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Effect of a Nursing Education Protocol on Patient Knowledge and Satisfaction Following Hip Joint Replacement Surgery

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Abstract

Background: Hip joint replacement (HJR) is a prevalent surgical procedure for hip joint disorders. A successful recovery following hip replacement surgery necessitates effective preoperative and postoperative patient' teaching, which enhances patient satisfaction. **Aim:** to evaluate the effect of a Nursing Education Protocol on Patient Knowledge and Satisfaction Following Hip Joint Replacement Surgery. **Patients and Methods:** A quasi-experimental research design was used for a sample of 60 adult male and female patients who attended the trauma department, age ranged from 20-65 years old, and undergoing hip joint replacement. They were randomly assigned to two groups using a shuffled deck of cards (even numbers were designated as the control group and odd numbers as the study group), with thirty patients in each group. Nursing teaching protocol was applied to the study group (teaching booklet) while control group received routine hospital care. **Tools:** (I) Patient assessment sheet and (II) Surgical satisfaction questionnaire. **Results:** A high percentage of study group were have satisfactory knowledge and good surgical satisfaction score level after implementation of nursing teaching protocol (70% and 66.7% respectively). There was statistically significant difference between patients in study and control groups regarding patients' knowledge and patients' satisfaction during follow up after two weeks and three months (p.value=0.001). **Conclusion:** Application of nursing teaching protocol showed significant effect in increasing patients' knowledge and patients' satisfaction. **Recommendations:** To achieve the best patient outcomes, nurses must provide nursing teaching booklet for patients and should be accessible in the trauma department for those patients.

Keywords: Hip Joint Replacement, Nursing Teaching Protocol, Patients Knowledge & Patients Satisfaction

Introduction

Hip joint replacement (HJR) is a highly effective surgical intervention for hip joint diseases and injuries that do not respond to conservative treatment. This procedure has demonstrated significant success in managing both degenerative and inflammatory joint conditions, leading to pain reduction, restored limb function, decreased disability, and enhanced overall quality of life **(Nicolau et al., 2022).**

Common indications for hip arthroplasty include osteoarthritis, osteonecrosis, avascular necrosis, and inflammatory conditions such as rheumatoid arthritis and post-traumatic arthritis. End-stage hip joint arthritis often results in severe pain that significantly hinders daily activities. Hip joint replacement is typically considered when conservative measures including nonsteroidal anti-inflammatory drugs (NSAIDs), lifestyle modifications, and previous surgical interventions have failed to alleviate pain and improve hip function **(Marahatta & Sigdel, 2020).**

Nurses play a crucial role for teaching patients undergoing hip joint replacement. Preoperatively, the nurse explains the surgical procedure and rehabilitation exercises and how to use assistive devices such as walker and crutches properly with the goal of improving quality of life and activities of daily livings, Also, the nurse demonstrates how to perform breathing and coughing exercises and educate patients positioning precautions to prevent postoperative hip dislocation**(Yin et al., 2022)**.

Postoperatively, the nurse demonstrates the patient how to perform wound care, educate the importance of medication after surgery (anticoagulant drugs), prevention of complication after surgery such as DVT, infection of prosthesis and hip dislocation, getting back to work, warning signs and symptoms of infection and postoperative exercises that can lead to improve the performance of activities of daily livings, increasing individual independence, patient satisfaction and improving the quality of life for hip arthroplasty patients **(Fontalis et al., 2021).**

There is an increasing demand for preoperative education and nursing teaching protocol for patients undergoing hip joint replacement surgery. Research demonstrated that preoperative education can enhance patient outcomes and satisfaction with the surgical

experience. Therefore, the current study was carried out to evaluate the effect of nursing teaching protocol on knowledge and satisfaction for patients undergoing hip joint replacement **(Longo et al., 2023).**

Significance of the study

Between January 2022 and September 2022, approximately 160 cases of hip joint replacement were recorded in the trauma unit at Assiut University Hospitals **(Assiut University Hospital records, 2022).** Research has indicated that patients undergoing hip joint replacement often experience postoperative issues due to insufficient awareness of necessary nursing instructions, which impacts their satisfaction and contributes to prolonged hospitalizations and increased healthcare costs **(Sayed et al., 2023).** Consequently, this study aims to implement a nursing teaching protocol designed to enhance patient knowledge and improve satisfaction.

