	Function(SF-36 - Physical)	3 months	52	50	Videoin insight Video Psychological Tx	No Video (Control)	MeanDiff	45.6(8.30)	46.2(9.90)	-0.6(-4.15,2.95)	Not Significant (P-value>.05)
Russo, L. R., 2017	Moderate Quality	Function(VAS)	3 months	52	50	Videoin sight Video Psychological Tx	No Video (Control)	MeanDiff	2.8(1.60)	4(1.50)	-1.2(-1.80,-0.60)	Treatment 1 Significant (P-value<.05)

Table 44: PICO 9 part 12- Virtual PT vs Non-virtual PT: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Russo, L. R., 2017	Moderate Quality	Other(SF-36 - Mental)	3 months	52	50	Videoinsight Video Psychological Tx	No Video (Control)	MeanDiff	51.7(5.10)	50.5(4.80)	1.2(-0.72,3.12)	Not Significant (P-value>.05)
Russo, L. R., 2017	Moderate Quality	Other(Tampa Scale of Kinesiophobia)	3 months	52	50	Videoinsight Video Psychological Tx	No Video (Control)	MeanDiff	24(5.00)	29(5.00)	-5(-6.94,-3.06)	Treatment 1 Significant (P-value<.05)
Russo, L. R., 2017	Moderate Quality	Other(Beck Depression Inventory)	3 months	52	50	Videoinsight Video Psychological Tx	No Video (Control)	MeanDiff	5(5.00)	9(4.00)	-4(-5.75,-2.25)	Treatment 1 Significant (P-value<.05)
Russo, L. R., 2017	Moderate Quality	Other(State-Trait Anxiety Inventory)	3 months	52	50	Videoinsight Video Psychological Tx	No Video (Control)	MeanDiff	30(6.00)	36(9.00)	-6(-8.98,-3.02)	Treatment 1 Significant (P-value<.05)

Table 45: PICO 9 part 12- Virtual PT vs Non-virtual PT: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Jin, C., 2018	Moderate Quality	Pain(VAS - Pain)	3 days	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	6.48(0.87)	6.84(1.09)	-0.36(-0.84,0.12)	Not Significant (P-value>.05)
Jin, C., 2018	Moderate Quality	Pain(VAS - Pain)	5 days	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	5.42(0.79)	5.97(0.88)	-0.55(-0.95,-0.15)	Treatment 1 Significant (P-value<.05)
Jin, C., 2018	Moderate Quality	Pain(VAS - Pain)	7 days	33	33	Virtual Reality Rehabilitation	Conventional Rehab	MeanDiff	3.87(0.55)	4.42(0.79)	-0.55(-0.88,-0.22)	Treatment 1 Significant (P-value<.05)
Piqueras, M., 2013	Moderate Quality	Pain(VAS - Pain)	2 weeks	72	70	Interactive Virtual Outpatient Program	Standard Care	MeanDiff	-0.69(1.44)	-0.61(1.87)	-0.08(-0.63,0.47)	Not Significant (P-value>.05)
Piqueras, M., 2013	Moderate Quality	Pain(VAS - Pain)	3 months	68	65	Interactive Virtual Outpatient Program	Standard Care	MeanDiff	-1.79(2.45)	-2.3(2.03)	0.51(-0.25,1.27)	Not Significant (P-value>.05)
Piqueras, M., 2013	Moderate Quality	Pain(WOMAC - Pain)	2 weeks	72	70	Interactive Virtual Outpatient Program	Standard Care	Author Reported	. %	. %		Not Significant (P-value>.05)
Piqueras, M., 2013	Moderate Quality	Pain(WOMAC - Pain)	3 months	68	65	Interactive Virtual Outpatient Program	Standard Care	Author Reported	. %	. %		Not Significant (P-value>.05)

PICO 10: Accelerated Postoperative Rehabilitation

Study Quality Evaluation Tables

QE - Intervention - Observational

Study	Design	Participant Recruitment	Allocation	Confounding Variables	Follow-Up Length	Other Bias? (If retrospective comparative, mark Yes)	Inclusion	Strength
Pua, Y. H., 2014							Include	Low Quality

QE - Intervention - Randomized

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Labraca, N. S., 2011							Include	Moderate Quality

Summary of Findings

Figure 52: Summary of Findings-PICO 10 part 1: Accelerated PT vs Non-accelerated PT

	Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Labraca, N. S., 2011
Function	
Function(Muscle Strength - hamstring muscles)	↑
Function(Muscle Strength - quadriceps)	↑
Function(ROM - Extension)	↑
Function(ROM - Flexion)	↑
Function(Tinetti Balance - adaptive)	↓
Function(Tinetti Balance - abnormal)	●
Function(Tinetti Balance - normal)	↑
Function(Tinetti Gait - abnormal)	●
Function(Tinetti Gait - adaptive)	↓
Function(Tinetti Gait - normal)	↑
Other	
Other(Length of Stay)	↑
Other(Barthel Index - 100 (independent))	●
Other(Barthel Index - 40-55 (moderate))	●
Other(Barthel Index - <= 20 (total dependence))	●
Other(Barthel Index - 20-35 (severe))	●
Other(Barthel Index - >=60 (mild))	●
Pain	
Pain(VAS - Pain)	↑

Figure 53: Summary of Findings-PICO 10 part 2: Early PT vs Late PT

	Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Pua, Y. H., 2014
Complications	
Adverse Event(90-day Readmission Rate)	●
Function(Able to Perform Straight Leg Raise)	●
Function(Ability to Achieve 90 degree Knee Flexion)	↑
Length Of Stay	
Other(Adjusted Length of Stay)	↑
Other(Length of Stay)	↑

Detailed Data Tables

Table 165: PICO 10 part 1- Accelerated PT vs Non-accelerated PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Labraca, N. S., 2011	Low Quality	Function(Tinetti Gait - abnormal)		138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Labraca, N. S., 2011	Low Quality	Function(Tinetti Balance - abnormal)	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Labraca, N. S., 2011	Low Quality	Function(Muscle Strength - quadriceps)	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	MeanDiff	3.91(0.56)	3.01(0.52)	0.9(0.77,1.03)	Treatment 1 Significant (P-value<.05)
Labraca, N. S., 2011	Low Quality	Function(ROM - Flexion)	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	MeanDiff	88.11(2.35)	71.82(16.81)	16.29(13.43,19.15)	Treatment 1 Significant (P-value<.05)
Labraca, N. S., 2011	Low Quality	Function(Muscle Strength - hamstring muscles)	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	MeanDiff	4.02(0.82)	2.97(0.59)	1.05(0.88,1.22)	Treatment 1 Significant (P-value<.05)
Labraca, N. S., 2011	Low Quality	Function(ROM - Extension)	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	MeanDiff	0.68(1.84)	2.8(1.10)	-2.12(-2.48,-1.76)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Labraca, N. S., 2011	Low Quality	Function(Tinetti Gait - normal)	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	RR	97.10%	89.63%	1.08(1.02,1.16)	Treatment 1 Significant (P-value<.05)
Labraca, N. S., 2011	Low Quality	Function(Tinetti Balance - normal)	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	RR	98.55%	92.59%	1.06(1.01,1.12)	Treatment 1 Significant (P-value<.05)
Labraca, N. S., 2011	Low Quality	Function(Tinetti Gait - adaptive)	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	RR	2.90%	10.37%	0.28(0.09,0.83)	Treatment 2 Significant (P-value<.05)
Labraca, N. S., 2011	Low Quality	Function(Tinetti Balance - adaptive)	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	RR	1.45%	7.41%	0.20(0.04,0.88)	Treatment 2 Significant (P-value<.05)

Table 166: PICO 10 part 1- Accelerated PT vs Non-accelerated PT: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Labraca, N. S., 2011	Low Quality	Other(Barthel Index - 100 (independent))	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	RR	89.86%	83.70%	1.07(0.98,1.18)	Not Significant (P-value>.05)
Labraca, N. S., 2011	Low Quality	Other(Barthel Index - 40-55 (moderate))	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	RR	4.35%	6.67%	0.65(0.24,1.78)	Not Significant (P-value>.05)
Labraca, N. S., 2011	Low Quality	Other(Barthel Index - <= 20 (total dependence))	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Labraca, N. S., 2011	Low Quality	Other(Barthel Index - 20-35 (severe))	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	RD	0.00%	0.00%	0.00(0.00,0.00)	Not Significant (P-value>.05)
Labraca, N. S., 2011	Low Quality	Other(Barthel Index - >=60 (mild))	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	RR	5.80%	9.63%	0.60(0.26,1.41)	Not Significant (P-value>.05)
Labraca, N. S., 2011	Low Quality	Other(Length of Stay)	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	MeanDiff	6.37(1.16)	8.46(2.63)	-2.09(-2.57,-1.61)	Treatment 1 Significant (P-value<.05)

