

Patients' Satisfaction About Total Knee Replacement Surgery in Saudi Arabia

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Abstract: Background: Total knee arthroplasty (TKA), also known as total knee replacement (TKR), is an increasingly common surgical procedure, especially in the elderly population. Its primary benefits include pain relief and improved mobility for advanced-stage osteoarthritis patients. The procedure's success rate is high, with only 4% to 7% of patients reporting dissatisfaction. Total knee replacements in the US surpassed 700,000 in 2012, and this number was predicted to reach 3.5 million by 2030. Studies reported high satisfaction rates, with one highlighting a 96% satisfaction rate in patients with severe arthritis. Given the growing number of TKAs performed worldwide, assessing patient satisfaction and understanding potential outcomes became critical. **Objectives:** This study aimed to evaluate patient satisfaction with total knee arthroplasty (TKA) in Saudi Arabia, its impact on daily life, and to identify preoperative and postoperative predictors of satisfaction. **Methods:** A study was conducted in Saudi Arabia from 2023 to 2024 on 228 individuals of both genders who had undergone total knee arthroplasty. The data were gathered by researchers and analyzed using Statistical Package for the Social Sciences (SPSS) software version 25 for Windows (Chicago, IL, USA). **Results:** This study examined satisfaction following total knee replacement among 228 Saudi Arabian patients (mean age 57.9 years, 59.2% female), with prevalent comorbidities (diabetes 42.9%, hypertension 37.7%). Single knee replacement predominated (87.3%), and 35.1% held bachelor's degrees. Overall, 79.8% reported high satisfaction, 86.4% improved functionality, 94.7% reduced pain, and 88.6% willingness to recommend. Post-surgery, 70.6% rated their health "Excellent/Very Good," while emotional limitations affected 13.6%. Most (84.2%) were highly satisfied, correlating strongly with quality-of-life improvements. Significant satisfaction predictors included region, education, marital status, surgery date, height, weight, and gender. These findings underscored the procedure's effectiveness and influential demographic factors. **Conclusion:** Our study illustrated high levels of patient satisfaction associated with total knee replacement surgery in Saudi Arabia, aligning with existing literature on the effectiveness of TKA in improving quality of life and functional outcomes. The intertwining relationship between demographic factors and satisfaction levels highlighted the importance of personalized care strategies that consider individual patient contexts.

Key Words Total knee arthroplasty, Patient satisfaction, Saudi Arabia, Quality of life, Predictors of outcomes

INTRODUCTION

Total knee arthroplasty (TKA), also known as total knee replacement (TKR), is an elective joint surgical management and became a common procedure worldwide [1]. With its high success rates, the numbers of TKA

among older adult patients increased, especially in the Middle Eastern region [2]. The primary advantage of this procedure is alleviating joint pain and improving mobility for patients suffering from advanced-stage osteoarthritis [3]. Fortunately, more recent articles suggested that just

4% to 7% of patients were dissatisfied with the results of their total knee replacement [4].

An increasing number of total knee arthroplasty (TKA) treatments performed in the United States exceeded 700,000 in 2012, with expected growth of up to 3.5 million procedures completed by 2030 [5]. A prospective cohort study published in 2019 on patient satisfaction with primary total knee replacement in Sulaimani City reported that 71.7% of the patients were satisfied [3]. In 2022, a cross-sectional study was conducted on patient satisfaction and quality of life in Saudi Arabia toward total knee replacement and total hip replacement surgeries, showing a high satisfaction rate for joint replacement surgeries [6]. In 2020, a retrospective cohort study was published on the correlation between radiographic severity of arthritis and patient satisfaction toward total knee replacement, showing patients with severe arthritis had an overall satisfaction rate of 96% compared with 82% in mild arthritis [7].