Operational definitions:

Patient knowledge:

Patients' ability to follow pre-operative instructions, such following precaution to prevent hip dislocation, can be used as an indicator of their knowledge.

Patient satisfaction:

Patients' compliance with treatment recommendations, such as medication regimens or follow-up appointments, can be seen as a reflection of their satisfaction with care.

Aim of the study:

Was to evaluate the effect of nursing teaching protocol on knowledge and satisfaction for patients undergoing hip joint replacement.

This aim was achieved through the following objectives:

- Assess level of knowledge for patients undergoing hip joint replacement.
- Design and implement nursing teaching protocol for patients undergoing hip joint replacement.

Evaluate the effect of implementing nursing teaching protocol on patient's knowledge and satisfaction.

Hypothesis:

To fulfill the aim of the study, the following hypothesis was formulated.

- The post mean knowledge score of study group will be higher than that of control group patients.
- Study group will report increased level of satisfaction than the control group.

Patients and Methods:

Research design:

Quasi experimental research design was utilized in this study.

Setting:

The study was conducted at trauma unit at Assiut University Hospital.

Sample:

A sample of 60 adult patients, both male and female, aged between 20 and 65 years, who were undergoing hip joint replacement in the trauma department, was included in the study. The patients were randomly assigned to two groups using a shuffled deck of cards, with even numbers allocated to the control group and odd numbers to the study group, thirty patients for each group. The study group received the nursing teaching protocol, which included a teaching booklet, while the control group continued to receive routine hospital care.

Sample size:

The sample size was determined considering the total number of patients (160) who had admitted during the year 2022 in the previous mentioned setting, the power analysis that indicate 60 patients to conduct this study. Considering alpha type I error (α) = 5% with confidence level 95% and significance level (α) at 0.05 and power of study (power of test) 80% with type II beta error (β)= 20%

Tools:

The following tools were utilized for data collection:

Tool (I): **Patient assessment sheet:**

This tool was developed by the researcher based on the literature review to assess patient's condition. It will consist of three parts:

Part (1): Demographic data: Such as (age, gender, marital status, level of education, occupation and residence).

Part (2): Medical data: (Medical diagnosis, type of hip joint replacement comorbidities, affected side, mechanism of injury and length of hospital stay).

Part (3): Patients' knowledge about hip joint replacement: This part was assess patient's knowledge regarding definition of hip joint replacement, indication, precautions after THR, diet, medication, preoperative preparations, pain management, wound care, use of assistive devices, coughing and breathing exercise, rehabilitation exercises and its importance, potential complications, prevention of complications such DVT, time and how to start mobilization, time for activity of daily living and regular follow up….. etc) **(Pinskiy et al., 2021)**.

Scoring system:

This part consisted of twenty one open ended questions designed to assess the baseline knowledge of patients undergoing hip joint replacement prior to the implementation of the nursing teaching protocol. The same assessment tool was used after implementing nursing teaching protocol to evaluate changes in knowledge after two weeks and three months postoperatively. All item was scored in to (2) marks for completely correct, (1) mark for incomplete correct and (0) for incorrect. The total score was (42). A score of more than 60% indicated satisfactory

knowledge, while a score of less than 60% indicated unsatisfactory knowledge.

Tool (II): Surgical Satisfaction Questionnaire (SSQ-8)

Haff et al. (2010) developed a validated questionnaire designed to assess and measure post-operative patient satisfaction. This scale consists of eight items or questions that evaluate various aspects of the patient's experience, including pain management, resumption of daily activities, return to work, resumption of normal exercise routines, surgical outcomes, as well as the chance of choosing the same treatment again, and the likelihood of recommending the surgery to others someone.

