


# BMJ Open Understanding factors affecting 30-day unplanned readmissions for patients undergoing total knee arthroplasty (TKA): the ACT Transition from Hospital to Home Orthopaedics Survey

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## ABSTRACT

**Objectives** The aim of this study was to investigate factors associated with unplanned 30-day readmissions following a total knee arthroplasty (TKA), including association with post-hospital syndrome, patient enablement and transition from hospital to home.

**Design, setting and participants** A cross-sectional written survey of public and private patients attending a 6-week follow-up appointment after TKA at one of four clinical services in the Australian Capital Territory (ACT) between 1 February 2018 and 31 January 2019. Multiple logistic regression analyses were used to measure associations between patient, hospital and transitional care factors with unplanned 30-day readmissions, while controlling for known confounders.

**Results** Of the 380 participants who completed the survey (n=380, 54% of TKAs undertaken over the study period), 3.4% (n=13; 95% CI: 1.8 to 5.8) were subsequently readmitted within 30 days of discharge after a primary hospitalisation. Public patients were significantly more likely to be readmitted within 30 days compared with private patients (adjusted OR=6.31, 95% CI: 1.59 to 25.14, p=0.009), and patients who attended rehabilitation were significantly less likely to be readmitted within 30 days of discharge than those who did not (adjusted OR=0.16, 95% CI: 0.04 to 0.57, p=0.005). There were no associations between post-hospital syndrome or patient enablement and 30-day readmissions in this study.

**Conclusion** Reasons underlying the difference in unplanned readmission rates for public versus private patients need to be explored, including differences in surgical waiting times and the consequences for impairment and disease complexity. Strategies to foster increased participation post-surgical rehabilitation programmes need to be developed as an avenue to mitigate the burden of unplanned 30-day readmissions on individuals and health systems.

## INTRODUCTION

Unplanned readmission rates are an indicator of health system performance.<sup>1,2</sup> The

## Strengths and limitations of this study

- A survey, co-designed with clinicians and patients, examined associations between patient, hospital and transitional care factors and unplanned 30-day readmission following total knee arthroplasty in both public and private hospital settings.
- This study is the first to use patient-reported responses to quantify the effect of hospital experience of pain, sleep and nutrition in unplanned 30-day readmissions following total knee arthroplasty.
- A limitation of this study is that results were based on self-reported patient outcomes with no capacity to link them to hospital records for confirmation as well as the lack of information from those who declined the survey.

rate of unplanned 30-day readmission for total knee arthroplasty (TKA) in Australian public hospitals was 2.6% in 2017–2018.<sup>3</sup> In the USA, readmission rates have been used as an incentive to reduce readmission and drive improved practice.<sup>4</sup> While there is no such programme in Australia, the economic burden of unplanned readmissions makes it a policy priority.<sup>3,5,6</sup>

The rate of knee replacement surgery has more than doubled over the past 15 years both in Australia and internationally<sup>7</sup> with the highest rate of increase seen in the private sector.<sup>3,5,8</sup> This growing demand has placed increased logistical and financial strain on the healthcare system, including associated unplanned 30-day readmissions.<sup>5</sup> The most common condition-related causes of unplanned readmission following a TKA are surgical-site infection, arthrofibrosis, cellulitis, concomitant comorbidities and fluid and electrolyte imbalance.<sup>9</sup> Other factors

such as old age, revision procedure and acute length of hospital stay also increase the risk of unplanned 30-day readmissions.<sup>9</sup> Beyond the complications as a cause of the readmission, there are patient factors related to the hospital stay that increase risk of readmission.<sup>10</sup>

Krumholz<sup>11</sup> describes post-hospital syndrome as a period of vulnerability after discharge from the hospital which leaves a patient at increased risk of re-hospitalisation from conditions which are often unrelated to the original reason for admission. It is proposed that this acquired transient state might be due to patients' experiences of pain, sleep deprivation and poor nutrition during their hospital stay.<sup>11</sup> While this hypothesis is supported by evidence that increasing patient capacity for self-care is effective at reducing 30-day readmissions,<sup>10</sup> as far as we are aware, post-hospital syndrome has not been quantified or measured as an independent variable in association with unplanned 30-day readmission.

