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Impact Of Rehabilitation Program On Quality Of Life For Patients Undergoing Hip Joint Replacement

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Abstract
Background: Hip replacement (THR) is the best standard surgical intervention that effectively alleviates symptoms and restores mobility and significantly enhancing their overall quality of life in patients with debilitating hip disease.
Aim of study: evaluate the impact of the rehabilitation program for improving quality of life for patients undergoing hip joint replacement.
Research design: Quasi experimental research design was utilized in this study.
Setting: Trauma unit at Assiut University Hospitals, Egypt.
Subjects: A total number of sixty adult patient undergoing hip joint replacements (Male and female) their age ranged from 20 to 65 years old from the previous mentioned setting with hip joint replacement and equally divided on random basis into study and control group, thirty for each group.
Tools: (I) Patient assessment sheet, (II) Rand Short Form 36-Items questionnaire and (III) Patient complication evaluation.
Results: A high percentage of study group were have satisfactory knowledge and adequate practice score level after implementation of rehabilitation program (70%, 83% respectively) and statistically significant difference between two groups concerning total knowledge and practice, and quality of life score at (one, three and six months post-operatively) with p. value =0.001.
Conclusion: The current study showed that study group who implemented rehabilitation program following HJR exhibited enhanced knowledge, practice, and quality of life.
Recommendations: Discharge planning and teaching booklet should be available in trauma unit and distributed for all patients with hip joint replacement surgery using illustrated pamphlets.

Key words: Hip Joint Replacement, Quality of Life &Rehabilitation Program

Introduction

Hip joint replacement (HJR) is a cornerstone intervention for hip joint pathologies within the field of orthopedics. This surgical technique involves the arthroplasty of the hip joint, substituting the native components with artificial prostheses. HJR surgery may include a hemiarthroplasty or a total hip replacement, with the primary objectives of alleviating joint pain, stiffness, restoring the function of hip, and enhancing quality of life for individuals with hip disorder or trauma. The global incidence of THR represents one million procedures annually **(Grozdeva et al., 2023).**
In Egypt in 2006, there was a prevalence of 400,000 individuals aged 60 who had undergone hip joint replacement surgery, constituting 6.9% of the total population. This percentage expected increase, reaching 8.9% by 2016, and also expected substantial increase to 10.9% by 2026 (**Tetreault et al., 2020).**
Hip arthroplasty is the best standard surgical intervention for pathologies of hip joint and demonstrating the beneficial - term results. A primary indication for this procedure is to enhance the activity of daily living for patients experiencing debilitating hip conditions. Total hip arthroplasty is a final therapeutic option aims to alleviate pain, restore mobility, and facilitate carrying out of daily living activities.
QoL is multidimensional variable that encompassing physical, social, and psychological well-being, influenced by cultural, political, economic, and spiritual factors. Hip joint replacement can significantly impact an individual's QoL and many patients do not regain pre-injury functional levels. Patients with hip joint replacement may experience a marked deterioration in QoL post-surgery that include include severe pain, discomfort, anxiety, depression, impaired mobility, difficulties with activities of daily living (ADLs) (**Terai et al., 2022).**

Postoperative complications following hip joint replacement are infrequent, may necessitate revision surgery. Potential complications such as blood clots, vascular injury, hip dislocation, infection of prosthesis, implant loosening, and nerve damage. While some complications, such implant fracture can occur mostly intraoperative and others may manifest weeks or months post-surgery **(Ravi et al., 2018).**

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Rehabilitation is a comprehensive process aimed at maximizing an individual's functional capacity, independence, and quality of life. Goals of rehabilitation are pain management, optimizing range of motion and muscular strength in affected extremities, facilitating wound healing, enhancing functional mobility, providing ongoing patient education, functional restoration, prevent complication and improve quality of life. Early rehabilitation progress is a critical determinant of a patient's successful return to pre fracture level **(Yin et al., 2022).**
The nurse plays important role in the prevention of complication, preoperative and following surgery nursing care. Preoperatively, the nurse explains the surgical technique before surgery and how to use assistive devices such as walker and crutches properly can help lowering patient anxiety. Also, the nurse demonstrates how to perform breathing and coughing exercises and educate patients positioning precautions to prevent postoperative hip dislocation. Postoperatively, the nurse provides specialized care and routine care after surgery such as wound care, medication (anticoagulant drugs), getting back to work and warning signs and symptoms of infection **(Liu,et al., 2021).**

Operational definitions:
Rehabilitation Program: a structured intervention designed to knowledge, practice, improve quality of life and lessen complications for patients undergoing hip arthroplasty.