Scoring system: surgical satisfaction questionnaire was graded by using a 5-point Likert scale and description ranging from 1 =very unsatisfied" to 5 = very satisfied" for the first six questions and from 1 = "never" to 5 = "yes" was used for the last two questions. A higher degree of surgical satisfaction correlates with a higher score. The total score for all items was (40) score. Those who obtained > 70% were considered having good satisfaction and <70% were considered having poor satisfaction.

Nursing teaching Protocol for patients undergoing hip joint replacement (teaching booklet): This tool developed by the researchers based on national and international literature review **Kohlert et al., (2019), and Pinskiy et al., (2021) and Tyerman et al., (2022)** according to the patient's demands and the opinions of medical and nursing experts to increase knowledge and satisfaction. It consisted of:

- Definition of hip joint replacement.
- Indication and function of hip joint replacement.
- Nursing instructions about precautions after THR, diet, medication, preoperative preparations, body position, pain management, wound care, use of assistive devices, coughing and breathing exercise, rehabilitation exercises and its importance, potential complications, prevention of complication such DVT, infection of prosthesis and dislocation of hip, time to start mobilization, time for activity of daily living and regular follow up….. etc).

Content validity:

Content validity was assessed by five experts, including three staff members from the Department of Medical-Surgical Nursing and two orthopedic surgeons from Assiut University. These experts reviewed the tool for its clarity, simplicity, relevance, understanding, comprehensiveness, and applicability.

Reliability of the used tool:

The reliability of the Surgical Satisfaction Questionnaire (SSQ-8) was supported by a Cronbach's alpha of 0.79, suggesting that the questionnaire items measure a consistent construct.

Pilot study:

A pilot study was conducted on 10% of patients (6 patients) at Assiut University Hospitals to ensure the applicability, clarity, feasibility of the study tools and identify the difficulties that may be faced during the application. Necessary modifications were done and the pilot study was not included in the current study.

Ethical considerations:

Before conducting the study, ethical approval from the Ethical Committee in the Faculty of Nursing at Assiut University was obtained with approved number (1120220524) on 25 December 2022 and also official permission from the Dean of the Faculty of Nursing to the Head of the Orthopedic Department to collect data, and explain the aim and contents of the study to nursing supervisors and surgeons to gain their cooperation. Written consent was obtained from patients or families to participate in this study after explanation of the nature and objectives of the study. Confidentiality and privacy was assured. There was no risk for the study subjects during the implementation of the research. Patients had the right or freedom to refuse to participate and or discontinue at any moment without giving any reason.

Procedure:

- Data for the current study was gathered between the beginning of April, 2023 and ended in September, 2023. In addition, both groups of patients continued postoperative follow-up for three months, which finished in December 2023.
- Preparation of the data collection tools and the nursing teaching protocol (teaching booklet) were carried out by the researchers after extensive national and international literature review (nursing and medical textbooks, journals and internet resources) at this phase. Researchers assessed and prepared teaching place, teaching media and aids such as (pictures, videos, demonstration, and booklet) to assist and improve the application of nursing teaching protocol for those patients.
- Before beginning to gather data, the researchers visited patients to initiate line of communication, explain nature and purpose of study to patients who agreed to participate in the study.
- The researchers interacted with every patient individually.
- The researchers collected baseline preoperative data through individual interview with each patient by using tools I.
- The control group received standard hospital care, whereas the study group received standard hospital care supplemented with a nursing teaching protocol. Additionally, each patient in the study group was provided with a copy of the written teaching booklet.

- The nursing teaching protocol was administered to patients across two sessions.
- Each session, lasting between 30 to 40 minutes, included a five-minute period for clarification and addressing questions.
- The sessions were scheduled during both morning and afternoon shifts.
- One family member was permitted to attend each session to provide support to the patient.
- All patients in both groups were followed up for a period of 3 months postoperatively.
- Patients' knowledge and post-operative patient satisfaction about hip joint replacement were assessed using Tool I (Part 3) and Tool II at two weeks and three months after surgery.
- During hospitalization, researchers followed up with patients by visiting the trauma department. After discharge, follow-up continued via phone and at the trauma outpatient clinic.