Undoubtedly, TKR represented one of the most frequent orthopedic procedures globally and proportionally grew over time due to the apparent increase in the underlying risk factors [8]. Notably, primary TKA cases were projected to climb to 85% by 2030 [9]. By the end of 2030, 3.48 million TKR procedures were anticipated to have been performed worldwide [10]. Accordingly, given the growing number of knee replacements and the associated collateral effects, measuring how satisfied targeted people are and understanding potential TKA outcomes become increasingly important [11]. Thus, this study was primarily conducted to assess the level of satisfaction with TKA in Saudi Arabia. Our study aimed to evaluate patient satisfaction with TKA in Saudi Arabia and determine how it affects their daily life activities. We also aimed to identify preoperative and postoperative predictors of patient satisfaction after TKA.

Objectives

The objectives of this research were to establish quantitative data regarding the satisfaction level and quality of life post-TKA among the population in Saudi Arabia, determine the impact of TKA among people in Saudi Arabia, and identify potential predictors of patient satisfaction and QoL in the preoperative and postoperative phases of TKA.

METHODS

Study Design

A cross-sectional study was conducted among the population of Saudi Arabia. The study involved a questionnaire that was filled out by researchers and data collectors.

Study Population

This study included adult male and female patients who underwent TKA in Saudi Arabia.

Recruitment

Individuals from the general population were invited to participate in the study voluntarily. Patient data were collected through structured interviews.

Sampling Procedure

A conventional sampling technique was employed.

Inclusion and Exclusion Criteria

Inclusion criteria: Patients of all age groups and both genders underwent TKA (citizen and resident populations in Saudi Arabia).

Exclusion criteria

All orthopedic arthroplasty procedures excluding TKR.

Sample Size

Using the Qualtrics calculator with a 95% degree of confidence, the estimated minimum sample size was determined to be 384. The formula used to calculate the sample size was:

$$n = P(1-P) * Z_{\alpha/2}^2 / d^2 = P(1-P) * Z_{\alpha/2}^2 / d^2$$

Method for Data Collection and Instruments (Data Collection Technique and Tools)

Researchers and data collectors were deployed in four main regions: the Northern, Southern, Eastern, and Western regions. We interviewed the patients who had undergone TKA in clinics. We then reached out to them, and administered the Arabic version of the questionnaire. The questions were presented in the local language to ensure honest responses. The survey was divided into three parts, adapted from previous research [6]. The first part covered demographic information such as age, BMI, and education level. The second part included five questions focused on patient satisfaction. Lastly, the third part was the widely recognized SF-12 questionnaire, a validated standard for measuring quality of life.

Scoring System

The second section consisted of five questions, with a total of eight possible points (Yes = 1, No = 0, Very highly = 4, Highly satisfied = 3, Moderately = 2, Minimally = 1, Not satisfied at all = 0). 0–4 = Not satisfied, 5 = Moderately satisfied and 6–8 = Highly satisfied. The scoring of the third section followed Ware and his colleagues' methodology [12].

Analysis and Entry Method

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) software version 25 for Windows (Chicago, IL, USA). Mean and standard deviation for quantitative variables and counts (%) for qualitative variables were used to summarize the data, with a level of significance set at $p \leq 0.05$.

RESULTS

Table 1 displays various demographic parameters of the participants with a total number of 228. Participants' mean age stands at 57.9 years while 29.4% of participants are 54 years old or younger, indicating that middle-aged individuals

Table 1: Sociodemographic Characteristics of Participants (N=228)

