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Original research

The Impact of Room-Sharing on Length of Stay After Total Hip or Knee Arthroplasty: A Retrospective Study

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ABSTRACT

Background: Prolonged length of stay (LOS) after elective total hip (THA) and knee (TKA) arthroplasty is often associated with worse patient outcomes. Social support through room-sharing has been identified as a factor that may reduce LOS in a hospital setting, but has not yet been examined in an orthopedic population. The aim of this study was to evaluate the effect of single- vs shared-room accommodation after elective TKA or THA on hospital LOS.
Method: A retrospective study was conducted using data from hospital medical records at our institution. Patients receiving unilateral, elective THA or TKA over a 2-year period were eligible. Patients were allocated to either a single room or four-bed shared room. The primary outcome was LOS; secondary outcomes included complications, discharge destination, and return to operating theater.
Results: One hundred eighty-five patients (70 THA, 115 TKA; mean age 65.74 ± 10.38, 59% female) were included, of whom 82 were allocated to a single room and 103 to a shared room. There was no statistically significant difference in LOS between the 2 groups (5.18 ± 2.21 days [single] vs 4.88 ± 2.12 days [shared]; mean difference −0.29 [95% CI −0.92-0.33], $P = .36$). Analysis modeling for multiple confounders found no association among room allocation, LOS, and discharge destination. However, more patients in single rooms required discharge to rehabilitation (27% vs 9%) and return to theater (7% vs 1%).
Conclusions: Room allocation did not correlate with a difference in LOS in patients undergoing elective THA or TKA.

Introduction

Prolonged length of stay (LOS) has been associated with increased rates of nosocomial infections, medical complications, and poorer surgical and patient-reported outcomes (PROMs) [1-3]. Factors that impact LOS in elective orthopedics have been identified, including patient factors (eg, BMI, smoking, age, sex, comorbidities, social support) [4-8], procedure factors (eg, surgeon experience, drain use, use of blocks or local anesthetic infiltration) [9-12], postprocedural protocols (eg, early mobilization) [6], and hospital factors (eg, volume, orthopedics-specialized ward) [13,14].

The importance of a social support network in improving function and reducing LOS after joint replacement has been highlighted as a potentially important patient indicator [15]. However, this has been based on research involving established family and friendship networks in the community, rather than within the hospital setting.

A growing body of literature acknowledges the importance of creating patient-friendly hospital environments, including the effect of single and shared rooming on hospital inpatient experience and outcomes [16]. Chaudry et al. (2005) in their systematic review identified reduced nosocomial infection rates and cost-savings with single-room environments compared with multiple-occupancy rooms [17]. Their findings of improved patient perception of quality of health care and general satisfaction ratings compared with shared-room counterparts have been supported in the literature [18]. However, recent studies of nonorthopedic

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populations indicate that shared-room accommodation is associated with earlier ambulation, reduced LOS, and may be preferred by patients, seeing the company of strangers as a positive experience [19-21].

No research to date has examined the effect of inpatient room-sharing specifically in the orthopedic population. Therefore, the purpose of this study was to examine the effect of room-sharing on LOS in the elective orthopedic arthroplasty population. Secondary outcomes examined the effect of room-sharing on discharge destination, complications, and return to theater.

Material and methods

Study design

We undertook a retrospective review of subjects undergoing elective primary unilateral total knee (TKA) and total hip (THA) arthroplasties performed by a single surgeon between January 1, 2015, and December 31, 2016, at the study site.

A literature review was first undertaken on factors known in orthopedic arthroplasty literature to impact on LOS (the primary outcome). These factors represented potential confounding variables. Where possible, these were designed out, such as in the choice of ward, infection status of included patients, and the single-surgeon approach. Where it was not possible to use study design to control for confounding variables, data were collected to allow statistical modeling to examine and account for their effects. Other variables identified by the senior author (an experienced orthopedic surgeon) as clinically relevant (eg, complications, discharge destination) or likely to be confounding (eg, prosthesis, anesthetic type) were also collected. Key variables extracted included room allocation, demographics (sex, age, marital status, insurance status), procedural information (operation, prosthesis, anesthetic), and outcomes of interest (LOS, discharge destination, complications).