Statistical analysis:

Data analysis was conducted using SPSS version 26. To compare demographic and medical data between the two groups, independent t-tests and chi-square tests were employed. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to present the data. Research hypotheses were tested using a significance level of 0.05. For analyzing relationships between quantitative variables, the ANOVA test was utilized.

Results:

Table (1): Distribution of demographic data among study and control group n=60

Variables	Study		Control		p.value
	N =30	%	N =30	%	
Age by years					
30<40 yrs	0	0.0	3	10.0	.034*
40<50 yrs	8	26.7	2	6.7	
50<65 yrs	22	73.3	25	83.3	
Sex					
Male	19	63.3	24	80.0	.252 ns
Female	11	36.7	6	20.0	
Marital status					
Single	0	0.0	3	10.0	.182 ns
Married	25	83.3	22	73.3	
Divorce	1	3.3	3	10.0	
Widow	4	13.3	2	6.7	
Education level					
Literature	6	20.0	2	6.7	.170 ns
Read and write	11	36.7	7	23.3	
Secondary	11	36.7	19	63.3	
University	2	6.7	2	6.7	
Occupation					
Working	18	60.0	20	66.7	.789 ns
Not working	12	40.0	10	33.3	
Residence					
Rural	24	80.0	20	66.7	.382 ns
Urban	6	20.0	10	33.3	

Chi square test for qualitative data between the two groups
**Significant level at P value < 0.05*
NS: non statistically significant difference
P.value > 0.05

Table (2): Distribution of medical data among study and control group n=60

Variables	Study		Control		p.value
	N =30	%	N =30	%	
Medical diagnosis					
Femoral neck fracture	17	56.7	20	66.7	0.426 ns
trochanteric fracture	13	43.3	10	33.3	
Type of hip joint replacement					
Total hip replacement	19	63.3	17	56.7	0.598 ns
Partial hip replacement	11	36.7	13	43.3	
Comorbidities					
Hypertension	3	10.0	5	16.7	.577ns
Diabetes mellitus	1	3.3	2	6.7	
Pulmonary disease	0	0.0	1	3.3	
kidney disease	1	3.3	2	6.7	
Hypertension and Diabetes mellitus	1	3.3	2	6.7	
Non	24	80.0	18	60.0	
Affected side					
Right	17	56.7	10	33.3	.119ns
Left	13	43.3	20	66.7	
Mechanism of injury					
FOG	24	80.0	26	86.7	.893 ns
FFH	2	6.7	1	3.3	
MCA	1	3.3	1	3.3	
RTA	3	10.0	2	6.7	

Chi square test for qualitative data between the two group
NS*:* non statistically significant difference P.value > 0.05

Table (3): Comparison between studied groups regarding patients knowledge about hip joint replacement (n=60)

Patients knowledge score levels	study		control		X2/T	P. value
	N	%	N	%		
Preoperative						
Unsatisfactory	29	96.67	25	83.33	2.96	0.085
Satisfactory	1	3.33	5	16.67		
Mean±SD	**18.63±3.78**		**19.2±5.15**		**T=0.48**	**0.629**
2 week postoperative						
Unsatisfactory	9	30.00	18	60.00	5.45	0.020*
Satisfactory	21	70.00	12	40.00		
Mean±SD	**28.8±6.05**		**19.57±7.74**		**5.14**	**<0.001****
3 months postoperative						
Unsatisfactory	14	46.67	24	80.00	4.80	0.028*
Satisfactory	16	53.33	6	20.00		
Mean±SD	25.17±4.97		16.5±7.32		5.36	**<0.001****

Chi square test for qualitative data between the two groups
Independent T-test quantitative data between the two groups
**Significant level at P value < 0.05,*
***Significant level at P value < 0.01*