Research examining unplanned 30-day readmissions has described a number of associated factors. These factors include: clinical and demographic characteristics<sup>12 13</sup>; a lack of access to primary care; the continuity and regularity of primary care<sup>14–16</sup>; and deficits in hospital discharge planning, which often focus on knowledge provision rather than patients' capacity to implement this knowledge.<sup>10</sup>

The patient-enablement instrument is a tool used to measure a person's knowledge and understanding of their health condition; confidence to manage their condition, health and life<sup>17</sup>; and their ability to source appropriate healthcare for their individual needs. While this measure has largely been examined in primary-care settings, its role in preventing unplanned hospital readmissions has not yet been explored.

The purpose of this study was to investigate factors associated with unplanned 30-day readmissions following a TKA, including aspects of hospital experiences, patient enablement and transition from hospital to home.

## METHODS

### Study population

Consecutive patients over the age of 16 years, attending a 6-week follow-up appointment after undergoing TKA at one of four private and public clinical services between 1 February 2018 and 31 January 2019.

### Patient and public involvement

Five people who had previously had an arthroplasty with a surgeon from one of the participating clinics completed the survey and provided feedback regarding its meaningfulness in relation to their experiences, and the length and readability of the survey.

### Study design

A cross-sectional survey was conducted in the Australian Capital Territory (ACT) between 1 February 2018 and 31 January 2019 at all private and public sites undertaking

lower limb joint replacement services. Data were collected retrospectively at the 6-week follow-up appointment post surgery for both total knee and hip replacement (THA). The responses for patients having undergone elective TKA are presented in this paper.

### Instrument

The *ACT Transition from Hospital to Home Survey* was developed and piloted by researchers at the Australian National University, Canberra Hospital, Academic Unit of General Practice ACT Health, Capital Health Network, Health Care Consumer Association ACT and people who had previously experienced either TKA or THA.<sup>18</sup> The 50-item survey was designed to measure patients' experiences in hospital and transition to home across six domains: (1) Patient demographic characteristics and comorbidities; (2) Post-hospital syndrome; (3) Medication enablement; (4) Patient enablement; (5) Transition to general practice; and (6) Pre-hospital and post-hospital information and pre-surgical/post-surgical rehabilitation

### Co-morbidities

Morbidity was assessed with the validated 18-item Functional Comorbidity Index which is used to predict functional status rather than mortality.<sup>19</sup>

### Post-hospital syndrome

Fifteen items within three domains covering patients' experiences of sleep, pain and diet in hospital were designed to measure post-hospital syndrome.

### Medication enablement

Three items measured medication enablement in terms of patients' knowledge and ability to manage their medications following discussions with healthcare providers derived from a previous study in general practice nurse consultations.<sup>20</sup> The internal consistency of this scale was established ( $\alpha=0.80$ ) in the pilot study (unpublished results).

### Patient enablement

This is the internationally validated six-item Patient Enablement Instrument<sup>21</sup> used primarily in primary-care research.

### Transition to general practice

Ten items assessing patients' relationships with their general practitioner (GP) in terms of continuity of care, regularity of care, healthcare planning, patients' understanding of when to see their GP following discharge and access to care. These questions were refined as a result of the pilot study to eliminate covariance and repetition.

### Interaction with the recommended rehabilitation programme

Referral and attendance to outpatient physiotherapy rehabilitation post discharge was examined with one item.