Quality of Life: is a multidimensional variable used to evaluate quality of life and consists of eight domains.

Hip Joint Replacement: is a surgical procedure that involving substitute damaged components with artificial prostheses. The procedure can be performed as either a hemiarthroplasty or total hip arthroplasty.

Significance of the study
The incidence of hip joint replacement at Trauma Department of Assiut University Hospitals approximately (160) cases during period between January 2022 to December 2022 **(Assiut Univrsity Hospital records, 2022)**. From the experience of researcher as head nurse or nurse residence for 2 years, it has been observed that patients with hip joint replacement are confronted with many issues following surgery related to inadequate knowledge and practice about rehabilitation which is necessary to enhance quality of life. Furthermore; postoperative complications lead to longer hospital stays, higher expenses, and a higher death rate. **(Meng et al., 2022)**. So, this study emphasized on evaluating the impact of implementing rehabilitation program for patients undergoing hip arthroplasty to improve quality of life and reduce postoperative complications.

Aim of the study:
- Assess patient's level of knowledge, practice, quality of life and complication regarding hip joint replacement.
- Design and implement rehabilitation program for improving patient's quality of life regarding hip arthroplasty.
- Evaluate the impact of the rehabilitation program on quality of life for patients undergoing hip arthroplasty.

Hypothesis:
To achieve the study's objective, the following hypotheses were formulated:
- Patients in the intervention group will have higher post-mean knowledge and practice scores than patients in the control group.
- Patients who will receive rehabilitation program will report greater improvement in quality of life than those who will not receive the rehabilitation program.
- Study group patients will report fewer complications than control group patients.

Patients and methods:
Research design:
The current study utilized a quasi-experimental research design.

Setting:
The study was carried out at trauma unit at Assiut University Hospital.

Sample:
Sample of (60) adult patients undergoing hip joint replacement were covered in this research. Participants were aged between 20 and 65 years, and comprised (male and female) patients who attended to the trauma unit. The patients were assigned at random to two groups (thirty for each group).

Sample size:
A power analysis was used to determine the sample size, considering the total number of patients (n=160) admitted during 2022 year at trauma unit of Assiut University Hospitals. According to the power analysis, this study should

involve 60 patients. Study power (test power) is 80% with beta error (β) = 20%, and alpha error (α) = 5% with power 95%.

Tools:
Three tools utilized for data collection

Tool (I): **Patient assessment sheet:**
Based on the literature review, the researcher created this tool to evaluate the patient's condition. It will consist of four parts:
Part (1): Demographic data: age, sex, level of education, marital status, occupation and residence.
Part (2): Medical data: including (Medical diagnosis, type of hip joint replacement comorbidities, affected side, mechanism of injury and length of hospital stay).
Part (3): pre/ post knowledge assessment: This part assessed patient's knowledge regarding definition of HJR, function of the joint, indication, complications, precautions after HJR, medication, diet, preoperative preparations, time of weight bearing, prevention of deep venous thrombosis, importance of exercise and regular follow up..… etc).
Scoring system: A (21) item knowledge assessment tool was administered to patients undergoing hip joint replacement prior implementation of a rehabilitation program to establish baseline knowledge levels. The same instrument was re-administered at 1, 3, and 6 months postoperatively to evaluate knowledge gains. 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.
Part (4): pre/ post practice assessment: This part concerned with practice regarding walking, sitting, climb up and down stairs with assistive devices, perform deep breathing exercise, sleep position and types of the rehabilitation exercises.

Scoring system:
A (7) item knowledge assessment tool was administered to patients undergoing hip joint replacement prior implementation of a rehabilitation program to establish baseline practice levels. The same instrument was re-administered at 1, 3, and 6 months postoperatively to evaluate practice gains. All item was scored in to (2) marks for completely correct, (1) mark for incomplete correct and (0) for incorrect. The total score was (14). A score of ≥75% was considered adequate practice, while a score of <75% was inadequate practice.