Parameter		No.	Percent (%)
Age (Mean:57.9, STD:7.7)	54 years or less	67	29.4
	55 to 59	66	28.9
	60 to 65	54	23.7
	66 or more	41	18.0
Gender	Female	135	59.2
	Male	93	40.8
Residential region	Northern region	44	19.3
	Southern region	10	4.4
	Central Region	89	39.0
	Eastern Region	10	4.4
	Western Region	75	32.9
Educational level	Primary school	17	7.5
	Middle school	33	14.5
	High school	69	30.3
	Bachelor's degree	80	35.1
	Master's	15	6.6
	PhD	2	.9
Marital status	Uneducated	12	5.3
	Single	1	.4
	Married	153	67.1
	Divorced	19	8.3
	Widowed	28	12.3
	Separated	27	11.8
Chronic illnesses *	Hypertension	86	37.7
	Diabetes mellitus	98	42.9
	Ischemic heart disease	10	4.4
	Cardiomyopathy	6	2.6
	Hypothyroidism	29	12.7
	Asthma	30	13.2
	None	68	29.8
	Others	4	1.8
Type of surgery	One knee joint replacement	199	87.3
	Both knee joint replacement	29	12.7
Surgery date	<1 year and more than 3 months	64	28.1
	1 year	87	38.2
	2 years	51	22.4
	3 years	14	6.1
	More than 3 years	12	5.3
Height in cm (Mean:165.9, STD: 9.2)	160 or less	82	36.0
	161 to 169	52	22.8
	170 to 175	52	22.8
	176 or more	42	18.4
Weight in kg (Mean: 88.3, STD:14.3)	84 kg or less	70	30.7
	85 to 90	88	38.6
	91 kg or more	70	30.7

*Results may overlap

form the majority who show relevance to chronic illness-related factors. The research sample reveals that females who join studies outnumber males 59.2% to 40.8% due to potential industry practices that tend to draw a primarily female participant base. Survey findings indicate that marriage exists among a greater portion of 67.1% of respondents relative to other marital statuses because social networks are likely to support their health outcomes after knee joint surgery. The study shows high numbers of persistent medical conditions with diabetes mellitus 42.9% followed by hypertension 37.7% while most patients received one knee joint replacement procedure 87.3%. The study population consists mainly of educated participants since 35.1% of them hold a bachelor's degree which enables

researchers to perform detailed examinations of how education impacts health literacy and treatment compliance.

As shown in Figure 1, Information and indicators of success in overall joint replacement treatments emerge from the data presented in the figure. A substantial 88.1% of the respondents scored their joint replacement outcomes highly positive with "very highly satisfied" (76 respondents) and "highly satisfied" (106 respondents). Overall these two categories represent 36.6% and 51.5% of all respondents. A combined total of 88.1% of participants stood content with their results from joint replacements. The survey results showed that 16.8% of participants selected "moderately satisfied" and "minimally satisfied" and "not satisfied at all" received responses from 35 (16.8%) 8 (3.9%) and 3 (1.5%) respectively. Two out of every ten patients reported being dissatisfied with their joint replacement surgery but the large majority of 88.1% expressed satisfaction demonstrating a positive attitude toward this surgical intervention.

Table 2 shows that surgical outcomes proved effective at enhancing life quality based on the 79.8% of patients who expressed "very highly satisfied" and "highly satisfied" satisfaction levels. The surgical intervention received support from patients who indicated their intention to repeat the same procedure because they trusted the treatment. The study results reveal major functional improvements because surgery helped people improve their physical capabilities 86.4% and almost all subjects 94.7% noticed decreased pain post-treatment. The patient population showed strong approval of total knee replacement surgery by recommending it at an 88.6% rate which demonstrates that this procedure meets their needs successfully.

As shown in Figure 2, Most members of the surveyed population express positive views about their health according to the data shown in the figure. The "Excellent" health rating was received by 80 subjects made up 39% of the total respondents while "Very Good" was earned by 81 individuals which amounted to 39.5% of participants. The substantial numbers grasp a real picture of how well this demographic feels about their health. The respondents categorizing their health as "Good" made up 22% of the study participants indicating a possible opportunity to improve their health condition. The assessment of "Fair" health status and "Poor" health status was reported by 8% of participants at 16 people and 3% with six individuals respectively.

