

Supplementary Online Content

Buhagiar MA, Naylor JM, Harris IA, Xuan W, Adie S, Lewin A. Assessment of outcomes of inpatient or clinic-based vs home-based rehabilitation after total knee arthroplasty: a systematic review and meta-analysis. *JAMA Netw Open*. 2019;2(4):e192810. doi:10.1001/jamanetworkopen.2019.2810

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

eMethods 1. Search Strings for Systematic Review and Meta-analysis

Medline

No	Searches
1	exp Rehabilitation/
2	(rehabilit* or habilitat*).mp.
3	exp Physical Therapy Modalities/
4	(physical therap* or physiotherap*).mp.
5	1 or 2 or 3 or 4
6	Arthroplasty, Replacement, Knee/
7	Knee Prosthesis/
8	Knee Joint/
9	Knee/
10	Osteoarthritis, Knee/
11	exp Arthroplasty/
12	Joint Prosthesis/
13	8 or 9 or 10
14	11 or 12
15	13 and 14
16	6 or 7 or 15
17	((arthroplast* or replac* or prosthe*) and knee).mp.
18	16 or 17
19	5 and 18
20	Randomized Controlled Trials as Topic/
21	randomized controlled trial/
22	Random Allocation/
23	Double Blind Method/
24	Single Blind Method/
25	clinical trial/
26	clinical trial, phase i.pt.
27	clinical trial, phase ii.pt.
28	clinical trial, phase iii.pt.
29	clinical trial, phase iv.pt.
30	randomized controlled trial.pt.
31	multicenter study.pt.

32	clinical trial.pt.
33	exp Clinical Trial as Topic/
34	controlled clinical trial.pt.
35	or/20-34
36	(clinical adj trial\$.tw.
37	((singl\$ or doubl\$ or treb\$ or tripl\$) adj (blind\$3 or mask\$3)).tw.
38	PLACEBOS/
39	placebo\$.tw.
40	randomly allocated.tw.
41	(allocated adj2 random\$).tw.
42	or/36-41
43	35 or 42
44	case report.tw.
45	letter/
46	historical article/
47	or/44-46
48	43 not 47
49	19 and 48

EMBASE

1	exp Rehabilitation/
2	(rehabilit* or habilitat*).mp.
3	exp physiotherapy/
4	(physical therap* or physiotherap*).mp.
5	or/1-4
6	Knee Arthroplasty/
7	Total Knee Replacement/
8	Knee Joint/
9	exp Arthroplasty/
10	Joint Prosthesis/
11	9 or 10
12	8 and 11
13	6 or 7 or 12
14	((arthroplast* or replac* or prosthe*) and knee).mp.
15	13 or 14

16	5 and 15
17	clinical trial/
18	randomized controlled trial/
19	randomization/
20	single blind procedure/
21	double blind procedure/
22	crossover procedure/
23	placebo/
24	randomi?ed controlled trial\$.tw.
25	rct.tw.
26	random allocation.tw.
27	randomly allocated.tw.
28	allocated randomly.tw.
29	(allocated adj2 random).tw.
30	single blind\$.tw.
31	double blind\$.tw.
32	((treble or triple) adj blind\$).tw.
33	placebo\$.tw.
34	prospective study/
35	or/17-34
36	case study/
37	case report.tw.
38	abstract report/ or letter/
39	or/36-38
40	35 not 39
41	16 and 40