After obtaining approval from our local Human Research Ethics Committee (LNR/17/RPAH/12), patients were identified through an institutional database via International Classification of Diseases 10th Revision, Clinical Modification (ICD-10-CM) codes and operating surgeon. All data were extracted from existing electronic and paper patient records into a predesigned spreadsheet and imported into SPSS 24.0 (SPSS Inc., Chicago, IL) for analysis. As the data were deidentified at extraction and from precollected records, no informed consent was deemed necessary.

As no current data are available with respect to the impact of room allocation on LOS in this population, an a priori power calculation was made. This was based on detecting a 1-day difference in LOS between groups, requiring 126 patients (63 per arm; $\alpha = 0.05$, $\beta = 0.2$, $1\text{-}\beta = 0.8$).

Eligibility criteria

Patients who underwent a THA or TKA, admitted to the orthopedic ward under the senior author within the study timeframe were screened for eligibility (Fig. S1). Inclusion criteria were primary, elective unilateral THA or TKA. Patients were excluded if their postoperative care was not solely undertaken on the study ward or if patients had been transferred between a shared and a single room during their admission. Patients who received bilateral arthroplasties, revision THA or revision TKA, or surgeries other than primary THA and TKA, were excluded.

THA and TKA surgeries

THAs were routinely performed using anterolateral approach and conventional instrumentation. A mixture of cemented (Exeter/Trident; Stryker, USA); n = 4) and uncemented (Pinnacle/Corail; DepuySynthes, USA); n = 66) prostheses were used. TKAs were routinely performed by the same surgeon using a medial parapatellar approach. A tourniquet was used for most surgeries unless the patient had vascular contraindications. Computer navigation was used in the vast majority of cases using the Stryker Articular Surface Mounted platform. Infiltration of tranexamic acid, adrenaline, and local anesthetic infiltration were used in all cases. Wound drains were not routinely used, and all patients followed a standardized clinical pathway with day 1 mobilization. An enhanced recovery protocol was not in use at our institution during this time.

Outcomes of interest

The primary outcome was LOS, calculated from arrival to the postoperative ward until the time of discharge. Secondary outcomes comprised the development of thromboembolic events, wound infections (superficial and deep), other medical complications within 30 days, as well as return to operating theater within 6 weeks. These events were gathered from electronic patient records. Discharge destination to home or rehabilitation was recorded.

Data analysis

Descriptive statistics for demographic and operative outcomes were calculated for hip and knee arthroplasty. Univariable associations between identified confounding factors such as ASA, smoking history, and insurance status were assessed using chi-squared tests. Patient age and data for continuous outcomes such as LOS and BMI were assessed using t-tests, with $P < .05$ considered significant. Regression analyses were used to examine for associations between room allocation and LOS (linear regression) and discharge to rehabilitation (binary logistic regression), adjusting for potential confounders. Selection of variables for univariable analysis was based on existing literature on confounders and clinical relevance. Variables at or approaching significance at univariable analysis (cutoff set at $P < .20$) were included in multivariable analysis. A P value < .05 was accepted as significant for multivariable analysis. Analyses were performed in consultation with an experienced and qualified biostatistician.

Results

Patient characteristics

A total of 185 patients were included in this retrospective analysis (Supplementary Table S1). These comprised 70 THAs and 115 TKAs. A total of 82 patients were allocated to single rooms, and 103 patients were allocated to a shared room. A difference between cohorts was noted for the variables of sex (single room 68% female vs shared room 51% female; $P = .02$) and insurance status (single room 62% privately insured vs shared room 9% privately insured; $P = .00$).

Primary outcome: LOS

A mean difference of 0.29 days (95% CI −0.92 to 0.33; $P = .36$) between average LOS in the shared-room group (4.88 ± 2.12 days) and single-room group (5.18 ± 2.21 days) was found (Table 1). However, linear regression analysis further determined that there

Table 1
Primary and secondary outcomes.

Outcome	Single room (SD) (% age), n = 82	Shared room (SD), n = 103	P value
Average LOS	5.18 (2.21)	4.88 (2.12)	.36
THA (n = 70)	5.41 (2.81)	5.22 (1.89)	.73
TKA (n = 115)	5.46 (1.74)	5.22 (2.25)	.55
Discharge to rehabilitation	22 (27%)	9 (9%)	**.002**
Thromboembolic event[a]	1 (1%)	2 (2%)	.70
Superficial wound infection[a]	0 (0%)	2 (2%)	.21
Deep wound infection[a]	0 (0%)	0 (0%)	
Medical complication[a]	1 (1%)	2 (2%)	.70
Return to theatre[b]	6 (7%)	1 (1%)	**.03**

The bold *P* values denote statistical significance ($P < .05$).
[a] Within 30 days.
[b] Within 6 weeks.

was no relationship between room allocation and LOS (Table 2); after a multivariable analysis, only sex was found to correlate significantly with LOS (Table 2).