Tool (II) 36 items on the Rand Short Form (SF): (Ware and Sherbourne, 1992):
This instrument is frequently used to assess health related quality of life. This tool was administered to patients with arabic version undergoing hip joint replacement preoperatively and (1, 3, and 6months) postoperatively **(Al Abdulmohsin, et al. 1997)**. This scale categorized into eight domains (Physical functioning, social functioning, role limitations due to physical health problems, role limitations due to emotional problems, vitality, emotional wellbeing, pain, and general health perceptions.
Scoring system; every question has a score between 0 and 100; higher scores indicative to a higher quality of life, while lower scores indicative to a lower quality of life.

Tool III: Patient complication evaluation:
Constructed by the researcher following review of literature to assess post-operative complication (during period of hospitalization and follow up after two weeks, and 3 months post discharge) .These complications include DVT, infection of the prosthesis, implant fracture, dislocation of the hip, mechanical loosening and failure of prosthesis.
Scoring system: as regard complications every item was assessed, classified, and scored in to present or absent for all postoperative complications.
Rehabilitation program (teaching booklet): This program designed through a systematic review of relevant national and international research. **(Colibazzi et al., 2020)and (Meng et al., 2022) and (Wang et al., 2023)** it was written in Arabic with a simplified style and visual aids to convey information on knowledge and practice and was divided into two sections:-
Part 1: it focused on knowledge pertaining to hip joint replacement as definition, function of hip joint, indication, complications, precautions after THR, medication, diet, preoperative preparations, time of weight bearing, prevention of deep venous thrombosis, measures to improve emotional status such as (early ambulation, waking, eat healthy diet, relaxation technique, enough sleep, join a support group and not staying alone, importance of exercise and regular follow up.
- **Part 2:** it focused on practice for patients to enhance their quality of life, with a particular emphasis on post-operative exercise, wound care and use of assistive devices when sit, walk, go up and downstairs without pain, sleep position, perform deep breathing exercise and measures for prevention of complication post HJR.

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Ethical consideration:
Ethical permission for the study was obtained from the Faculty of Nursing's ethical committee. In order to gather the required data and obtain the cooperation of nursing supervisors and surgeons, the Dean of the College of Nursing sent a formal letter to the Head of the Orthopedic Department describing the purpose and details of the study. After describing the nature and purpose of study to patients or their families who desired to participate, oral consent was obtained. Privacy and confidentiality measures were implemented. Patients had the right to decline participation or to leave at any moment, for any reason.

Procedure:
The study was conducted in 3 phases:

Preparatory phase:
At this stage, the researchers conducted comprehensive systematic review of research articles, nursing and medical textbooks and online resources before preparing the data collection tools.

Validity and reliability of tools:
All tools validity was assessed and enhanced by five academic experts comprising two orthopedic experts and three surgical and medical nursing specialists from Assiut University. The tools were evaluated for relevance, accuracy, understanding, understandability, and significance. Following minor revisions and corrections, the reliability of the instruments were verified for consistency by cronbach`s alph coefficient (alpha=0.829).

Pilot study:
A pilot study involving 10% of the target population (6 patients) was undertaken to assess feasibility, practicability, clarity, and relevancy of the research instruments. Primary objectives of the pilot study were to identify potential challenges in collecting data and to estimate the time required for instrument completion. Following necessary modifications based on pilot study findings, these participants were excluded from the primary analysis.

Implementation phase:
- An official approval to proceed with planned research was acquired from from The director of hospital nursing and the head of the orthopedic surgery department at Assiut University Hospital
- Collecting data was initiated by the researchers as soon as they received approval to proceed with planned research
- Participants were randomly assigned to study group and control group. Program of rehabilitation booklet was given to intervention group, and standard hospital care was given to routine group.
- Data collection was conducted over a seven-month period from March to September 2023 through face-to-face interviews during both morning and afternoon shifts.
- The rehabilitation program implemented for study group in fourth sessions (all sessions were implemented preoperatively).