eMethods 2. Studies Excluded After Full-Text Review

1. Han A, Nairn L, Harmer A, et al. Early rehabilitation after total knee replacement surgery: a multicenter, noninferiority, randomized clinical trial comparing a home exercise program with usual Outpatient Care. *Arthritis Care Res.* 2015;67(2):196–202.
2. Hensman-Crook A. The effectiveness of physiotherapy intervention with home exercise programme versus patient directed home exercise program following total knee replacement. *Intern Med J.* 2011;41(Suppl. 1):39.
3. López-Liria R, Padilla-Góngora D, Catalan-Matamoros D, et al. Home-based versus hospital-based rehabilitation program after total knee replacement. *Biomed Res Int.* 2015;450421.
4. Mahomed N, Davis A, Hawker G, et al. Inpatient compared with home-based rehabilitation following primary unilateral total hip or knee replacement: a randomized controlled trial. *J Bone Joint Surg Am.* 2008;90:1673-80.
5. Moffet H, Tousignant M, Nadeau S, et al. In-home telerehabilitation compared with face-to-face rehabilitation after total knee arthroplasty: a noninferiority randomized controlled trial. *J Bone Joint Surg Am.* 2015;97:1129-41.
6. Piqueras M, Marco E, Coll M, et al. Effectiveness of an interactive virtual telerehabilitation system in patients after total knee arthroplasty: A Randomized Controlled Trial. *J Rehabil Med.* 2013;45:392–396.
7. Russell T, Buttrum P, Wootton R, Jull G. Low-bandwidth telerehabilitation for patients who have undergone total knee replacement: preliminary results. *J Telemed Telecare.* 2003; 9 (Suppl. 2): S2:44–47

8. Tousignant M, Moffet H, Boissy P, et al. A randomized controlled trial of home telerehabilitation for post-knee arthroplasty. *J Telemed Telecare*. 2011; 17: 195–198
9. Wylde V, Artz S, Dixon E et al. Effectiveness and cost-effectiveness of a group-based outpatient physiotherapy intervention following knee replacement for osteoarthritis: feasibility study for a randomized controlled trial. *Osteoarthritis Cartilage*. 2014;22:S433.

eTable1. PEDro Scores of Included Studies

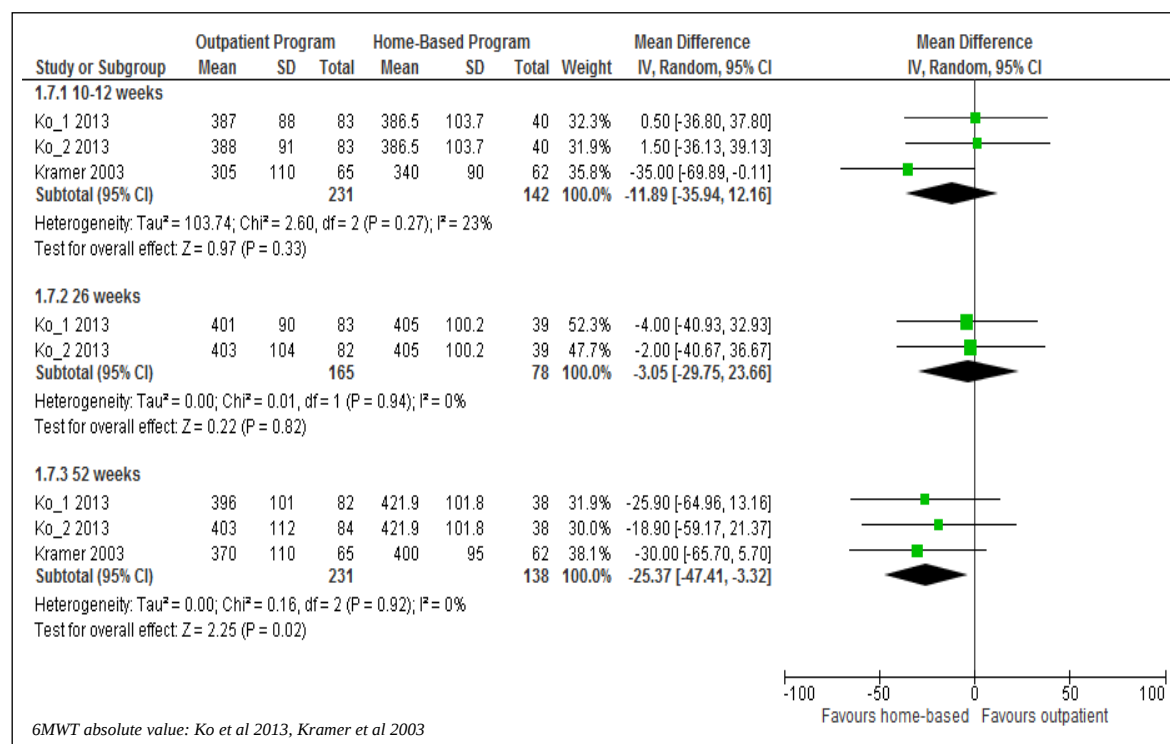
Study	Random allocation	Concealed allocation	Groups similar at baseline	Participant blinding	Therapist blinding	Assessor blinding	< 15% dropouts	Intention-to-treat analysis	Between- group difference reported	Point estimate and variability reported	Total (0 to 10)
Buhagiar et al (2017) ¹⁶	Y	Y	Y	N	N	Y	Y	Y	Y	Y	8
Ko et al (2013) ¹⁷	Y	Y	Y	N	N	Y	Y	Y	Y	Y	8
Kramer et al (2003) ³²	Y	N	Y	N	N	Y	N	Y	Y	Y	6
Madsen et al (2013) ³³	Y	Y	Y	N	N	Y	Y	N	Y	Y	7
Mockford et al (2008) ³⁴	Y	N	Y	N	N	N	Y	Y	Y	N	5
Rajan et al (2004) ³⁵	Y	N	Y	N	N	Y	Y	Y	Y	Y	7