### Data collection

The paper surveys were distributed by reception staff at patients' 6-week postoperative consultation. Staff were

given a protocol and suggested wording to use when providing the survey. An information sheet about the study was provided to patients and anonymity guaranteed. Patients were not required to include their name or identifying information on the survey. This ensured that patients understood that participation or non-participation did not affect the care they received and that completed surveys were confidential to clinical staff. Completion of the survey implied written consent and this was agreed and approved by the local ethics committee. Surveys were deposited in a sealed box in the waiting room and collected by the researcher at regular intervals.

### Data analysis

Completed survey data were collated and descriptive and inferential statistics used. Variables were described using summary statistics and frequencies. Some variables were grouped to create new variables and others, for example, body mass index (BMI), were converted to categorical variables for analysis. The primary outcome of interest was self-reported 30-day readmission to hospital following discharge, categorised as a binary variable (yes/no). Age, sex, living situation, country of origin, education, self-rated health, comorbidities, post-hospital syndrome (experiences of sleep, diet and pain), experiences of family practice (access, continuity, planning, regularity), medication enablement and patient enablement were separate independent variables.

An exploratory factor analysis (EFA) with orthogonal varimax rotation was undertaken to explore the relationship between variables which described post-hospital syndrome. The modes/themes which had an eigenvalue of  $>1$  were retained and the internal consistency of the modes which emerged was examined using Cronbach's alpha. The suitability of the data for an EFA was confirmed with a Kaiser-Meyer-Olkin criteria and Bartlett's test.

Prior to analysis, variable independence was established. Ordinal variables were examined using Spearman's correlation coefficient and categorical variables using the  $\chi^2$  test and OR. If a strong correlation ( $>0.6$ ) or a significant association ( $p \leq 0.2$ ) existed between two eligible variables, only one of these was retained for inclusion in the final analysis.

Univariate logistic regression analysis was conducted for each independent variable and the dependent variable (unplanned 30-day readmission). Univariate logistic regression was conducted on each individual comorbidity item, and then for the total comorbidity score.

To further eliminate potential confounding, two multiple logistic regression models were run—one including eligible individual variables from within the Functional Comorbidity Index, Medication Enablement questions and the Patient Enablement Instrument; and a second including total scores.

The full multiple logistic regression model included eight variables. These were public or private hospital; upper gastrointestinal disease; self-rated health; given an information package or checklist before surgery; usual

waiting time to see GP; attendance at recommended rehabilitation or physiotherapy; and living status. The reduced model included 'public or private hospital' and 'attendance at recommended rehabilitation or physiotherapy'. Only risk factors with  $p$  values  $\leq 0.25$  were included in the multiple logistic regression analyses. Logistic regression with backward stepwise selection was used to choose risk factors for the multivariable model. A significance level of 0.25 was required to allow a risk factor into the model, and a significance level of 0.25 was required for a risk factor to stay in the model. The adjusted OR and its 95% CI were calculated for each risk factor in the presence of others in the final model. Both the models were adjusted for age and sex.

Likelihood ratio tests and Hosmer-Lemeshow goodness of fit test were used to check the fit of the final model. The receiver operator characteristic (ROC) curve was plotted to check the specificity and sensitivity of the predicted model.

Stata/IC v.15.1 (StataCorp) was used to perform all statistical analyses.<sup>22</sup>

### Missing data

The criteria used for acceptability of non-response to all survey questions was 10% or lower including for medication and patient enablement scale.<sup>23–25</sup> Missing data for individual variables within the medication and patient enablement scales were imputed to equal the median value of non-missing data.<sup>26–29</sup>

## RESULTS

Of the 1069 people invited to participate, 827 (77%) completed the overall survey.