First session:
- Data collection started within the first 24 hours of admission in trauma unit at Assiut University Hospital.
- Prior to data collection, the participants in the research were visited to establish a means of communication and to provide a detailed explanation of the scope and goal of the study
- Each participant was interviewed individually to complete the tool (1) (pretest) to evaluate medical and demographic data and assess his/her knowledge about hip joint replacement (definition of HJR, function, indication, complications, precautions after THR, medication, diet, preoperative preparations, time of weight bearing, prevention deep venous thrombosis, measures to improve emotional status, importance of exercise and regular follow up). Also assess his/her practice about hip joint replacement (follow up exercise, wound care and use of assistive devices when sit, walk, go up and downstairs without pain, sleep position, perform deep breathing exercise to decrease depression or anxiety and prevention of complication post HJR) using (tool I) . Then the researchers use second tool (pretest) to assess quality of life and third tool to assess post-operative complication during hospitalization. These findings served as the foundation to develop the research intervention. The session lasted approximately 30-40 minutes.

Second session:
- During this session the researchers implement part (1) of rehabilitation program. This include knowledge about definition of HJR, function, indication, complications, precautions after THR, medication, diet and preoperative preparations, time of weight bearing, measures to improve emotional status such as(early ambulation, waking, eat healthy diet, relaxation technique, enough sleep, join a support group and not staying alone), importance of exercise and regular follow up.
- Visual aids such as pictures were included into the sessions to enhance patient knowledge and retention of the information.
- Following the core content, approximately 10-20 minutes were allocated for clarification, feedback, and reinforcement based on individual patient needs.

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- Every patient received a printed copy of instruction for future reference.
- The session lasted approximately 30-40 minute.

Third session:
- In this particular session, the researchers implement part (2) of rehabilitation program. This part emphasize on practice about use of assistive devices when sit, walk, go up and downstairs without pain, perform deep breathing exercise to decrease depression or anxiety and prevention of complication post HJR.
- The session lasted approximately 20-30 minute.

Fourth session:
- During this session the researchers implement also part (2) of rehabilitation program. This part emphasize on practice about follow up exercise and wound care and sleep position.
- The session lasted approximately 20-30 minute.

Evaluation phase:
- All patients were passed with evaluation phase using tools I, II, and III.
- The patient`s knowledge, practice and quality of life for patients undergoing hip arthroplasty were assessed using (Tool I part 3, 4and Tool II) posttest follow up after one, three and six months by planned visits in the trauma outpatient clinic or by telephone call (posttest).
- Patient complication evaluation (Tool III) was filled after two weeks, and 3 months post discharge to assess post-operative complication.

The Statistical analysis:
The gathered information were analyzed and then converted into a format created to be input into IBM-compatible computer. All entered data were checked for errors using (SPSS) version 20. Numbers, percentages, means, and standard deviations are examples of descriptive statistics. The Chi-square test and independent t-test were used to gather, tabulate, and statistically analyze the data.

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**

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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	
Hospital stay Mean ±SD	16.86±6.06		15.06±5.18		.496 ns

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

Table (3): Comparison of the total patient knowledge score levels at four program phases (Preoperative, 1 month, 3 months and 6 months postoperative) between the study and control group (n=60)

Patients knowledge score levels	study		control		X2/T	P. value
	No	%	No	%		
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**
1month 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**
6 months postoperative						
Unsatisfactory	10	33.33	22	73.33	9.64	0.002**
Satisfactory	20	66.67	8	26.67		
Mean±SD	**27.27±5.16**		**14±12.8**		**5.26**	**<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***