Secondary outcomes: discharge destination, complications, and return to theater

A significantly larger proportion of patients in single rooms were discharged to rehabilitation (27% single room vs 9% shared room; $P = .002$; Table 1). Only BMI and insurance status were found to be significant correlations at multivariable analysis (Table 3).

Rates of thromboembolic disease, superficial wound infection, and medical complications within 30 days were similar between groups and generally low (Table 1). Seven patients in total required return to theaters (single room [n = 6] vs shared room [n = 1]; $P = .03$; Table 1). In the shared-room cohort, one patient required return to theater for manipulation under anesthetic (MUA) for stiffness. In the single-room cohort, 3 patients required MUA, 2 required evacuation of hematoma, and one required washout of a superficial wound infection.

Discussion

This study did not demonstrate a difference between groups allocated to single rooms or shared rooms in terms of the primary outcome, LOS. Regression analysis confirmed that room allocation was not associated with LOS; multivariate analysis showed that female sex was the most significant independent variable impacting LOS, a finding which fits with established literature [5-7]. The rate of discharge to inpatient rehabilitation was higher in the single-room cohort (27% vs 9% in shared-room allocation discharged directly to rehabilitation rather than home). As indicated by our regression analysis, this is most likely reflective of an increased proportion of private patients in this group (62% vs 9%) discharging to private rehabilitation, rather than a reflection of room allocation. More patients in the single-room cohort required return to theater within 6 weeks ($P = .03$); however, given the low rates of complications in both cohorts, and that half of these events were MUAs, for which there is evidence of benefit in early return to theater [22], this result should be interpreted with caution.

Most of the available literature on room-sharing is centered on the patient's subjective experience and preference. It is widely believed that the facilitation of patient-patient interaction affects the overall satisfaction of their hospital experience [17-19,23]. Our study is one of the few specifically examining the potential impacts of room-sharing on postoperative outcomes, and the first to explore this in the orthopedic population. The effect of room-sharing on functional patient outcomes was first examined in elective coronary bypass patients by Kulik et al. [21], who demonstrated reductions in anxiety, LOS, and earlier ambulation when roomed with another patient undergoing a similar procedure. They postulated that access to a roommate experiencing similar stressors (eg, arthroplasty) allowed patients to achieve "cognitive clarity," reduce the perceived threat, and so perform better and discharge earlier. While our study found no objective disadvantage to the use of shared rooms and in fact showed a reduction in the need for inpatient rehabilitation in this cohort, we were unable to demonstrate a relationship between LOS and room-sharing in the elective orthopedic population. A possible explanation for this is that in our study, there were significantly more private patients allocated to single rooms (62% of single room vs 9% shared room were private patients), which may represent a source of selection bias. However, this was addressed with regression analysis, showing that private insurance status had no significant impact on LOS. It was also observed that a significantly higher proportion of patients in single rooms were discharged to rehabilitation, which may have skewed our LOS result as we could not access data on how long these patients remained inpatient at rehabilitation facilities. Furthermore, the larger number of patients requiring discharge to rehabilitation in the single-room cohort may reflect a poorer level of function achieved in the same time than the shared-room cohort. This would fit with Kulik's findings that patients in shared rooms had improved ambulation scores [21]. Unfortunately, data on functional status at discharge were not available for our analysis.