Table 167: PICO 10 part 1- Accelerated PT vs Non-accelerated PT: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Labraca, N. S., 2011	Low Quality	Pain(VAS - Pain)	Post-Op	138	135	Accelerated Post-Op Mobilization	Non-accelerated Post-Op Mobilization (control)	MeanDiff	3.01(2.35)	5.36(2.54)	-2.35(-2.93,-1.77)	Treatment 1 Significant (P-value<.05)

Table 168: PICO 10 part 2- Early PT vs Late PT: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Pua, Y. H., 2014	Low Quality	Adverse Event(90-day Readmission Rate)	90 days	803	701	Early Ambulation Group	Late Ambulation Group	RR	2.37%	2.14%	1.11(0.57,2.16)	Not Significant (P-value>.05)
Pua, Y. H., 2014	Low Quality	Adverse Event(90-day Readmission Rate)	90 days	.	.	Early Ambulation Group	Late Ambulation Group	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 169: PICO 10 part 2- Early PT vs Late PT: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Pua, Y. H., 2014	Low Quality	Function(Able to Perform Straight Leg Raise)	Discharge	.	.	Early Ambulation Group	Late Ambulation Group	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Pua, Y. H., 2014	Low Quality	Function(Able to Perform Straight Leg Raise)	Discharge	803	701	Early Ambulation Group	Late Ambulation Group	RR	79.83%	80.60%	0.99(0.94,1.04)	Not Significant (P-value>.05)
Pua, Y. H., 2014	Low Quality	Function(Ability to Achieve 90 degree Knee Flexion)	Discharge	803	701	Early Ambulation Group	Late Ambulation Group	RR	65.63%	58.63%	1.12(1.03,1.21)	Treatment 1 Significant (P-value<.05)
Pua, Y. H., 2014	Low Quality	Function(Ability to Achieve 90 degree Knee Flexion)	Discharge	.	.	Early Ambulation Group	Late Ambulation Group	Author Reported	. %	. %	NA	early ambulation was associated Significant (P-value<.05)

Table 170: PICO 10 part 2- Early PT vs Late PT: Other

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Pua, Y. H., 2014	Low Quality	Other(Adjusted Length of Stay)	Discharge	803	701	Early Ambulation Group	Late Ambulation Group	Author Reported	4.07(.)	4.07(.)	-0.44(-0.29,-0.60)	Early ambulation group favore Significant (P-value<.05)
Pua, Y. H., 2014	Low Quality	Other(Length of Stay)	Discharge	803	701	Early Ambulation Group	Late Ambulation Group	Author Reported	4.57(.)	4.57(.)	-0.69(-0.50,-0.87)	Early ambulation group favore Significant (P-value<.05)

PICO 11/12: Postop Discharge Setting

Study Quality Evaluation Tables

QE - Intervention - Randomized

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Inclusion	Strength
Losina, E., 2016	●	◐	○	●	●	●	Include	High Quality
Losina, E., 2017	●	◐	○	◐	●	◐	Include	Moderate Quality

QE - Intervention - Observational

Study	Design	Participant Recruitment	Allocation	Confounding Variables	Follow-Up Length	Other Bias? (If retrospective comparative, mark Yes)	Inclusion	Strength
McLawhorn, A. S., 2017	○	●	●	●	●	◐	Include	Low Quality
Padgett, D. E., 2018	○	●	●	●	●	◐	Include	Low Quality
Tribe, K L, 2005	○	●	◐	●	●	●	Include	Low Quality

Summary of Findings

Figure 54: Summary of Findings-PICO 11/12 part 1: Care Navigator vs No Care Navigator

	Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Losina, E., 2016
Function	
Function(Able to bend knee >=120 degrees)	●
Function(Able to straighten knee completely)	●
Function(Failure to acheive MCID in WOMAC function score)	●
Function(WOMAC Physical Function)	●
Other	
Other(Very satisfied with the results of TKA)	●
Pain	
Pain(WOMAC Pain Score)	●

Figure 55: Summary of Findings-PICO 11/12 part 2: Social Support vs No Social Support

	Moderate Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Losina, E., 2017
Function	
Function(Average Daily Steps)	↑
Function(Weekly Physical Activity)	●

comparisons: 2 Losina compared either coaching, financial incentives or combined financial/coaching to attention control calls. The only significant outcome was average daily steps for combined incentives and coaching compared to control call.