The data in Table 3 demonstrates valuable findings about patient life quality after total knee replacement treatments which examined 228 surgical patients. A substantial number of respondents described their health conditions positively because 70.6% rated their health "Excellent" or "Very Good." The outcome demonstrates surgical success since the procedure effectively produces improved total patient welfare. Most patients (72.8%) experienced no limitations in doing moderate activities while 57.5% showed no restrictions in climbing staircases multiple times illustrating the successful role of surgical intervention in restoring functional mobility. Some patients faced

Table 2: Parameters Related to Satisfaction with Total Knee Surgery Replacement (N=228)

Parameters		No.	Percent (%)
How satisfied are you with your joint replacement?	Very highly satisfied	76	33.3
	Highly satisfied	106	46.5
	Moderately satisfied	35	15.4
	Minimally satisfied	8	3.5
	Not satisfied at all	3	1.3
If you had the choice, would you undergo the procedure again under the same conditions?	No	14	6.1
	Yes	214	93.9
Did the surgery increase your functional capacity?	No	31	13.6
	Yes	197	86.4
Did the surgery relieve your pain?	No	12	5.3
	Yes	216	94.7
Would you recommend this surgery to your friends or relatives?	No	26	11.4
	Yes	202	88.6

Table 3: Participants' Quality of Life After Total Knee Surgery Replacement (N=228)

Parameters		No.	Percent (%)
In general, would you say your health is	Excellent	80	35.1
	Very Good	81	35.5
	Good	45	19.7
	Fair	16	7.0
	Poor	6	2.6
Does your health now limit you in moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?	Yes, Limited A Lot	17	7.5
	Yes, Limited A Little	45	19.7
	No, Not Limited At All	166	72.8
Does your health now limit you from climbing several flights of stairs?	Yes, Limited A Lot	21	9.2
	Yes, Limited A Little	76	33.3
	No, Not Limited At All	131	57.5
During the past 4 weeks have you had any of the following problems with your work or other regular activities as a result of your physical health and accomplished less than you would like?	No	163	71.5
	Yes	65	28.5
During the past 4 weeks have you had any of the following problems with your work or other regular activities as a result of your physical health and were limited in the kind of work or other activities?	No	165	72.4
	Yes	63	27.6
During the PAST 4 WEEKS, were you limited in the kind of work you do or other regular activities as a result of any emotional problems (such as feeling depressed or anxious) and accomplished less than you would like?	No	197	86.4
	Yes	31	13.6
During the PAST 4 WEEKS, were you limited in the kind of work you do or other regular activities as a result of any emotional problems (such as feeling depressed or anxious) and didn't do work or other activities as carefully as usual	No	197	86.4
	Yes	31	13.6
During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?	Not At All	127	55.7
	A Little Bit	53	23.2
	Moderately	35	15.4
	Quite A Bit	9	3.9
	Extremely	4	1.8
Have you felt calm and peaceful?	Yes, All the Time	96	42.1
	Yes, Most of the Time	13	5.7
	Yes, A Good Bit of the Time	88	38.6
	Yes, Some of the Time	14	6.1
	Yes, A Little of the Time	11	4.8
	No, None of the Time	6	2.6
Did you have a lot of energy?	Yes, All the Time	57	25.0
	Yes, Most of the Time	107	46.9
	Yes, A Good Bit of the Time	16	7.0
	Yes, Some of the Time	34	14.9
	Yes, A Little of the Time	7	3.1
	No, None of the Time	7	3.1
Have you felt downhearted and blue?	Yes, All the Time	3	1.3
	Yes, Most of the Time	3	1.3
	Yes, Some of the Time	26	11.4
	Yes, A Little of the Time	18	7.9
	No, None of the Time	178	78.1
During the past 4 weeks, how much of the time have your physical health of emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?	Most of the Time	7	3.1
	A Good Bit of the Time	3	1.3
	Some of the Time	17	7.5
	A Little of the Time	35	15.4
	None of the Time	166	72.8

Table 4: Shows Satisfaction with Total Knee Replacement Surgery Score Results

Parameters	Frequency	Percent
Patients are highly satisfied	192	84.2
Patients are moderately satisfied	18	7.9
Patient is not satisfied	18	7.9
Total	228	100.0

Table 5: Shows Satisfaction and QoL Regarding Total Knee Replacement Surgery Score Results.