Strengths

LOS is influenced by a large number of potential variables [5,6,24] that may confound the detection of a true effect. This remains a challenge when using LOS as an outcome measure. A strength of this study is that we performed a rigorous literature review to identify factors that impact LOS in the arthroplasty population. We were hence able to eliminate many of these potential sources of confounding via the study design and our novel data set, using a high-volume surgeon performing hip and knee arthroplasties within a unique environment where many of the identified confounding variables were eliminated. For example, investigating LOS of patients under a single, highly experienced surgeon allowed us to minimize differences in surgical approach, technique, and surgeon experience [25]. The use of a single elective surgical ward controlled for established confounders such as volume [14], methicillin-resistant Staphylococcus aureus infection status [26], specialization [13], and differences in preoperative and postoperative protocols [6,27]. The remainder of preidentified potential confounding variables which were unable to be eliminated by study design were accounted for via statistical methods. A multivariable analysis was performed to account for the effect of confounders identified in the literature, allowing for more reliable estimates of effect of room-sharing on LOS. We were able to capture data on subacute secondary outcomes such as complications and return to theater, while limiting potential sources of selection, observer, and attrition bias.

Limitations

The retrospective design of this study has inherent weaknesses. Measurement error can occur as the data used were precollected and not part of an established study design. Furthermore, during the study period, routine PROMs and functional measures at discharge were not collected, limiting our ability to draw conclusions on these outcomes. This should be considered in future studies. Although we expected the difference

Table 2
Univariable and multivariable analysis for LOS (primary outcome).

Characteristic	Univariable			Multivariable		
	Marginal mean (95% CI)	Mean difference (95% CI)	P	Marginal mean (95% CI)	Mean difference (95% CI)	P
Age		0.01 (−0.02-0.04)	.64			
BMI		0.02 (−0.03-0.07)	.38			
Number of comorbidities		0.23 (0.09-0.37)	.001[a]		0.14 (−0.07-0.34)	.20
ASA			.07[a]			.93
1	4.22 (3.35-5.09)	−1.18 (−2.19- −0.16)		5.84 (4.41-7.27)	−0.004 (−1.31-1.30)	
2	4.95 (4.53-5.37)	−0.44 (−1.11-0.23)		5.72 (4.64-6.81)	−0.12 (−0.89-0.93)	
3	5.34 (4.87-5.92)	REF		5.84 (4.64-7.05)	REF	
CCI			.01[a]			.15
0	4.65 (4.25-5.04)	−0.79 (−2.15-0.57)		5.27 (4.24-6.31)	−0.46 (−1.88-0.97)	
1	5.28 (4.71-5.85)	−0.15 (−1.57-1.26)		5.63 (4.246-6.81)	−0.10 (−1.51-1.32)	
2	6.31 (5.28-7.33)	0.87 (−0.79-2.52)		6.57 (5.17-7.98)	0.84 (−0.76-2.45)	
3	5.44 (4.14-6.73)	REF		5.73 (4.08-7.38)	REF	
THA/TKA			.98			
THA	5.02 (4.51-5.52)	0.01 (−0.63-0.65)				
TKA	5.01 (4.61-5.40)	REF				
Sex			.02[a]			.01[b]
Male	4.56 (4.08-5.03)	−0.77 (−1.40- −0.15)		5.39 (4.28-6.51)	−0.82 (−1.46- −0.18)	
Female	5.33 (4.93-5.73)	REF		6.21 (5.06-7.36)	REF	
Room allocation			.36			
Shared	4.88 (4.47-5.30)	−0.29 (−0.92-0.33)				
Single	5.18 (4.71-5.64)	REF				
Insurance			.38			
Public	5.11 (4.73-5.49)	0.30 (−0.36-0.96)				
Private	4.81 (4.27-5.35)	REF				
Periarticular local anesthetic			.93			
Yes	5.02 (4.67-5.36)	0.04 (−0.75-0.83)				
No	4.98 (4.27-5.70)	REF				
Smoker			.58			
Yes	5.11 (4.65-5.57)	0.18 (−0.44-0.80)				
No	4.93 (4.51-5.35)	REF				
ETOH excess			.18[a]			.41
Yes	4.53 (3.76-5.30)	−0.58 (−1.42-0.26)		5.63 (4.35-6.90)	−0.35 (−1.20-0.49)	
No	5.11 (4.77-5.44)	REF		5.97 (4.93-7.03)	REF	
Married/de facto			.17[a]			.09
Yes	4.92 (4.59-5.26)	−0.60 (−1.46-0.26)		5.44 (4.40-6.48)	−0.72 (−1.57-0.12)	
No	5.52 (4.73-6.31)	REF		6.16 (4.88-7.44)	REF	
CVS comorbidity			.04[a]			.88
Yes	5.23 (4.86-5.60)	0.68 (0.02- −1.33)		5.83 (4.64-7.03)	0.06 (−0.79-0.92)	
No	4.55 (4.02-5.09)	REF		5.77 (4.63-6.91)	REF	
Preop anticoagulation			.47			
Yes	5.20 (4.60-5.80)	0.26 (−0.44-0.96)				
No	4.94 (4.58-5.30)	REF				
Baseline Function[c]			.17[a]			.26
0	4.63 (4.19-5.06)	−2.06 (−6.24-2.11)		5.04 (4.38-5.70)	−2.09 (−6.07-1.88)	
1	5.32 (4.67-5.98)	−1.37 (−5.57-2.84)		5.61 (4.72-6.50)	−1.52 (−5.53-2.48)	
2	5.38 (4.78-5.98)	−1.31 (−5.50-2.88)		5.76 (4.91-6.62)	−1.38 (−5.37-2.62)	
3	5.66 (3.80-7.51)	−1.03 (−5.58-3.51)		5.46 (3.59-7.33)	−1.68 (−6.01-2.65)	
4	6.69 (2.54-10.84)	REF		7.14 (3.11-11.16)	REF	