Figure 56: Summary of Findings-PICO 11/12 part 3: Social Support vs Social Support

	Moderate Quality
	Losina, E., 2017
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Function	
Function(Average Daily Steps)	↑
Function(Weekly Physical Activity)	●

comparisons: 3- Losina compared financial incentives + telephonic coaching to ether telephonic coaching alone or financial incentives alone. The only significant outcome was average daily steps, which were higher when both financial incentives and coaching were given than when only coaching was given.

Figure 57: Summary of Findings-PICO 11/12 part 4: Inpatient Discharge vs SNF Discharge

	Low Quality
	Padgett, D. E., 2018
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Complications	
Adverse Event(DVT)	●
Adverse Event(Manipulation)	●
Adverse Event(Dislocation)	●
Adverse Event(Fracture of or around joint arthroplasty)	●
Adverse Event(Infection around joint)	●
Adverse Event(Major bleeding problems)	●
Adverse Event(Needed more surgery)	●
Adverse Event(Pneumonia)	↑
Adverse Event(Pulmonary Embolus)	●
Composite	
Other(WOMAC)	●
Other	
Other(Length of Stay)	●

Figure 58: Summary of Findings-PICO 11/12 part 5: Inpatient Discharge vs Home Discharge

	Low Quality	
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	Padgett, D. E., 2018	Tribe, K L, 2005
Complications		
Adverse Event(DVT)	●	
Adverse Event(Manipulation)	●	
Adverse Event(Dislocation)	●	
Adverse Event(Fracture of or around joint arthroplasty)	↓	
Adverse Event(Infection around joint)	●	
Adverse Event(Major bleeding problems)	●	
Adverse Event(Need for manipulation due to stiffness)	●	
Adverse Event(Needed more surgery)	●	
Adverse Event(Pneumonia)	●	
Adverse Event(Pulmonary Embolus)	●	
Adverse Event(Hospital Readmission)		●
Composite		
Other(WOMAC)	●	
Function(SF-12)	●	
Other(SF-36 sub scales)		●
Function		
Function(WOMAC - Stiffness)		●
Function(WOMAC- Physical Function)		●
Function(Lower Extremity Activity Scale)	●	
Other		
Other(Length of Stay)	↑	
Pain		
Pain(WOMAC - Pain)		↑

Figure 59: Summary of Findings-PICO 11/12 part 6: Non-home Discharge vs Home Discharge

	Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	McLawnhorn, A. S., 2017
Complications	
Adverse Event(Readmission)	↓
Adverse Event(Death)	●
Adverse Event(Wound Complications)	●
Adverse Event(Septic Complications)	↓
Adverse Event(DVT/PE)	↓
Adverse Event(Any Complication(s))	↓
Adverse Event(Any major complication(s))	↓

Detailed Data Tables

Table 171: PICO 12 part 1- Care Navigator vs No Care Navigator: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Losina, E., 2016	Low Quality	Function(Able to straighten knee completely)	6 months	.	.	Care Navigation and Usual Care	Usual Care only (no care navigator)	RR	. %	. %	.(,.)	Not Significant (P-value>.05)
Losina, E., 2016	Low Quality	Function(WOMAC Physical Function)	6 months	133	136	Care Navigation and Usual Care	Usual Care only (no care navigator)	Author Reported	12(.)	13(.)	NA	Not Significant (P-value>.05)
Losina, E., 2016	Low Quality	Function(Failure to achieve MCID in WOMAC function score)	6 months	.	.	Care Navigation and Usual Care	Usual Care only (no care navigator)	RR	. %	. %	.(,.)	Not Significant (P-value>.05)
Losina, E., 2016	Low Quality	Function(Able to bend knee >=120 degrees)	6 months	.	.	Care Navigation and Usual Care	Usual Care only (no care navigator)	RR	. %	. %	.(,.)	Not Significant (P-value>.05)

Table 172: PICO 12 part 1- Care Navigator vs No Care Navigator: Other

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Losina, E., 2016	Low Quality	Other(Very satisfied with the results of TKA)	6 month s	.	.	Care Navigation and Usual Care	Usual Care only (no care navigator)	RR	. %	. %	.(.,.)	Not Significant (P-value>.05)