Parameters	Frequency	Percent
High satisfaction and QoL	181	79.4
Moderate satisfaction and QoL	39	17.1
Low satisfaction and QoL	8	3.5
Total	228	100.0

How satisfied are you with your joint replacement?

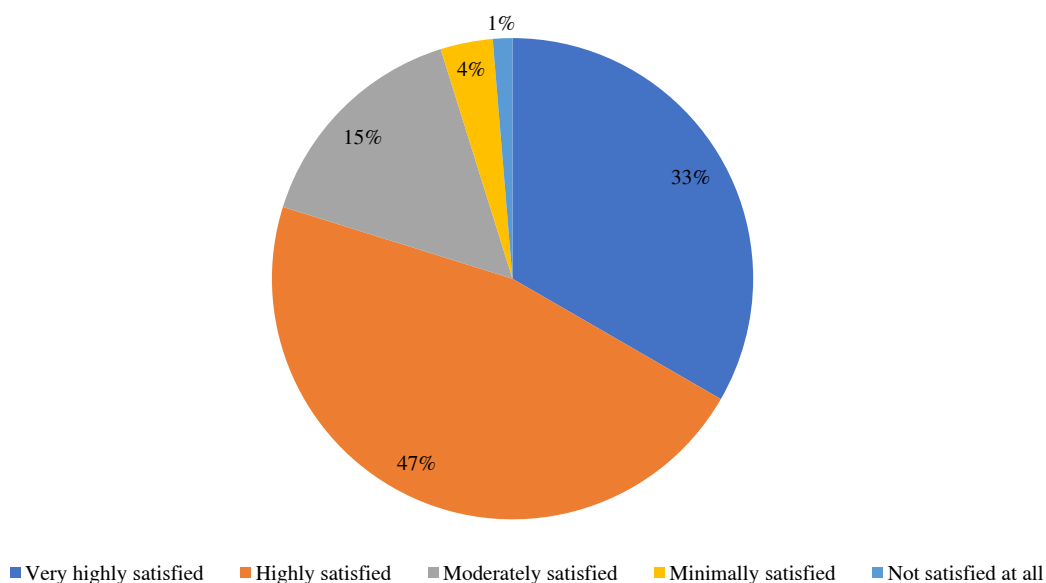


Figure 1: Illustrates Satisfaction with Joint Replacement among Participants

Would you say your health is?

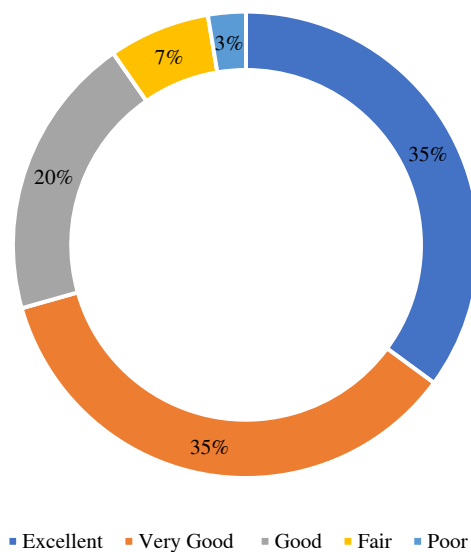


Figure 2: Illustrates Health Status Among Participants

Table 6: Relation Between Satisfaction with Knee Replacement Surgery and Sociodemographic Characteristics.