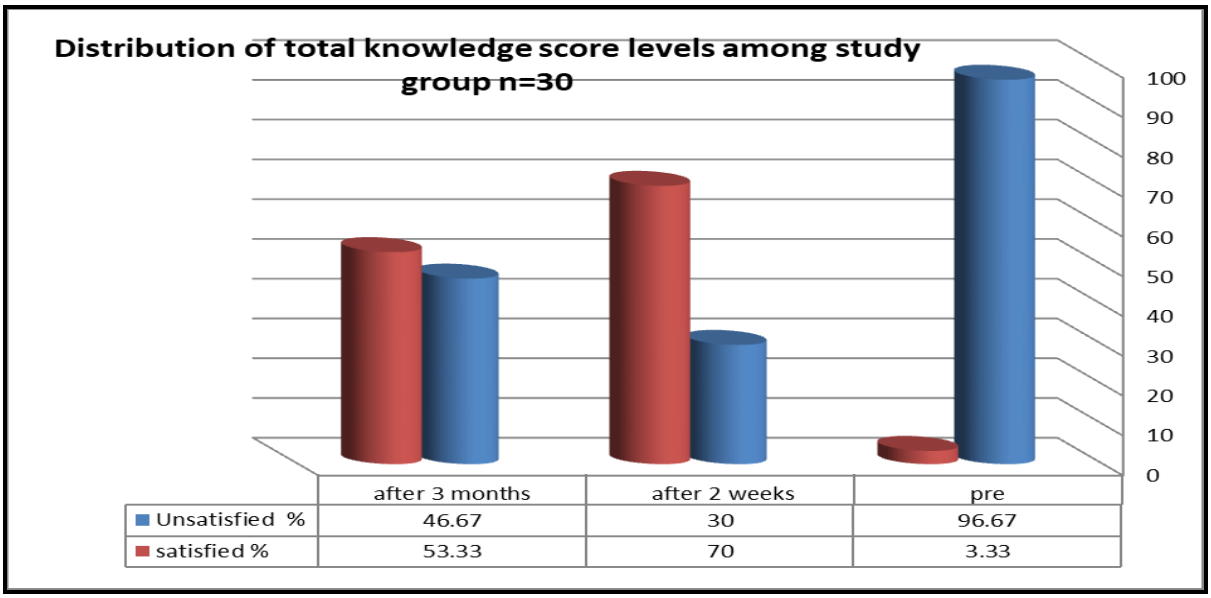

Figure (1): Total patient knowledge score levels among study group as regarding hip joint replacement (n=30).

Table (4): Comparison between both groups regarding total score of surgical satisfaction questionnaire (n=60)

Surgical satisfaction questionnaire	Study		Control		P. value
	N	%	N	%	
2 week postoperative					
Poor satisfaction	10	33.3	27	90.0	**<0.001****
Good satisfaction	20	66.7	3	10.0	
Mean±SD	**35.33±1.63**		**28.27±2.85**		
3 months postoperative					
Poor satisfaction	3	10.0	21	70.0	**<0.001****
Good satisfaction	27	90.0	9	30.0	
Mean±SD	**39.2±0.92**		**32±3.19**		

Chi square test for qualitative data between the two groups
Independent T-test quantitative data between the two groups
**Significant level at P. value < 0.01

Table (5): Correlation between total Patients knowledge and surgical satisfaction questionnaire after 2 weeks and 3 months postoperative.

Patients knowledge about hip joint replacement	Surgical satisfaction questionnaire			
	Study		Control	
	R	P	R	P
2 week postoperative	0.588	**0.001****	-0.088	**0.643**
3 months postoperative	0.390	**0.033***	-0.018	**0.926**

Table (1) showes that; the highest percentage in both groups were aged between 50 and 65 years old (83.3% and 73.3% respectively). Regarding gender, the majority of patients were male in both groups (80.0% and 63.3% respectively). Additionally, the majority of patients in both groups were married (83.3% and 73.3%, respectively). Over one-third of patients in the study group and over two-thirds in the control group had secondary education (36.7% and 63.3%, respectively). Most patients were working (66.7% and 60.0% respectively). Finally, the highest percentages of patients in both groups resided in rural areas (80.0% in the study group and 66.7% in the control group).