Table 173: PICO 12 part 1- Care Navigator vs No Care Navigator: Pain

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Losina, E., 2016	Low Quality	Pain(WOMAC Pain Score)	6 month s	133	136	Care Navigation and Usual Care	Usual Care only (no care navigator)	Author Reporte d	11(.)	11(.)	NA	Not Significant (P-value>.05)

Table 174: PICO 12 part 2- Social Support vs No Social Support: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Losina, E., 2017	Moderate Quality	Function(Weekly Physical Activity)	6 months	34	37	Financial Incentives and Telephonic Health Coaching	Attention Control Call	MeanDiff	52(62.47)	28(62.07)	24(-5.00,53.00)	Not Significant (P-value>.05)
Losina, E., 2017	Moderate Quality	Function(Average Daily Steps)	6 months	39	37	Telephonic Health Coaching	Attention Control Call	MeanDiff	5619(2380.11)	6025(2402.07)	-406(-1481.68, 669.68)	Not Significant (P-value>.05)
Losina, E., 2017	Moderate Quality	Function(Weekly Physical Activity)	6 months	39	37	Telephonic Health Coaching	Attention Control Call	MeanDiff	28(60.54)	28(62.07)	0(-27.59,27.59)	Not Significant (P-value>.05)
Losina, E., 2017	Moderate Quality	Function(Weekly Physical Activity)	6 months	40	37	Financial Incentives	Attention Control Call	MeanDiff	30(61.31)	28(62.07)	2(-25.59,29.59)	Not Significant (P-value>.05)
Losina, E., 2017	Moderate Quality	Function(Average Daily Steps)	6 months	40	37	Financial Incentives	Attention Control Call	MeanDiff	6170(2378.16)	6025(2402.07)	145(-923.76, 1213.76)	Not Significant (P-value>.05)
Losina, E., 2017	Moderate Quality	Function(Average Daily Steps)	6 months	34	37	Financial Incentives and Telephonic Health Coaching	Attention Control Call	MeanDiff	7152(2377.01)	6025(2402.07)	1127(14.58,2239.42)	Treatment 1 Significant (P-value<.05)

Table 175: PICO 12 part 3- Social Support vs Social Support: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Losina, E., 2017	Moderate Quality	Function(Weekly Physical Activity)	6 months	34	39	Financial Incentives and Telephonic Health Coaching	Telephonic Health Coaching	MeanDiff	52(62.47)	28(60.54)	24(-4.32,52.32)	Not Significant (P-value>.05)
Losina, E., 2017	Moderate Quality	Function(Weekly Physical Activity)	6 months	34	40	Financial Incentives and Telephonic Health Coaching	Financial Incentives	MeanDiff	52(62.47)	30(61.31)	22(-6.32,50.32)	Not Significant (P-value>.05)
Losina, E., 2017	Moderate Quality	Function(Average Daily Steps)	6 months	34	40	Financial Incentives and Telephonic Health Coaching	Financial Incentives	MeanDiff	7152(2377.01)	6170(2378.16)	982(-105.00,2069.00)	Not Significant (P-value>.05)
Losina, E., 2017	Moderate Quality	Function(Weekly Physical Activity)	6 months	39	40	Telephonic Health Coaching	Financial Incentives	MeanDiff	28(60.54)	30(61.31)	-2(-28.87,24.87)	Not Significant (P-value>.05)
Losina, E., 2017	Moderate Quality	Function(Average Daily Steps)	6 months	39	40	Telephonic Health Coaching	Financial Incentives	MeanDiff	5619(2380.11)	6170(2378.16)	-551(-1600.37,498.37)	Not Significant (P-value>.05)
Losina, E., 2017	Moderate Quality	Function(Average Daily Steps)	6 months	34	39	Financial Incentives and Telephonic Health Coaching	Telephonic Health Coaching	MeanDiff	7152(2377.01)	5619(2380.11)	1533(439.19,2626.81)	Treatment 1 Significant (P-value<.05)