eTable 2. Meta-analysis Data

	Studies	Patients	Pooled effect size (95% CI)	P-value	I ² (%)
Outpatient group or one-to-one physiotherapy compared with home-based program					
<i>Mobility (MD in metres)</i>					
10-12 week follow up	3	373	-11.89 [-35.94, 12.16]	0.33	23
26 week follow up	2	243	-3.05 [-29.75, 23.66]	0.82	0
52 week follow up	3	369	-25.37 [-47.41, -3.32]	0.02	0
<i>Patient-reported pain and function (SMD)</i>					
10-12 week follow up	4	457	-0.15 [-0.35, 0.05]	0.14	6
26 week follow up	3	313	0.05 [-0.18, 0.28]	0.68	0
52 week follow up	4	515	0.10 [-0.14, 0.34]	0.27	24
<i>Patient-reported quality of life (MD)</i>					
10-12 week follow up	3	314	-0.12 [-0.35, 0.11]	0.31	0
26 week follow up	3	313	-0.16 [-0.48, 0.16]	0.33	45
52 week follow up	2	242	-0.19 [-0.47, 0.08]	0.16	0
<i>Active knee flexion (MD)</i>					
10-12 week follow up	3	386	1.60 [-1.93, 5.13]	0.37	61
26 week follow up	1	114	2.28 [-1.61, 6.16]	0.25	55
52 week follow up	3	386	0.88 [-1.35, 3.10]	0.44	14
<i>Active knee extension (MD)</i>					
52 week follow up	1	143	-0.20 [-1.32, 0.92]	0.73	N/A
<i>Passive knee range of motion (MD)</i>					
10-12 week follow up	3	314	0.30 [-3.85, 4.44]	0.89	0
26 week follow up	3	313	4.22 [-0.33, 8.76]	0.07	0
52 week follow up	2	242	3.40 [-2.52, 9.31]	0.26	0