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

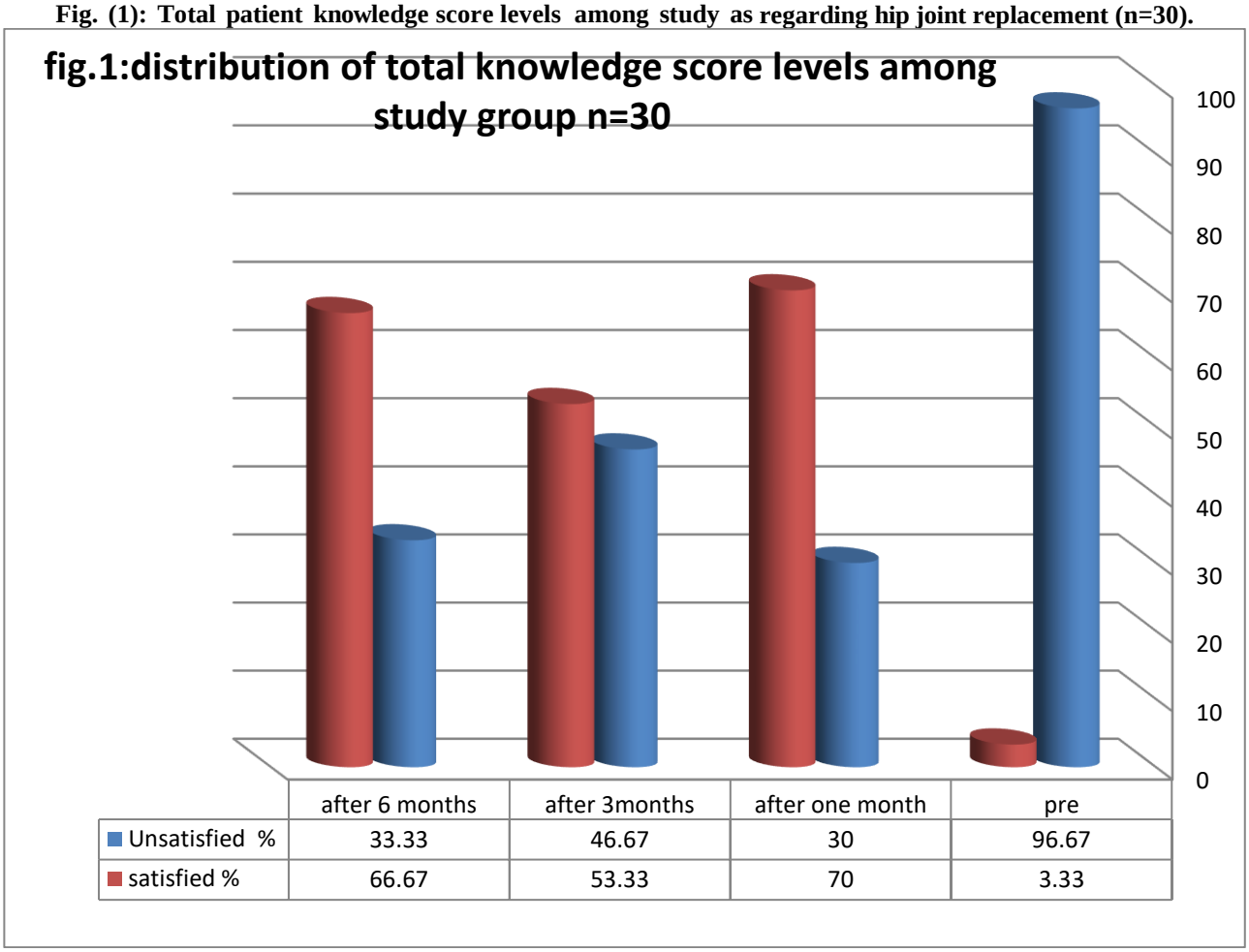

Table (4):- Comparison between study and control group regarding total patient practice score levels during four program phases (Preoperative, 1 month, 3 months and 6 months postoperative) (n=60)

Patients practice score levels	Study		Control		X2	P.value
	No	%	No	%		
Preoperative						
Inadequate	30	100.0	30	100.0	-	-
Adequate	0	0.0	0	0.0		
Mean±SD	**2.83±1.53**		**3.07±2.46**		0.44	**0.661^{ns}**
1 month Postoperative						
Inadequate	5	16.7	23	76.7	21.70	<0.001**
Adequate	25	83.3	7	23.3		
Mean±SD	**12.97±1.85**		**8.43±1.99**		9.13	**<0.001****
3months Postoperative						
Inadequate	7	23.3	16	53.3	5.71	0.017*
Adequate	23	76.7	14	46.7		
Mean±SD	**12.3±2.58**		**9.4±2.91**		3.49	**0.001****
6months Postoperative						
Inadequate	8	26.7	20	66.7	9.64	0.002**
Adequate	22	73.3	10	33.3		
Mean±SD	**12.53±1.98**		**8.6±4.46**		4.94	**<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
NS: non statistically significant difference P.value > 0.05

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Fig. (2): Total patient practice score levels among study as regarding hip joint replacement (n=30).