Table 176: PICO 11 part 4- Inpatient Discharge vs SNF Discharge: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Padgett, D. E., 2018	Low Quality	Adverse Event(Dislocation)	6 months	492	492	Inpatient Rehab 2	SNF or Equivalent	RD	0.20%	0.00%	0.00(-0.00,0.01)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(DVT)	6 months	492	492	Inpatient Rehab 2	SNF or Equivalent	RR	1.02%	1.63%	0.63(0.21,1.90)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Fracture of or around joint arthroplasty)	6 months	492	492	Inpatient Rehab 2	SNF or Equivalent	RR	0.61%	0.41%	1.50(0.25,8.94)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Infection around joint)	6 months	492	492	Inpatient Rehab 2	SNF or Equivalent	RR	1.83%	2.64%	0.69(0.30,1.60)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Major bleeding problems)	6 months	492	492	Inpatient Rehab 2	SNF or Equivalent	RR	1.02%	1.83%	0.56(0.19,1.65)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Padgett, D. E., 2018	Low Quality	Adverse Event(Manipulation)	Post-Op	492	492	Inpatient Rehab 2	SNF or Equivalent	RR	4.07%	4.47%	0.91(0.50,1.64)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Needed more surgery)	6 months	492	492	Inpatient Rehab 2	SNF or Equivalent	RR	2.85%	2.85%	1.00(0.48,2.08)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Pneumonia)	6 months	492	492	Inpatient Rehab 2	SNF or Equivalent	RR	0.41%	1.83%	0.22(0.05,1.02)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Pulmonary Embolus)	6 months	492	492	Inpatient Rehab 2	SNF or Equivalent	RR	0.20%	0.81%	0.25(0.03,2.23)	Treatment 1 Significant (P-value<.05)

Table 177: PICO 11 part 4- Inpatient Discharge vs SNF Discharge: Composite

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Padgett, D. E., 2018	Low Quality	Other(WOMAC)	2 years	492	492	Inpatient Rehab 2	SNF or Equivalent	Author Reporte d	. %	. %	NA	Not Significant (P-value>.05)

Table 178: PICO 11 part 4- Inpatient Discharge vs SNF Discharge: Other

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Padgett, D. E., 2018	Low Quality	Other(Length of Stay)	Discha rge	492	492	Inpatient Rehab 2	SNF or Equivalent	MeanDi f	5.1(1.70)	5.1(1.90)	0(- 0.23,0.2 3)	Not Significant (P-value>.05)

Table 179: PICO 11 part 5- Inpatient Discharge vs Home Discharge: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Padgett, D. E., 2018	Low Quality	Adverse Event(Dislocation)	6 months	1213	1213	Inpatient Rehab	Discharge Home	RR	0.25%	0.58%	0.43(0.11,1.65)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(DVT)	6 months	1213	1213	Inpatient Rehab	Discharge Home	RR	0.91%	1.32%	0.69(0.32,1.48)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Fracture of or around joint arthroplasty)	6 months	1213	1213	Inpatient Rehab	Discharge Home	RR	0.58%	0.08%	7.00(0.86,56.81)	Treatment 2 Significant (P-value<.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Infection around joint)	6 months	1213	1213	Inpatient Rehab	Discharge Home	RR	1.48%	1.73%	0.86(0.46,1.60)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Major bleeding problems)	6 months	1213	1213	Inpatient Rehab	Discharge Home	RR	1.40%	0.74%	1.89(0.85,4.22)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Manipulation)	Post-Op	1213	1213	Inpatient Rehab	Discharge Home	RR	4.04%	3.96%	1.02(0.69,1.51)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Need for manipulation due to stiffness)	2 years	.	.	Inpatient Rehab	Discharge Home	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Needed more surgery)	6 months	1213	1213	Inpatient Rehab	Discharge Home	RR	1.98%	1.90%	1.04(0.59,1.84)	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Adverse Event(Pneumonia)	6 months	1213	1213	Inpatient Rehab	Discharge Home	RR	0.82%	0.82%	1.00(0.42,2.39)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Padgett, D. E., 2018	Low Quality	Adverse Event(Pulmonary Embolus)	6 months	1213	1213	Inpatient Rehab	Discharge Home	RR	0.74%	0.82%	0.90(0.37,2.21)	Not Significant (P-value>.05)
Tribe, K L, 2005	Low Quality	Adverse Event(Hospital Readmission)	1 year	21	49	Inpatient Rehabilitation	Home Rehabilitation	RR	9.52%	6.12%	1.56(0.28,8.64)	Not Significant (P-value>.05)