Parameters		Satisfaction with knee replacement surgery		Total (N=228)	p-value*
		Patient is highly satisfied	Moderate or no satisfaction		
Gender	Female	113	22	135	0.800
		58.9%	61.1%	59.2%	
	Male	79	14	93	
		41.1%	38.9%	40.8%	
Age	54 years or less	55	12	67	0.140
		28.6%	33.3%	29.4%	
	55 to 59	59	7	66	
		30.7%	19.4%	28.9%	
	60 to 65	41	13	54	
		21.4%	36.1%	23.7%	
	66 or more	37	4	41	
		19.3%	11.1%	18.0%	
Residential region	Northern region	30	14	44	0.008
		15.6%	38.9%	19.3%	
	Southern region	8	2	10	
		4.2%	5.6%	4.4%	
	Central region	75	14	89	
		39.1%	38.9%	39.0%	
	Eastern region	10	0	10	
		5.2%	0.0%	4.4%	
	Western region	69	6	75	
		35.9%	16.7%	32.9%	
Educational level	Primary school	17	0	17	0.025
		8.9%	0.0%	7.5%	
	Middle school	29	4	33	
		15.1%	11.1%	14.5%	
	High school	51	18	69	
		26.6%	50.0%	30.3%	
	Bachelor's degree	73	7	80	
		38.0%	19.4%	35.1%	
	Master's degree	11	4	15	
		5.7%	11.1%	6.6%	
	PhD	2	0	2	
		1.0%	0.0%	0.9%	
	Uneducated	9	3	12	
		4.7%	8.3%	5.3%	
Marital status	Single	1	0	1	0.008
		0.5%	0.0%	0.4%	
	Married	134	19	153	
		69.8%	52.8%	67.1%	
	Divorced	14	5	19	
		7.3%	13.9%	8.3%	
	Widowed	26	2	28	
		13.5%	5.6%	12.3%	
	Separated	17	10	27	
		8.9%	27.8%	11.8%	
Type of operation	One knee joint replacement	168	31	199	0.818
		87.5%	86.1%	87.3%	
	Both knee joint replacement	24	5	29	
		12.5%	13.9%	12.7%	
Surgery date	<1 year and more than 3 months	59	5	64	0.0001
		30.7%	13.9%	28.1%	
	1 year	77	10	87	
		40.1%	27.8%	38.2%	
	2 years	40	11	51	
		20.8%	30.6%	22.4%	
	3 years	13	1	14	
		6.8%	2.8%	6.1%	
	More than 3 years	3	9	12	
		1.6%	25.0%	5.3%	
Height	160 or less	64	18	82	0.003
		33.3%	50.0%	36.0%	
	161 to 169	46	6	52	
		24.0%	16.7%	22.8%	

Table 6: Continue

Weight	170 to 175	51	1	52	0.001
		26.6%	2.8%	22.8%	
	176 or more	31	11	42	
		16.1%	30.6%	18.4%	
	84 kg or less	61	9	70	
		31.8%	25.0%	30.7%	
	85 to 90	81	7	88	
		42.2%	19.4%	38.6%	
	91 kg or more	50	20	70	
		26.0%	55.6%	30.7%	

*p value was considered significant if ≤ 0.05 .

Table 7: Satisfaction and QoL with Knee Replacement Surgery in Association with Sociodemographic Characteristics

Parameters		Satisfaction and QoL with knee replacement surgery		Total (N=228)	p-value*
		High satisfaction and QoL	Moderate or low satisfaction and QoL		
Gender	Female	98	37	135	0.002
		54.1%	78.7%	59.2%	
	Male	83	10	93	
		45.9%	21.3%	40.8%	
Age	54 years or less	48	19	67	0.198
		26.5%	40.4%	29.4%	
	55 to 59	54	12	66	
		29.8%	25.5%	28.9%	
	60 to 65	47	7	54	
		26.0%	14.9%	23.7%	
	66 or more	32	9	41	
		17.7%	19.1%	18.0%	
Residential region	Northern region	22	22	44	0.0001
		12.2%	46.8%	19.3%	
	Southern region	10	0	10	
		5.5%	0.0%	4.4%	
	Central region	68	21	89	
		37.6%	44.7%	39.0%	
	Eastern region	10	0	10	
		5.5%	0.0%	4.4%	
	Western region	71	4	75	
		39.2%	8.5%	32.9%	
Educational level	Primary school	12	5	17	0.119
		6.6%	10.6%	7.5%	
	Middle school	26	7	33	
		14.4%	14.9%	14.5%	
	High school	51	18	69	
		28.2%	38.3%	30.3%	
	Bachelor's degree	71	9	80	
		39.2%	19.1%	35.1%	
	Master's degree	12	3	15	
		6.6%	6.4%	6.6%	
	PhD	2	0	2	
		1.1%	0.0%	0.9%	
	Uneducated	7	5	12	
		3.9%	10.6%	5.3%	
Marital status	Single	0	1	1	0.012
		0.0%	2.1%	0.4%	
	Married	130	23	153	
		71.8%	48.9%	67.1%	
	Divorced	12	7	19	
		6.6%	14.9%	8.3%	
	Widowed	21	7	28	
		11.6%	14.9%	12.3%	
	Separated	18	9	27	
		9.9%	19.1%	11.8%	
Type of operation	One knee joint replacement	156	43	199	0.331
		86.2%	91.5%	87.3%	
	Both knee joint replacement	25	4	29	
		13.8%	8.5%	12.7%	