Table (2): Reveales that; the majority in both groups had femoral neck fracture (66.7% and 56.7%

respectively). Over half of the patients in each group underwent total hip replacement (63.3 and 56.7% respectively). Also highest percentage of two groups had hypertension (16.7% and 10.0% respectively). Regarding affected side, More than half (56.7%) of study group had right side injury, while (66.7%) of the control group had left side injury. Additionally, the majority of patients in both groups experienced hip fractures as a result of falls on the ground (86.7% and 80.0% respectively). Finally, there were no statistically significant differences between the two groups concerning the length of hospital stay.

Table (3): Reports that; there was no statistically significant difference between both groups regarding preoperative patients' knowledge about hip joint replacement (p. value=0.085). However, a highly statistically significant difference was observed between the intervention and control groups concerning patient knowledge assessed after 2 weeks and 3 months postoperatively (p = 0.001). Patients in the intervention group demonstrated significantly greater improvement in their knowledge following the implementation of the nursing teaching protocol compared to those in the control group.

Figure (1): A high percentage of study group were have satisfactory knowledge score level following the implementation of nursing teaching protocol after 2 weeks and 3 months postoperatively (70 and 53.33% respectively).

Table (4): Shows that; A high percentage of study group were have good surgical satisfaction score level after implementation of nursing teaching protocol after 2 weeks and 3 months postoperatively (66.7 and 90% respectively). there was statistically significant differences in both the study and the control groups with regard to mean score of surgical satisfaction questionnaire after implementation of nursing teaching protocol after 2 weeks and 3 months postoperatively (p.value= 0.001). A statistically significant improvement was found in the study group compared to the control group patients.

Table (5): Shows that; There was a Positive correlation between patients knowledge and surgical satisfaction questionnaire in study group after implementation of nursing teaching protocol after 2 weeks and 3 months postoperatively (r= .558** and .390*), but there is No Statistically Significant Correlation in control group (r= -.088 and -.018).

Discussion:

Hip joint replacement is one of the most popular and effective orthopedic procedures for the treatment of degenerative hip diseases to enhance functional status, lessen immobility, improve quality of life, restore level of physical activity, and relieve pain. The patients' postoperative coping skills appear to benefit from preoperative education. Preoperative education plays active role in their recovery when the patients are given well-organized information regarding the surgery and the entire care pathway. Additionally, controlling patients' expectations before surgery is crucial for improved physical function after surgery and satisfaction with the results of the procedure **(Ragab et al., 2022).**

Aim of this study was; evaluate the effect of implementing nursing teaching protocol on patient's knowledge and satisfaction for patients undergoing hip joint replacement**.**

The discussion will cover the main result findings in the following sections:

Demographic characteristics and medical data:

The current study found that over two-thirds of patients in both groups were between the ages of fifty and sixty years. This finding was consistent with **Ragab et al. (2022)** who reported that two-thirds of patients in both the study and control groups were also aged between fifty and sixty years. In contrast, **Alam et al. (2020)** observed that the majority of patients in both groups were over forty years old, which differs from the results of the present study.

The present study reported that; the majority of all patients participant in both group were males. **From opinion of researchers,** the majority of males in both groups may be attributed to the increased likelihood of occupational trauma among men, who are often expected to be primary financial providers, thereby elevating their risk of trauma and falls. Similar to the current study **(Abd El-Naby & Alhosi, 2021)** documented that the majority of patients in both group were males. Our study contradicts **(Wong et al., 2024)** who found that all participants in their study were female.

The current study showed that more than two thirds in the study group and over half of those in the control group had femoral neck fractures. This result contradicted with **(Randelli et al., 2023)** who reported equal rates of trochanteric and femoral neck fractures between the two groups.

As regard to type of hip joint replacement, the present study revealed that more than half of the patients in the study group and over two-thirds of those in the control group underwent total hip replacement to alleviate severe hip pain. This finding was matched with **Mohammed et al., (2023)** who reported that more than half of the patients in both groups underwent total hip replacement. In the other side **(Amarilla-Donoso et al., 2020)** found that the majority of elderly patients were treated with partial hip joint replacement. **From opinion of researchers,** the femoral head in elderly patients often exhibits markedly fragile bone, which complicates the internal fixation process. Additionally, intertrochanteric and

femoral neck fractures frequently result in disruptions to the blood supply. Consequently, the management of most intertrochanteric and femoral neck fractures in this population typically involves total hip replacement.