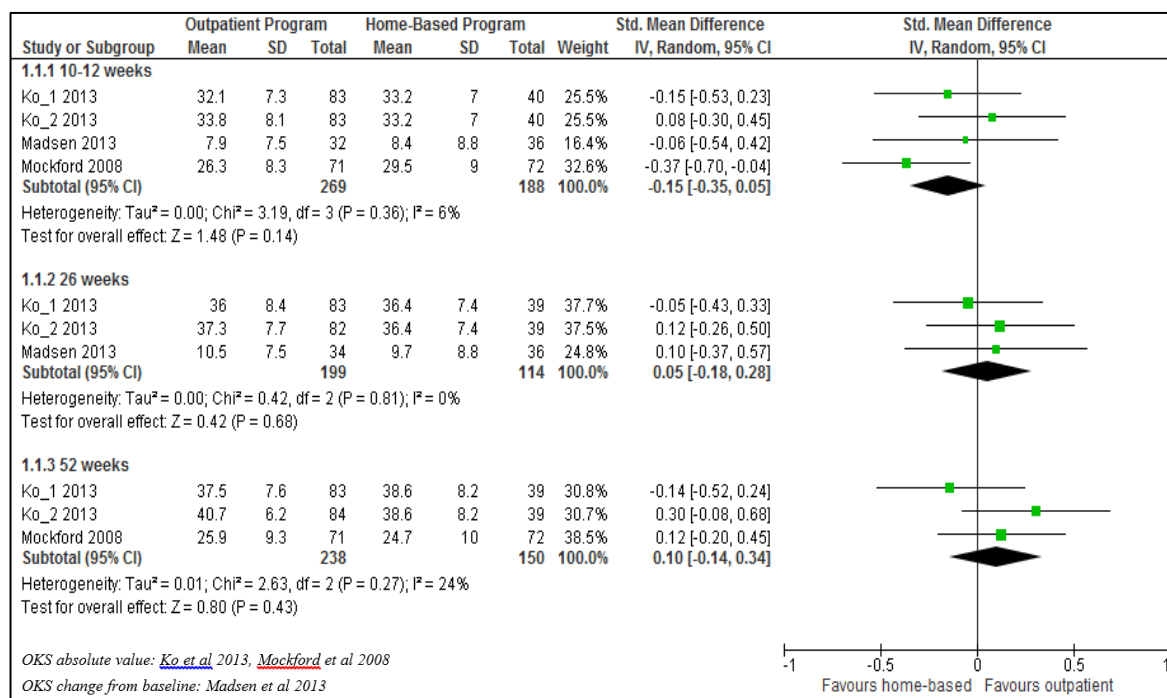
CI = confidence interval; MD = mean difference; SMD = standardised mean difference

eFigure 1. Mobility



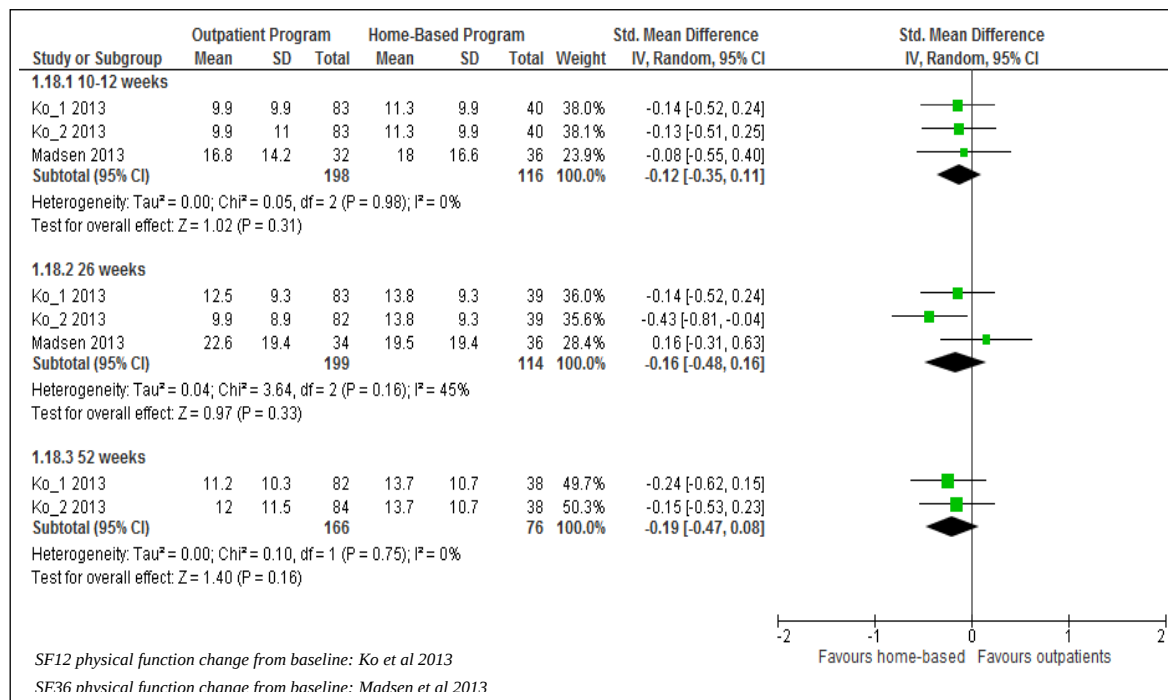
6MWT = 6 minute walk test; CI = confidence interval; df = degrees of freedom; IV = inverse variance; SD = standard deviation