Table 7: Continue

Surgery date	<1 year and more than 3 months	55	9	64	0.0001
		30.4%	19.1%	28.1%	
	1 year	78	9	87	
		43.1%	19.1%	38.2%	
	2 years	34	17	51	
		18.8%	36.2%	22.4%	
	3 years	10	4	14	
		5.5%	8.5%	6.1%	
Height	More than 3 years	4	8	12	0.184
		2.2%	17.0%	5.3%	
	160 or less	62	20	82	
		34.3%	42.6%	36.0%	
	161 to 169	45	7	52	
		24.9%	14.9%	22.8%	
	170 to 175	44	8	52	
		24.3%	17.0%	22.8%	
Weight	176 or more	30	12	42	0.0001
		16.6%	25.5%	18.4%	
	84 kg or less	65	5	70	
		35.9%	10.6%	30.7%	
	85 to 90	74	14	88	
		40.9%	29.8%	38.6%	
	91 kg or more	42	28	70	
		23.2%	59.6%	30.7%	

*P value was considered significant if ≤ 0.05 .

limitations to their daily activities because of emotional problems although this only occurred in a significant minority according to survey results (13.6%). The research indicates that 55.7% of participants faced no daily task challenges due to pain but ongoing pain management solutions might benefit the few people who faced any level of interference.

Table 4 within the research article shows findings about total knee replacement surgery patient satisfaction which provides essential understanding of postoperative experience for studied subjects. The surgical intervention demonstrated effectiveness through patient satisfaction results because 84.2% of participants expressed high satisfaction rates. A minority set of patients made up 7.9% of those who described their satisfaction as moderate while an exact same percentage rated it as low.

The research article uses Table 5 to deliver powerful findings about patient perception of treatment success and quality of life following total knee replacement operations. The majority of 79.4% of study participants expressed high levels of satisfaction alongside Quality of Life improvements after their total knee replacement surgery. Total knee replacement surgery proves effective as a treatment approach because it improves the life quality of people who suffer from painful knee disorders. The evaluation reveals that 17.1% of patients achieved moderate satisfaction along with QoL improvement after their knee replacement surgery. The 3.5% of patients with low satisfaction indicate potential postoperative complications or unfulfilled expectations and results.

Table 6 shows that satisfaction with knee replacement surgery has statistically significant relation to residential region (P value=0.008), educational level (P value=0.025), marital status (P value=0.008), surgery date (P value=0.0001), height (P value=0.003), and weight (P

value=0.001). It also shows statistically insignificant relation to gender, age, and type of operation. Participants of western region, holding a bachelor's degree, married, 170 to 175 cm in height, and weighing 85 to 90 kg were found to have higher satisfaction levels than others.

Table 7 shows satisfaction and QoL with knee replacement surgery has statistically significant relation to gender (p value = 0.002), residential region (p value = 0.0001), marital status (p value = 0.012), surgery date (p value = 0.0001), and weight (p value = 0.0001). It also shows statistically insignificant relation to age, educational level, type of operation, and height. Participants who are of male gender, residing in western region, married, and weighing 84 kg or less were found to have higher satisfaction and quality of life than others.