Of all surgeries, 380 received a TKA and of these 13 were readmitted within 30 days. Participant demographics are presented in [table 1](#). Private patients accounted for 65% of the total population (247 private patients and 133 public patients). This represented 44% of all private patients and 96% of all public patients who had a TKA during the study period which represents 54% of all TKAs. Fifty-seven per cent of those who underwent knee surgery were women. The mean age was 67.4 with a SD 0.5 years (age range 44.8–91.0 years). Mean BMI was 31.5 kg/m<sup>2</sup> with most having a BMI of  $>30$  (58%). Most participants were non-indigenous (99%). There were three people of Aboriginal and/or Torres Strait Islander origin, none of whom was readmitted. There were proportionally more private patients aged 65–84 years (63%) compared with public (53%), whereas proportionally more public patients were in the 45–64 age group (44% compared with 35%). The proportion of women within the public cohort was greater than private (67% compared with 57%). A higher proportion of public patients lived alone (31% compared with 23%).

### Post-hospital syndrome EFA

The results of the EFA are reported in [table 2](#). Three modes/themes with acceptable internal consistency

**Table 1** Characteristics of participants who underwent total knee arthroplasty with an unplanned 30-day readmission (n) as a proportion of all participants (N)

Variable		Public n/N	Private	Total
		N=133 n/N	N=247 n/N	N=13/380 (%)*
Age	45–64	1/55	1/79	2/134 (2)
	65–84	4/33	2/145	10/211 (5)
	>85 years	0/4	0/5	0/9
Gender	Male	1/21	1/97	3/139 (2)
	Female	7/86	3/129	2/55 (5)
	Other	0/0	0/2	0/2
Language	Other than English at home	0/21	1/14	2/49 (4)
	Only speaks English	1/12	1/106	11/320 (3)
Living status	Lives alone	7/40	0/55	2/95 (2)
	Lives with someone	1/45	4/189	11/273 (4)
BMI calculations	BMI (mean)	31.5		
	18.5–24.4	1/7	0/22	1/31 (3)
	24.5–30	1/34	1/43	2/129 (2)
	>30	7/74	3/109	10/220 (5)
Indigenous status	Aboriginal	0/1	0/0	0/1
	Torres Strait Islander	0/1	0/1	0/2
	Both			0/0
	Neither	9/104	2/99	13/315 (4)
Education	No school certificate or other qualifications	0/9	0/11	0/22
	School or intermediate certificate	1/8	1/40	6/87 (7)
	Year 12 or leaving certificate	1/17	1/32	1/27 (4)
	Trade/apprenticeship	0/10	1/17	1/30 (3)
	Certificate/diploma	2/23	0/50	1/38 (3)
	University degree or higher	1/17	1/68	2/95 (2)

\*Missing values for age: 26, Gender: 24, Language: 11, Living status: 6, BMI: 36, Indigenous status: 62, Education: 16.

†Missing value for readmission for age: 1.

BMI, body mass index.

emerged. First, diet, which was described by responses to two questions: ‘Did you feel your dietary requirements were met in hospital?’ and ‘Overall, how would you rate the quality of the food in hospital?’ The second theme was pain, which was also explained by two questions: ‘How would you describe the general level of pain you experienced?’ and ‘When you left hospital, how would you rate your pain out of 10?’ The third was sleep which was explained by ‘Did you feel well rested when you left the hospital?’ and ‘How would you rate the quality of sleep in the hospital?’

Floor and ceiling effects were observed for patient enablement due to a large number of participants reporting being either fully enabled or not enabled at all. To address this, the variable was dichotomised around the mean where ‘less enabled’ was  $\leq 6.5$  and ‘more enabled’ was  $> 6.5$  in line with previous studies using this instrument.<sup>28 30</sup> Sixty per cent of participants (n=212/357)

reported that they were less enabled to manage their health after their stay in the hospital.

### Multiple logistic regression analysis

The results of univariate analysis are presented in online supplemental table 1. The area under the curve (AUC) was 0.80 (95% CI: 0.66 to 0.94) indicating high overall accuracy of the logistic model (80%) (figure 1). The area under the ROC curve is interpreted as the probability that a subject with unplanned 30-day readmission is given a higher probability of the outcome by the logistic model than a randomly chosen subject without unplanned 30-day readmission. An AUC value of 0.50 indicates that the model has no discriminatory ability (the diagonal line corresponds to random change). The Pearson  $\chi^2$  goodness of fit test statistic is 11.64 and since  $p=0.7682$ , we conclude that there is no evidence against the model fitting the data well.