REF, reference; ASA, American Society of Anesthesiology; CCI, Charlson Comorbidity Index; ETOH, ethanol; CVS, cardiovascular.
[a] Significant/approaching significance at univariable analysis, $P < .20$.
[b] Significance at multivariable analysis, $P < .05$.
[c] Baseline function: 0 = independent nil aids; 1 = independent with aid/equipment; 2 = requires assistance with domestic activities of daily living; 3 = requires assistance with personal and domestic activities of daily living; 4 = fully dependent/nursing home resident.

in LOS to be wider favoring the shared rooms, the degree of difference between cohorts was found to be much smaller. It is possible that a larger sample may be required to elucidate a true representation in our facility; however, the used cohort is reflective of usual practice. Although a single-center single-surgeon approach was used to exclude confounders and improve the accuracy of results, this limits the generalisability of our findings to the wider population.

Implications for practice and future research

The global uptake of fast-track or Enhanced Recovery After Surgery pathways has markedly decreased LOS after hip and knee arthroplasty in the last decade [28]. While some countries, in particular the United States, have trended toward same-day or 23-hour discharges, many countries continue to use traditional models of discharge planning based on local policies. Data from the Royal Australian College of Surgery report a median LOS of 5 nights after THA and TKA in Australia [29]. National data from the UK [30,31] and New Zealand [32] indicate the adoption of similar post-operative pathways, with average LOS of 4 days. In addition, recent studies from Brazil [33] and China [34] reflect similar models of care. The LOS in our study reflects standard practice in line with these previously identified hospital bed stays. Therefore, results from this novel data set may demonstrate clinical applicability within these health-care landscapes.

Table 3
Univariable and multivariable analysis for discharge to rehabilitation (secondary outcome).

Characteristic	Univariate		Multivariate	
	Odds ratio (95% CI)	*P*	Odds ratio (95% CI)	*P*
Age	1.01 (0.97-1.05)	.67		
BMI	1.11 (1.04-1.19)	.002[a]	1.11 (1.02-1.21)	.01[b]
Number of comorbidities	1.25 (1.05-1.48)	.011[a]	1.19 (0.87-1.64)	.27
ASA				
1	0.48 (0.13-1.84)		2.45 (0.29-20.65)	
2	0.48 (0.21-1.10)	.19[a]	1.57 (0.46-5.37)	.68
3	REF		REF	
CCI				
0	1.25 (0.15-10.64)		1.13 (0.09-14.53)	
1	2.70 (0.31-23.51)	.14[a]	2.08 (0.18-24.63)	.30
2	4.09 (0.40-41.66)		4.54 (0.33-62.78)	
3	REF		REF	
THA/TKA				
THA	0.746 (0.33-1.69)	.48		
TKA	REF			
Sex				
Male	0.44 (0.19-1.05)	.06[a]	0.38 (0.13-1.09)	.07
Female	REF		REF	
Room allocation				
Shared	0.26 (0.11-0.61)	.002[a]	0.66 (0.22-2.02)	.47
Single	REF		REF	
Insurance				
Public	0.23 (0.10-0.51)	.0003[a]	0.17 (0.05-0.55)	.003[b]
Private	REF		REF	
Periarticular local anesthetic				
Yes	1.26 (0.45-3.55)	.66		
No	REF			
Smoker				
Yes	0.74 (0.34-1.63)	.45		
No	REF			
ETOH excess				
Yes	0.73 (0.24-2.26)	.59		
No	REF			
Married/de facto				
Yes	0.43 (0.17-1.09)	.08[a]	0.33 (0.10-1.04)	.06
No	REF		REF	
CVS comorbidity				
Yes	1.80 (0.73-4.45)	.20[a]	1.15 (0.28-4.68)	.85
No	REF		REF	
Preop anticoagulant				
Yes	1.62 (0.71-3.68)	.25		
No	REF			
Baseline function[c]				
0	1.18 (0.57-2.46)			
1	1.19 (0.57-2.50)			
2	1.18 (0.56-2.47)	.99		
3	1.22 (0.55-2.72)			
4	REF			