DISCUSSION

Health professionals consider Total knee arthroplasty (TKA) as an essential treatment method for severe knee osteoarthritis patients while their satisfaction levels with this surgical approach continue to receive substantial interest. The present study conducted as a cross-sectional survey aimed to measure TKA outcome satisfaction among Saudi Arabian patients. The majority of 79.8% of survey participants expressed elevated satisfaction levels following surgery which demonstrates the successful ability of TKA to enhance patient quality of life (QoL). Several previous studies verify these findings since most knee replacement surgery patients detect meaningful functional and pain improvement outcomes after their procedures. The results of systematic reviews indicate patients achieve measurable quality of life enhancements following total knee arthroplasty because their satisfaction numbers surpass 70% [13]. The positive satisfaction responses could be attributed to medical progress that has resulted in better surgical

methods and post-treatment care which decreases adverse effects and hastens recovery [14].

Patient satisfaction after TKA proves to be highly impacted by various demographic characteristics of the individuals undergoing treatment. Our study along with other research establishes that residents living in the western area combined with individuals holding higher education degrees and those who are married tend to have better post-TKA satisfaction results. Health literacy increases following education according to previous research which studied patients undergoing comparable procedures [15]. fSuccessfully improving patient compliance with surgeries recovery protocols. Postoperative patients benefit from social support networks since their marital status affects recovery by enhancing emotional stability while teaching adaptive coping methods [16]. The findings of our study support research from Tabassum *et al.* by demonstrating the importance of social and cultural conditions on patient recovery experiences after total knee arthroplasty [17].

The analysis demonstrates that significant associations exist between patient productivity improvements and satisfaction levels following medical procedures. Although most patients were satisfied with their post-operative experiences our research showed that 17.1% reported moderate satisfaction scores because their pain persisted beyond expectations. According to research high pain ratings three months after the procedure result in lasting dissatisfaction together with decreased functional outcomes [18]. The data shows that TKA achieves excellent outcomes for numerous patients but certain patients will need supplemental measures to achieve lasting satisfaction.

The discussion about functional improvements gained following surgery deserves specific attention for a proper assessment. Research supports our findings which show that 86.4% of patients experienced better physical capabilities after surgery for TKA since effective rehabilitation following TKA operations leads to improved mobility and functionality [19]. Joint stability along with long-term muscle strength may reach their potential peak through comprehensive rehabilitation programs which ensure optimal satisfaction levels according to research [14]. The recovery framework is multifactorial according to research [20] which shows that certain patients encounter ongoing limitations from psychological aspects and sustained pain. Such strong relationships between knee function and mental recovery episodes suggest that TKA patients need integrated treatment methods including mental health support.

The findings of this present work need attention regarding their capacity to generalize. Based on its nature as a geographic-area specific research this study restricts generalizable results to broader population groups. The research approach implemented diverse sampling but probably failed to properly include every demographic element which effects patient satisfaction. Studies have identified that surgical methods together with patient demographics and healthcare setup differences produce major impacts on TKA surgical outcomes as well as patient

attitudes [21]. The small sample size of participants from selected demographics reduces the strength of the research findings thus new research should include participants from diverse backgrounds to improve widespread understanding of satisfaction factors.

CONCLUSION

Our research confirms patients in Saudi Arabia achieve significant satisfaction from their total knee replacement experiences according to established TKA effectiveness studies. The research demonstrates how individual patient contexts must guide personalized care strategies because demographic factors affect satisfaction outcomes. Advanced holistic care practices for TKA surgery require detailed monitoring of patients who encounter complications or unmet clinical expectations because of their dissatisfaction. Research advancements must focus on combining extensive patient experience evaluations with long-term monitoring because this combination will help enhance surgical post-operation care systems for various patient needs.

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Ethical approval

After fully explaining the study and emphasizing that participation is optional, each participant gave their informed consent. The information gathered was safely stored and utilized exclusively for study.

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Conflict of interests

The authors declare no conflict of interest.

Informed consent

Written informed consent was acquired from each individual study participant.

Data and materials availability

All data associated with this study are present in the paper.

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