**Table 2** Exploratory factor analysis and emerging variables

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor 1	2.53	0.85	0.18	0.18
Factor 2	1.69	0.42	0.12	0.30
Factor 3	1.27	0.12	0.09	0.39

Bartlett test of sphericity  $p=0.000$   
Kaiser-Meyer-Olkin=0.62

Variable	Factor 1	Factor 2	Factor 3
Did you feel your dietary requirements were met in hospital?	<b>0.88</b>	0.01	0.10
Overall, how would you rate the quality of the food in hospital?	<b>0.86</b>	0.01	0.09
How would you describe the general level of pain you experienced?	-0.02	<b>0.83</b>	0.10
When you left hospital, how would you rate your pain out of 10?	0.04	<b>0.75</b>	0.09
Did you feel well rested when you left the hospital?	0.20	0.18	<b>0.75</b>
How would you rate the quality of sleep in the hospital? (poor)	0.30	0.18	<b>0.67</b>

The highlighted bold values represent factor loading which are the correlation coefficient indicating the variance explained by the variable on the factor. Values 0.7 or greater are retained and highlighted in this table.

Eight variables were eligible for inclusion in the multiple logistic regression analysis. Due to the wide CI for stroke, this variable was eliminated from the full model. Of these, 'public or private status' and 'rehabilitation attendance' were retained for the reduced model as they were the only variables to retain significance after stepwise removal of the other variables in the full model. The results of the multiple regression analysis are reported in [table 3](#).

The final multiple regression model included a sample size of 328 observations and the following factors remained significant. After controlling for age and sex, public patients were significantly more likely to be readmitted within 30 days compared with private patients (OR=6.31, 95% CI: 1.59 to 25.14,  $p=0.009$ ), and patients attended rehabilitation were significantly less likely to be readmitted within 30 days of discharge than those who did not (OR=0.16, 95% CI: 0.04 to 0.57,  $p=0.005$ ). After attempting to adjust for age and sex in a four-covariate reduced model, public patients (9/134,

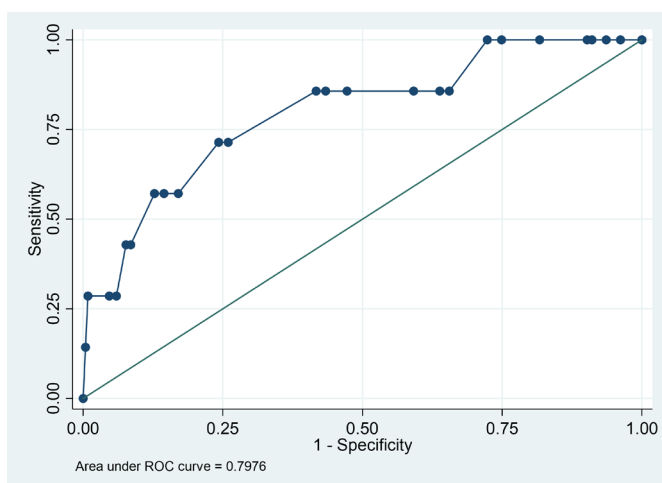
6.7%) were significantly more likely (adjusted OR=6.31, 95% CI: 1.59 to 25.14,  $p=0.009$ ) to be readmitted within 30 days compared with private patients (4/246, 1.6%) and patients attended rehabilitation (7/301, 2.3%) were significantly less likely (adjusted OR=0.16, 95% CI: 0.04 to 0.57,  $p=0.005$ ) to be readmitted within 30 days of discharge than those who did not (6/39, 15.3 %).