REF, reference; ASA, American Society of Anesthesiology; CCI, Charlson Comorbidity Index; ETOH, ethanol; CVS, cardiovascular.
[a] Significant/approaching significance at univariable analysis, $P < .20$.
[b] Significance at multivariable analysis, $P < .05$.
[c] Baseline function: 0 = independent nil aids; 1 = independent with aid/equipment; 2 = requires assistance with domestic activities of daily living; 3 = requires assistance with personal and domestic activities of daily living; 4 = fully dependent/nursing home resident.

Shared-room allocation is a common practice in many hospitals around the world [16-18,35]. Although our study found no significant relationship between room-sharing and objective measures of patient outcomes, this suggests that there may be no major disadvantage attributable to room allocation when considering LOS and complications. However, given that previous studies [17,18] indicate at least a perceptual difference for the patient, future studies in this area should consider both qualitative and quantitative measures of patient satisfaction. A confounder in our study was the allocation of single rooms preferentially to patients with private insurance. While we were able to use statistical methods to adjust for its effect, a recommendation for future exploration of this study's aims would be to use a prospective study design allowing for randomization of study subjects to single or shared rooms. Other directions for future research should involve collection of PROMs and prospective collection of other measures such as VAS pain scores, narcotic use, and functional outcomes, as well as the exploration of Enhanced Recovery After Surgery pathways.

Conclusions

Our study indicates that room allocation does not have an impact on objective measures of patient outcome, particularly LOS. Sharing a room with fellow patients is unlikely to delay discharge. Further exploration of the topic of room-sharing should examine its effects on return to theater and discharge destination and should do so using a prospective, randomized controlled study design.

Conflicts of interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: S.G. declared that in the last 3 years, he has undertaken paid presentations for Depuy Synthes, Stryker, and Corin and that he is a paid consultant for Corin and Depuy Synthes. In the last 3 years, he has received institutional funding for an orthopedic fellow from Stryker and Corin companies; this funding did not pertain to this particular piece of research. There was no funding obtained for this piece of research.

