

Assessment of Nurses' Knowledge Concerning Knee Arthroplasty at Al Muthanna Hospitals

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Abstract

Background: Total knee arthroplasty (TKA) is a viable treatment for symptomatic knee osteoarthritis that is resistant to conservative measures. A potentially promising alternative option for cartilage regeneration in those with degenerative end stage modifications that damage the articular cartilage involving multiple knee compartments is yet to be reported in the literature.

Study Aim: The aim was to assess the nurses' knowledge concerning Total Knee Arthroplasty (TKA), Al Hussein Teaching Hospital.

Method: A quantitative descriptive design was used with a cross sectional sample. In total 50 nurses in Al Muthanna Hospitals self-administered a questionnaire entitled "Nurses' Knowledge Concerning Knee Arthroplasty". The questionnaire included six domains to assess nurses' knowledge concerning total knee arthroplasty.

Results: There were no statistically significant relationships found between nurses' knowledge regarding care of patients undergoing TKA and select nurse demographics.

Conclusion: The researcher found a decrease in nurses' knowledge regarding the patient care needs of those undergoing TKA and a non-significant association between demographic data and nurses' knowledge.

Recommendations: Periodic availability of unique pre-service and in-service training programs about knee arthroplasty for updating nurses' knowledge regarding TKA.

Keywords: nurse knowledge; Knee Arthroplasty; nursing care

Introduction

Total knee arthroplasty (TKA) is used in the treatment of chronic refractory knee pain and loss of movement because of various underlying knee problems (Sheth et al., 2017). While knee osteoarthritis (OA) is one of the most common symptoms associated with the need for TKA, rheumatoid arthritis, fractures, and malignancies are also seen in patients requiring TKA (Saragaglia et al., 2017).

Nurses are responsible for ensuring the safety and quality of patient care at all times (James, 2013). To help nursing staff maintain adequate knowledge and provide excellent care free from errors, it is necessary to continuously equip nurses with adequate knowledge and skills to ensure patient safety and reduce the probability of patient complications (Cohen, 2008).

Methodology

This quantitative descriptive research study was carried out in Iraq. Participants were orthopedic nurses and were approached in their work environments and asked to take part in the research. The Study Setting and Subjects The study participants consisted of all nurses who were employed in orthopedic departments in Al Hussein hospital and Elkheder General Hospital, Al Muthanna, Iraq. The participants freely volunteered to participate in the study. The Sample Size : sample size was 50 to achieve an adequate effect size. We assumed a 50% response rate since no previous research on TKA awareness had been done. On the basis of

these computations, we aimed to include all nurses in the hospital in the study. The Questionnaire :the questionnaire was composed of six sections. The first part involved the knowledge of nurses with regard to TKA. The second part concerned the anatomy of the leg, and the third part concerned the indications for TKA. The fourth part highlighted the knowledge concerning the preparation of patients for TKA. The fifth part was to analyze nurse knowledge regarding the post-operative process. Finally, the sixth part evaluated the follow-up instructions for patients who were discharged. In addition, questions about the study participants' baseline characteristics were collected (gender, marital status, age, region of residency, and level of education).

Results : The study was carried out to assess nurses' knowledge concerning TKA. According to the socio-demographic data, a distribution of the studied nurses revealed that more than half of the studied nurses were male. About half of them had preparatory nursing school. The mean years of experience was 5.90 ± 4.33 as general nurses, and mean years of experience was 2.78 ± 2.07 as orthopedic nurses.

Table (1): Distribution of the studied nurses according to socio-demographic characteristics of the study participants (n = 50)

Socio-demographic characteristics	No.	%
Age (years)		
20–24	24	48.0
25–29	18	36.0
30–34	4	8.0
35–39	3	6.0
40–44	1	2.0
Min. – Max.	21.0 – 40.0	
Mean \pm SD.	25.92 ± 4.41	
Gender		
Male	35	70.0
Female	15	30.0
Social-Status		
Single	23	46.0
Married	22	44.0
Divorced/ Widow	5	10.0
Education		
Nursing preparatory school	29	58.0
Nursing institution	11	22.0
Nursing baccalaureate	10	20.0
Setting		
Urban	38	76.0
Rural	12	24.0
Work		
Yes	37	74.0
No	13	26.0
Experience (as general nurse)		
Min. – Max.	1.0 – 20.0	
Mean \pm SD.	5.90 ± 4.33	
Experience (as orthopedic nurse)		
Min. – Max.	1.0 – 8.0	

Mean \pm SD.	2.78 \pm 2.07	
Training		
Yes	12	24.0
No	38	76.0
No. Training		
No	38	76.0
1-2 training	10	20.0
3-4 training	2	4.0
Time of T		
No	38	76.0
Week	10	20.0
Two weeks	2	4.0
Setting of T		
No	38	76.0
Inside of Iraq	12	24.0
Self-learning		
Yes	18	36.0
No	32	64.0