## DISCUSSION

The aim of this study was to investigate factors associated with unplanned 30-day readmission in patients who underwent TKA. Of the 4% of patients who had an unplanned readmission, those who attended public hospitals and those who did not attend an outpatient rehabilitation programme were more likely to be readmitted to hospital within 30 days of discharge.

While the USA also has a similar 4% readmission rate following TKA,<sup>9 31-33</sup> this is higher than that reported by the Australian Institute of Health and Welfare (AIHW).<sup>3</sup> However, our results may reflect the true readmission rate more accurately as the AIHW only reports public hospital data and the majority of TKAs in Australia are performed in the private sector.

In our study, public patients were more likely to be readmitted within 30 days as compared with private patients. The majority of respondents (65%) had their TKA in the private sector, consistent with the higher proportion (80%) of TKA procedures performed in the private sector in the ACT.<sup>34</sup> Our study has almost complete ascertainment from the public sector, and reasonable ascertainment from the private sector, supporting the robustness of our findings. The increased likelihood of readmission for public patients might be explained by several contributing factors such as socioeconomic status, longer waiting times resulting in increased impairment


**Figure 1** Receiver operator characteristic (ROC) curve.

**Table 3** Results of multiple logistic regression analysis examining the association between patient, hospital and transition to general practice factors associated with unplanned 30-day readmission to hospital

Relevant variables	Full model*			Reduced model† (n=328)		
	OR	95% CI	P value	OR	95% CI	P value
Public or private	3.44	0.70 to 16.89	0.12	6.31	1.59 to 25.14	0.009
Comorbidity						
Upper gastrointestinal disease	0.43	0.06 to 2.96	0.39	–	–	–
Living status	0.27	0.03 to 2.45	0.25	–	–	–
Self-rated health	0.39	0.14 to 1.13	0.08	–	–	–
Information package	0.56	0.05 to 4.04	0.65	–	–	–
Attended info session	0.80	0.16 to 7.07	0.79	–	–	–
Waiting time to see GP	0.60	0.23 to 1.58	0.30	–	–	–
Attendance to rehabilitation	0.21	0.05 to 0.96	0.04	0.16	0.04 to 0.57	0.005

\*Full model included public or private hospital; upper gastrointestinal disease; self-rated health; given an information package or checklist before surgery; usual waiting time to see GP; attendance to recommended rehabilitation or physiotherapy; and living status.

†Reduced model included variables public or private hospital and attendance to recommended rehabilitation or physiotherapy. Both the models were run when adjusting for age and sex.  
GP, general practitioner.

and disease complexity.<sup>35–40</sup> The median waiting time for a TKA in 2018–2019 in the ACT public hospital system was 209 days with 8.2% of patients waiting more than 365 days.<sup>35</sup> On the other hand, the median waiting time for Australian private patients was just 67 days during the same period.<sup>2 41</sup> Therefore, waiting time may be an important mediating factor however association between the two may only be inferred and no causation can be implied.

Patients who have had to wait longer constitute 1.2% of all unplanned 30-day readmissions for elective surgical procedures in Australia.<sup>42</sup> Patients who underwent TKA who waited longer than 6 months have been described as having significantly worse function and quality of life scores, as well as dissatisfaction rates which were mainly influenced by preoperative anxiety and depression.<sup>43</sup> It is important to understand that surgical waiting times are only part of the waiting journey for patients in the public system. The mean waiting times recorded for Australian patients do not take into account the lengthy process of referral, specialist assessment and investigation.<sup>44</sup> Addressing long waiting lists by using non-surgical exercise and education programmes are increasingly being implemented and the evidence for efficacy is strong.<sup>45 46</sup>

In our study, patients who attended rehabilitation were less likely to be readmitted within 30 days than those who did not. Previous research indicates that private patients are more likely to attend rehabilitation than public patients<sup>47</sup> and that rehabilitation is associated with better physical function after TKA.<sup>45</sup> However, we found no significant relationship between being a public or private patient and attendance at rehabilitation. Both groups in our sample had similar rehabilitation opportunities, except for the provision of hydrotherapy after 6 weeks indicating that public or private status was not a mediating factor for this finding.