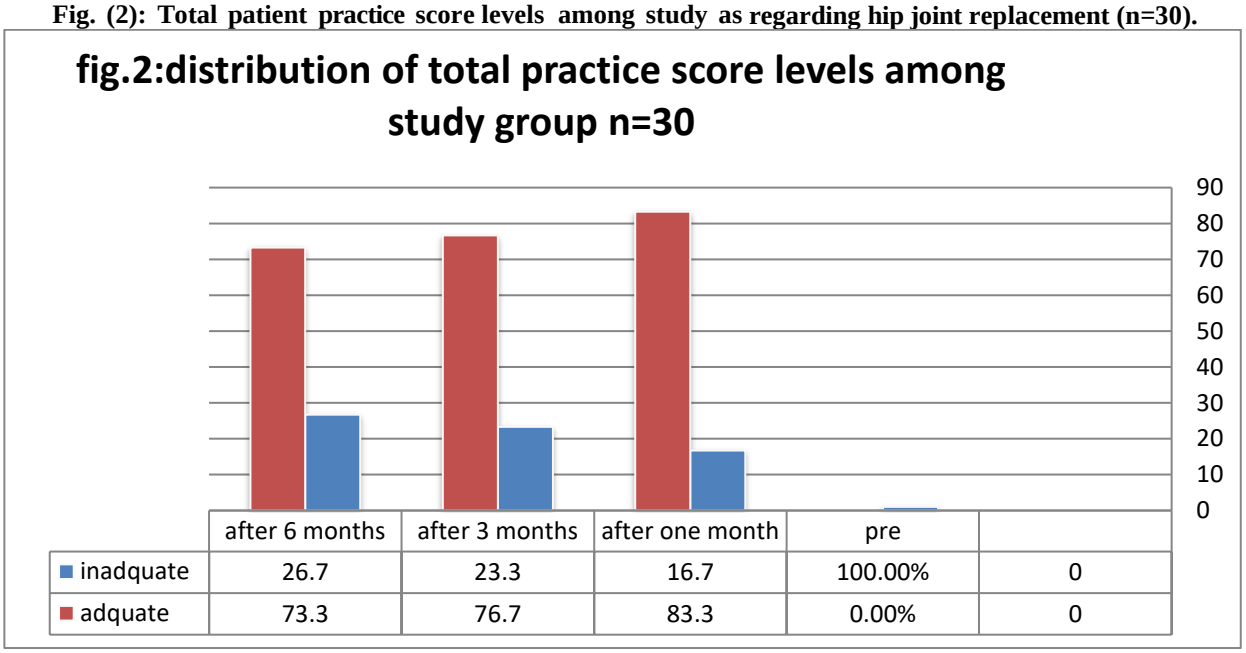

Table (5): Comparison between study and control group regarding mean score of total quality of life during four program phases (Preoperative, 1 month, 3 months and 6 months postoperative) (n=60)

Total quality of life	Study	Control	T	P.value
	Mean±SD			
Preoperative	32.83±12.44	32.4±11.29	0.192	**0.888**
1 month Postoperative	66.23±8.39	44.2±12.21	2.617	**<0.001****
3months Postoperative	73.77±11.21	47.4±11.95	2.871	**<0.001****
6months Postoperative	82.1±13.25	48.5±11.77	3.113	**<0.001****

Independent T-test quantitative data between the two groups
****Significant level at P value < 0.05, **Significant level at P value < 0.05***

Figure (3): Comparison between study and control groups regarding complication after hip joint replacement during hospitalization, 2 week and 3 months postoperatively (n=60).