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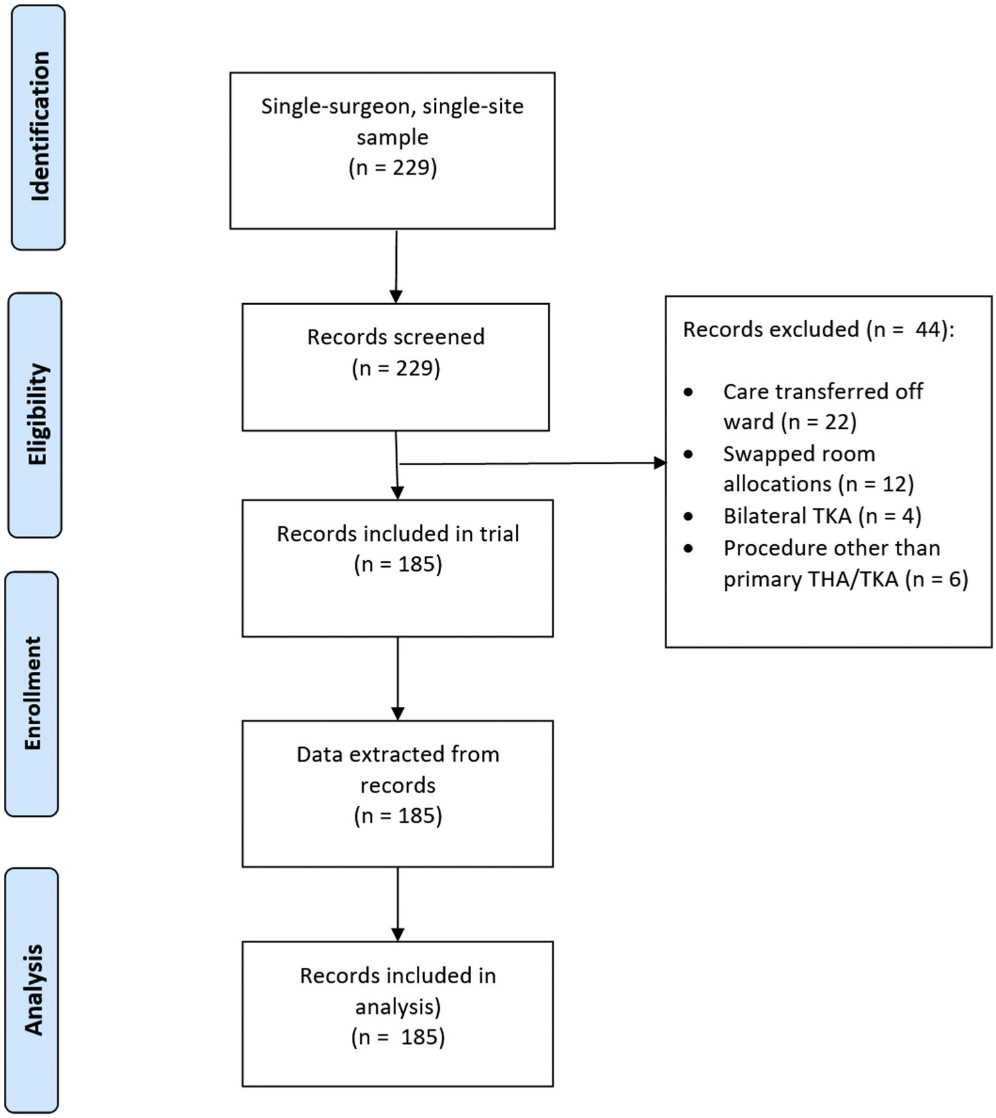

Supplementary Figure 1. Eligibility flow chart.

Supplementary Table 1
Patient characteristics and demographic information.

Characteristic	Single room (n = 82) Number (%) Mean (SD) Median (IQR)	Shared room (n = 103) Number (%) Mean (SD) Median (IQR)	*P* value
Age	64.79 (10.03)	66.48 (10.64)	.27
Female	56 (68%)	53 (51%)	.02[a]
Married or de facto	47 (57%)	58 (56%)	.39
THA	34 (41%)	36 (35%)	.36
TKA	48 (59%)	67 (65%)	
Smoking history	37 (45%)	46 (45%)	.95
ETOH excess	12 (15%)	18 (18%)	.60
BMI	30.87 (6.55)	31.40 (5.65)	.56
Private	51 (62%)	9 (9%)	.00
Baseline function[b]			
0	49 (60%)	42 (41%)	
1	13 (16%)	27 (26%)	
2	17 (21%)	31 (30%)	.08
3	3 (4%)	2 (2%)	
4	0 (0%)	1 (1%)	
Periarticular local anesthetic	64 (78%)	86 (83%)	.35
ASA			
1	13 (16%)	10 (10%)	
2	43 (52%)	56 (54%)	.44
3	26 (32%)	37 (36%)	
Number of comorbidities	3 (1-4.25)	3 (2-5.0)	.78
CVS comorbidity	53 (65%)	72 (70%)	.45
Preop anticoagulation	18 (22%)	32 (31%)	.17
CCI			
0	48 (59%)	59 (57%)	
1	24 (29%)	28 (27%)	.82
2	7 (9%)	9 (9%)	
3	3 (4%)	7 (7%)	

IQR, interquartile range; ASA, American Society of Anesthesiology; CCI, Charlson Comorbidity Index; ETOH, ethanol; CVS, cardiovascular.
[a] Statistical significance $P < .05$.
[b] Baseline function: 0 = independent nil aids; 1 = independent with aid/equipment; 2 = requires assistance with domestic activities of daily living; 3 = requires assistance with personal and domestic activities of daily living; 4 = fully dependent/nursing home resident.