Regarding the mechanism of injury, the current study reported that high percentage among patients in two groups suffered hip fractures due to falls on the ground. This finding was confirmed by **(Abdelrahman et al., 2020)** who noticed that the most common cause of hip fractures in the elderly patients is falling on the ground that required performing arthroplasty. Also, this finding was not congruent with **(Ragab et al., 2022)** who found that the majority of two groups reported having fractures as a result of accidents.

The study findings regarding duration of hospital stay, it was discovered that study and control groups had an average hospital stay of two weeks. **From opinion of researchers,** the studied participants stayed long time in hospital due to artificial prosthesis was so expensive which necessitated a lengthy approval process for state expenditure and subsequent investigations. This finding was consistent with **Lai et al. (2022)** who reported a mean hospital stay exceeding two weeks. In contrast, **Mohammed et al. (2023)** found that more than half of the patients in both groups who underwent hip replacement had hospital stayed ranging from three days to one week.

Patient`s knowledge assessment:

Regarding to knowledge level of studied patients, the present study showed that, the majority of patients in both group had unsatisfactory level of knowledge preoperatively prior implementing of nursing teaching protocol. **From opinion of researchers,** patients often exhibit inadequate knowledge due to a lack of training programs, limited access to continuing education and counseling, and the absence of routine provision of written information regarding surgical procedures. However, following the implementation of the nursing teaching protocol, a significant statistical difference in patients' knowledge was observed between the two groups at two weeks and three months postoperatively. Patients in the intervention group demonstrated a more substantial improvement in their knowledge compared to those in the control group.

These findings are consistent with the study of **Sato et al. (2023)** who reported a statistically significant improvement in patient knowledge within three months of participating in discharge planning education

Surgical satisfaction questionnaire assessment:

The findings of this study indicated a statistically significant difference between the two groups regarding the mean scores of the surgical satisfaction questionnaire following implementation of nursing teaching protocol after 2 weeks and 3 months postoperatively. Notably, the study group exhibited a significant improvement compared to the control group. **From opinion of researchers,** the implementation of a nursing teaching protocol had a positive and effective impact in enhancing patients' postoperative knowledge and reduce anxiety that result in improvement in patients satisfaction following surgery.

In agreement with this study finding, study of **(Kaur & Aggarwal, 2022)** who demonstrated that, patients who underwent total joint arthroplasty were satisfied with their results. In the same line with the findings of this study, **Longo et al. (2023)** observed that among sixty adult patients in a trauma unit, there was a notable increase in satisfaction levels following the implementation of an educational program.

The current result found positive correlation between patient's knowledge and surgical satisfaction questionnaire among the study group after implementation of nursing teaching protocol after two weeks and three months postoperatively. **From opinion of researchers,** this could be due to the effect of nursing teaching protocol (teaching booklet) of the study group. This because commitment to postoperative exercise, precautions after HJR and practicing activity of daily living led to an increase in hip function and satisfaction level. The finding was matched with **(Lv & Yang, 2021)** reported that positive correlation between patient's knowledge and satisfaction; patients increased as increased in joint function after the implementation of nursing rehabilitation.

Conclusion:

Based on the findings of the current study, it can be concluded that patients in the intervention group who received the nursing teaching protocol (including the teaching booklet) following hip joint replacement (HJR) demonstrated significant improvements in both their knowledge and satisfaction levels. These results support the research hypotheses.

Recommendations:

The present study recommends the following:

1. Simple written teaching booklet should be accessible and provided for patients undergoing hip joint replacement. This booklet should include clear, straightforward instructions about preoperative and postoperative care to ensure patients understand the necessary procedures and steps.
2. Periodic assessment of nursing knowledge and practices in trauma department should be conducted. These assessments should focus on

preoperative and postoperative nursing care, as well as the effectiveness of the teaching and instructions provided to patients before discharge. This will help ensure that all patients receive consistent and up-to-date care.

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