eFigure 2. Patient-Reported Pain and Function



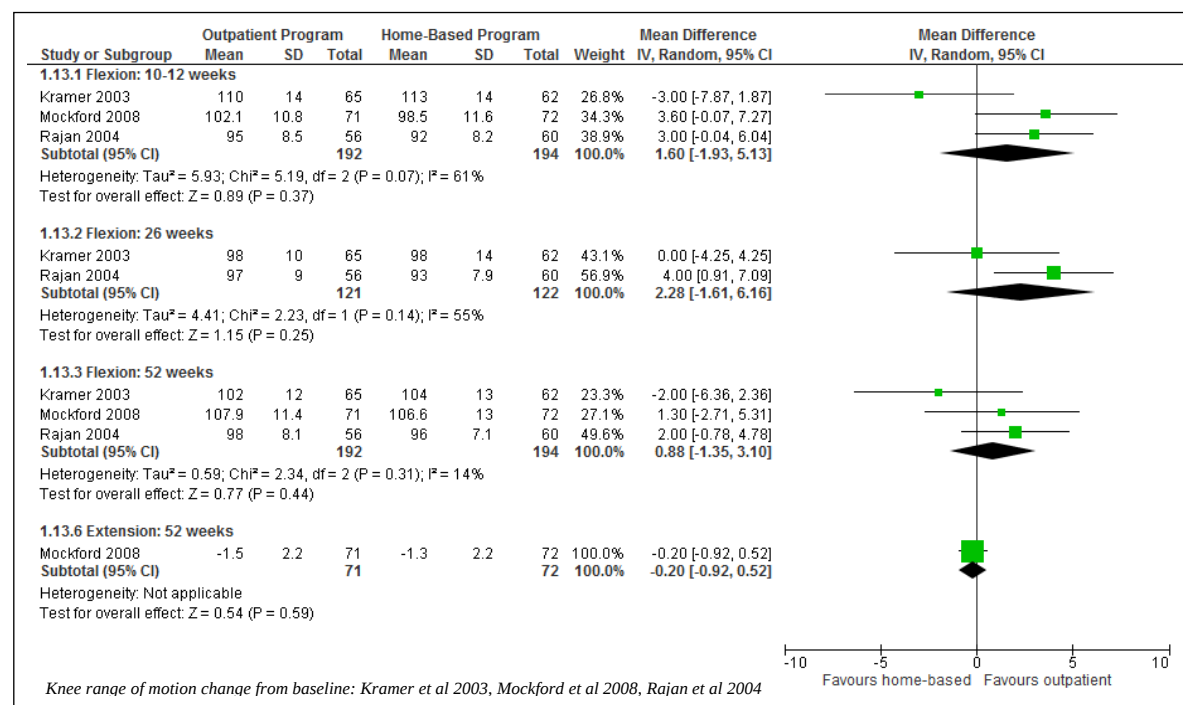
CI = confidence interval; df = degrees of freedom; IV = inverse variance; OKS = Oxford Knee Score; SD = standard deviation;