This study showed no significant associations between general practice factors and unplanned 30-day readmissions. A recent study reported that timely and regular GP contact during the 2 years following transition from hospital to community care lowered the risk of emergency readmission to hospital in patients with cardiovascular disease.<sup>48</sup> However, our results might reflect the nature of the health condition. This cohort included people having TKA as a treatment for severe pain for arthritis of the knee, which is quite different to other diseases in that the treatment is potentially definitive and is followed up by the surgeon.

Although more than half of the patients who were readmitted had high scores for post-hospital syndrome, there was no significant association with 30-day readmission. The hypothesis of post-hospital syndrome describes a transient state resulting in consequences, including a higher risk of readmission.<sup>11</sup> Brownlee *et al*<sup>49</sup> found that post-hospital syndrome was an independent predictor of readmission within 30 days of discharge in a large cohort of surgical patients. While other studies have attempted to determine the impact of post-hospital syndrome through linked hospital records data,<sup>49 50</sup> this study is the first to use patient-reported responses to quantify the effect of hospital experience (of pain, sleep and nutrition) on unplanned 30-day readmissions.

There are limitations to this study. The main limitation was that there were fewer readmissions than anticipated and the study may have been insufficiently powered for detecting the associations being tested. The results were based on anonymous self-reports; hence there was no capacity to link them to hospital data to establish actual readmission time frames, length of hospital stay, reasons for readmission or previous admission history. However, our primary endpoint was 30-day readmission and we believe that the self-reported data were accurate. The

response rate is only an estimation based on joint replacement activity in the ACT. It assumes that all patients returning for their 6-week follow-up appointment were invited to participate. We do not know whether the reception staff invited all patients, or only some. The lack of information about non-responders is another limitation of this study. More non-responders may have been readmitted and it is possible that they may have been sicker than responders, which would also influence the readmission rate. Also, as the ACT has a relatively high socioeconomic demographic the findings from this study may not apply to other less affluent areas.

Our data do not allow us to understand why rehabilitation was not accessed. It is possible that patients who were frailer did not feel able to participate and perhaps they were the patients who were readmitted. However, a range of patient and provider-based factors have been recognised as affecting the rehabilitation pathway chosen by patients, such as preoperative preferences, previous experiences, perceived benefits, clinical status post-surgery, as well as insurance provider and hospital business model.<sup>51</sup> This association needs clarification.

It is not known if the rate of readmission can be reduced given the significant comorbidities of the patients who underwent TKA sample.

## Conclusion

This study was undertaken to explore the factors impacting unplanned 30-day readmission after TKA. These results have implications for policy and for practice. An over-representation of public patients in the readmitted cohort is important. It is possible that the consequences of extended periods of delay to surgery among patients on the public waiting list may be an important factor. Therefore, it is essential to shorten waiting times and prioritise medical need when dealing with public patients. Clinicians should also place emphasis on the importance of attending rehabilitation after a TKA as an effective way to reduce 30-day readmission. Further investigation of how the pre-surgical patient journey can be better optimised to reduce readmission rates is warranted.

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**Contributors** MC: data collection, analysis, drafting and finalising of manuscript. DP: data collection and analysis, significant contributions to final manuscript. CP: survey development, significant contributions to final manuscript. AP: data collection, significant contributions to final manuscript. NG: survey development, significant contributions to final manuscript. KD: survey development, significant contributions to final manuscript. DC: survey development, contributions to final manuscript. PS: survey development, significant contributions to final manuscript. JD: study conception and survey design, data collection, supervised data analysis, significant contributions to final manuscript, and responsible for the overall content as the guarantor.

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