SD: Standard deviation

Nurses' knowledge of knee arthroplasty	Total score	% score
Anatomy & physiology		
Mean \pm SD.	1.44 \pm 1.07	24.0 \pm 17.87
Indication of TKR replacement		
Mean \pm SD.	1.40 \pm 0.90	20.0 \pm 12.91
General knowledge about TKR		
Mean \pm SD.	1.74 \pm 1.12	29.0 \pm 18.69
Preoperative preparation		
Mean \pm SD.	2.22 \pm 1.22	37.0 \pm 20.28
Post- operative care		
Mean \pm SD.	4.12 \pm 3.83	20.60 \pm 19.13
Rehabilitation		
Mean \pm SD.	0.96 \pm 0.95	19.20 \pm 18.93
Overall Knowledge		
Mean \pm SD.	11.88 \pm 6.16	23.29 \pm 12.08

Table (3): Correlation between Nurses' knowledge of knee arthroplasty and demographic data (n = 50)

		Age (years)	Education	Experience As general nurse	Experience as orthopedic nurse	No. Training
Anatomy	r_s	0.212	0.033	0.203	0.158	0.130
	p	0.139	0.821	0.158	0.274	0.368
Replace the reasons behind	r_s	0.138	-0.244	0.121	0.129	-0.001
	p	0.339	0.088	0.401	0.370	0.993
Introduction to	r_s	0.143	0.099	0.136	0.029	0.111

TKR	p	0.322	0.496	0.345	0.843	0.443
Preparation	r_s	0.086	0.086	0.119	0.104	0.072
	p	0.554	0.551	0.411	0.473	0.619
Care after operation	r_s	0.207	0.218	0.193	0.114	0.037
	p	0.149	0.128	0.179	0.430	0.800
Rehabilitation	r_s	0.071	-0.007	0.135	0.077	0.086
	p	0.624	0.963	0.349	0.596	0.551
Overall knowledge	r_s	0.230	0.128	0.237	0.138	0.110
	p	0.108	0.376	0.098	0.338	0.445

r_s: Spearman coefficient*: Statistically significant at $p \leq 0.05$

Discussion

Nurses are the first line care givers and the most important members of the clinical staff in promoting recovery after a surgical procedure (Arbabisarjou, 2012). Therefore, the purpose of this study was to evaluate the knowledge of nurses concerning Knee Arthroplasty in the Al Hussein Teaching Hospital in 2020. The current findings contribute to the first step in providing baseline data to understand the levels of nurses' understanding related to TKA among nurses in Iraq. The results from this study may be used to compare prospective evidence from other countries in the Middle East and beyond, which can help assess the consistency and adequacy of population-oriented TKA education campaigns.

The primary aim of this research was to determine the expertise of nurses related to the care of the TKA patient, in order to direct nursing authorities in future nurse training and education plans. The findings of the current study revealed that participants had inadequate knowledge of TKA in the domains of joint replacement indications, anatomy, pre and post-operative care, rehabilitation, and overall knowledge.

With respect to the relationship between nurse knowledge domains concerning Knee Arthroplasty and nurse demographic data, no significant relationships between nurses' demographic data and their knowledge scores were found.

The results of this study are in agreement with past studies. Nurse knowledge deficiency was also found in a study by Kiekkas et al. This study also indicated post-operative care knowledge deficits of nurses, illustrating the need for pre-graduate and continuing education of nurses, so they are suitably trained in the post-operative care of each patient. Further nurse education is also needed in the development of patient empathy and professional competency regarding patient evaluation and prescription administration, especially regarding pain medication (Kiekkas, 2014). In addition (Rasslan, 2011), in order to get trained practitioners to take on infection prevention and control operations, it is important to have a more complete and rigorous training curriculum.

Causey-Upton et al. (2020) found that nurses believed that preoperative education is a significant component impacting patient outcomes following surgery. The study also found that inter-professional preoperative education was valued, but pragmatic factors were identified as barriers to the inclusion of other disciplines within these programs. This may indicate that nurses are in a prime position to optimally deliver preoperative education.

Conclusion

In order to assess their knowledge of Knee Arthroplasty, this study was carried out on nurses at Al Hussein Teaching Hospital in Iraq. This research confirms that frequent training is needed by nurses to update their knowledge and thus improve their knowledge and practices related to the care of Knee Arthroplasty patients. Also, the findings from this

study agree with other study results indicating that most of the nurses studied had insufficient knowledge concerning Knee Arthroplasty.

Recommendations

Based on the existing findings of this report, it is proposed that health institutions need to arrange regular educational program through in-service training on the care of the TKA patient. This education should provide nurses with knowledge related to best practices based on current evidence. Nurse education needs to include pre and post-operative guidelines. Nursing faculty also need to be active in the design and formulation of comprehensive guidelines for best practices in the promotion of optimal care outcomes for TKA patients. Educational interventional studies examining how to best educate nurses on the care of TKA patients are also recommended.

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