Table 180: PICO 11 part 5- Inpatient Discharge vs Home Discharge: Composite

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Padgett, D. E., 2018	Low Quality	Function(Lower Extremity Activity Scale)	2 years	1213	1213	Inpatient Rehab	Discharge Home	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Padgett, D. E., 2018	Low Quality	Other(WOMAC)	2 years	1213	1213	Inpatient Rehab	Discharge Home	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Tribe, K L, 2005	Low Quality	Other(SF-36 sub scales)	NR	21	49	Inpatient Rehabilitation	Home Rehabilitation	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 181: PICO 11 part 5- Inpatient Discharge vs Home Discharge: Function

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Padgett, D. E., 2018	Low Quality	Function(SF-12)	2 years	1213	1213	Inpatient Rehab	Discharge Home	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Tribe, K L, 2005	Low Quality	Function(WOMAC- Physical Function)	3 months	21	49	Inpatient Rehabilitation	Home Rehabilitation	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Tribe, K L, 2005	Low Quality	Function(WOMAC - Stiffness)	3 months	21	49	Inpatient Rehabilitation	Home Rehabilitation	Author Reported	. %	. %	NA	Not Significant (P-value>.05)

Table 182: PICO 11 part 5- Inpatient Discharge vs Home Discharge: Other

Reference Title	Quality	Outcome Details	Durati on	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Padgett, D. E., 2018	Low Quality	Other(Length of Stay)	Discha rge	121 3	121 3	Inpatient Rehab	Discharge Home	MeanDi f	5(1.50)	5.4(1.70)	-0.4(- 0.53,- 0.27)	Treatment 1 Significant (P-value<.05)

Table 183: PICO 11 part 5- Inpatient Discharge vs Home Discharge: Pain

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
Tribe, K L, 2005	Low Quality	Pain(WOMAC - Pain)	3 months	21	49	Inpatient Rehabilitation	Home Rehabilitation	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
Tribe, K L, 2005	Low Quality	Pain(WOMAC - Pain)	12 months	70	70	Inpatient Rehabilitation	Home Rehabilitation	Author Reported	. %	. %	-15.61(-28.73,-2.49)	Rehab group improved significantly more Significant (P-value<.05)

Table 184: PICO 11 part 6- Non-home Discharge vs Home Discharge: Complications

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
McLawhorn, A. S., 2017	Low Quality	Adverse Event(Wound Complications)	30 days	.	.	Discharge to Nonhome Facility vs Discharge to Home	Discharge to Nonhome Facility vs Discharge to Home	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
McLawhorn, A. S., 2017	Low Quality	Adverse Event(Death)	30 days	.	.	Discharge to Nonhome Facility vs Discharge to Home	Discharge to Nonhome Facility vs Discharge to Home	Author Reported	. %	. %	NA	Not Significant (P-value>.05)
McLawhorn, A. S., 2017	Low Quality	Adverse Event(Septic Complications)	30 days	.	.	Discharge to Nonhome Facility vs Discharge to Home	Discharge to Nonhome Facility vs Discharge to Home	Author Reported	. %	. %	NA	Patients discharged to skilled Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	N	Treatment (Details)1	Treatment (Details)2	Statistic	Mean (SD)1	Mean (SD)2	Result	Significance
McLawhorn, A. S., 2017	Low Quality	Adverse Event(DVT/PE)	30 days	.	.	Discharge to Nonhome Facility vs Discharge to Home	Discharge to Nonhome Facility vs Discharge to Home	Author Reported	. %	. %	NA	Patients discharged to skilled Significant (P-value<.05)
McLawhorn, A. S., 2017	Low Quality	Adverse Event(Readmission)	30 days	.	.	Discharge to Nonhome Facility vs Discharge to Home	Discharge to Nonhome Facility vs Discharge to Home	Author Reported	. %	. %	NA	Patients discharged to skilled Significant (P-value<.05)
McLawhorn, A. S., 2017	Low Quality	Adverse Event(Any Complication(s))	30 days	.	.	Discharge to Nonhome Facility vs Discharge to Home	Discharge to Nonhome Facility vs Discharge to Home	Author Reported	. %	. %	NA	Patients discharged to skilled Significant (P-value<.05)
McLawhorn, A. S., 2017	Low Quality	Adverse Event(Any major complication(s))	30 days	.	.	Discharge to Nonhome Facility vs Discharge to Home	Discharge to Nonhome Facility vs Discharge to Home	Author Reported	. %	. %	NA	Patients discharged to skilled Significant (P-value<.05)