eFigure 3. Patient-Reported Quality of Life



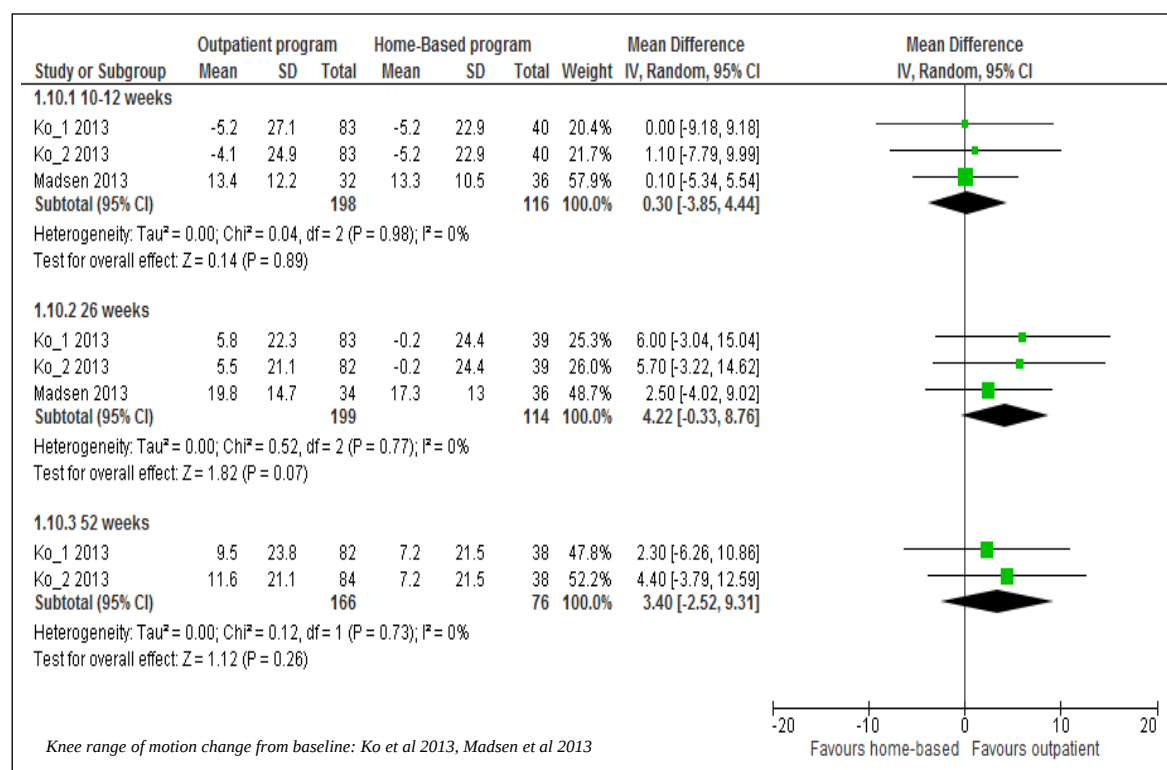
CI = confidence interval; df = degrees of freedom; IV = inverse variance; SD = standard deviation; SF-12 = Short Form 12; SF-36 = Short Form 36;

eFigure 4. Active Range of Motion



CI = confidence interval; df = degrees of freedom; IV = inverse variance; SD = standard deviation;

eFigure 5. Passive Range of Motion Change From Baseline



CI = confidence interval; df = degrees of freedom; IV = inverse variance; SD = standard deviation