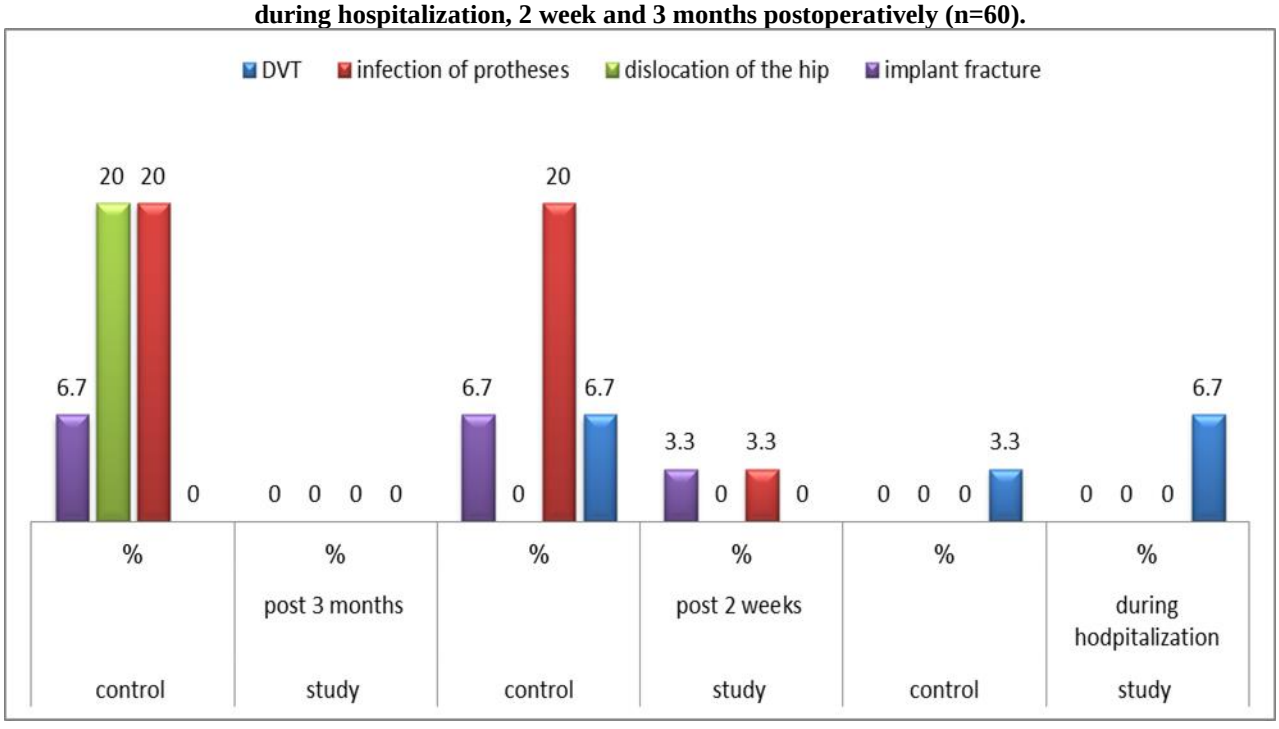

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Table (6):- Correlation between total patients' knowledge, practice and quality of life in the study group preoperative, 1 month, 3 months and 6 months after implementation rehabilitation program.

Correlation		knowledge	practice	Quality of life
Preoperative				
Knowledge	Pearson Correlation		.494**	-.501-**
	Sig. (2-tailed)		.000	.001
Practice	Pearson Correlation	.494**		-.181
	Sig. (2-tailed)	.000		.004
1 month Postoperative				
Knowledge	Pearson Correlation		.539**	.784**
	Sig. (2-tailed)		.000	.000
Practice	Pearson Correlation	.539**		.596**
	Sig. (2-tailed)	.000		.000
3 month Postoperative				
Knowledge	Pearson Correlation		.702**	.770**
	Sig. (2-tailed)		.000	.025
Practice	Pearson Correlation	.702**		.380*
	Sig. (2-tailed)	.000		.191
6 month Postoperative				
Knowledge	Pearson Correlation		.536**	.829**
	Sig. (2-tailed)		.000	.000
Practice	Pearson Correlation	.536**		.567**
	Sig. (2-tailed)	.000		.007

****Statistically Significant Correlation at P. value <0.05***
*****Statistically Significant Correlation at P. value <0.01***

Table (1): This table showes that; the highest percentage in both groups, their ages from 50 to 65 years old (83.3% and 73.3% respectively). As regard to gender, the majority of patients were males in both groups (80.0% and 63.3% respectively), and the highest percentage of patients in both groups were married (83.3% and 73.3% respectively). More than one third in study group and more than two thirds in control group have secondary education (36.7% and 63.3 %). The majority of patients (66.7% and 60.0% respectively), were working. Finally, the highest percentages of patients (80.0% and 66.7% respectively) were come from rural area.

Table (2): This table reveales that; the majority in both groups had femoral neck fracture (66.7% and 56.7% respectively). More than half of patients (63.3 and 56.7 %) of both group performed total hip replacement. 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. Also this table shows that majority in both groups suffered hip fractures as a result of falls on the ground (86.7% and 80.0% respectively).finally, non-statistical significant differences in two groups concerning to their length of hospital stay.

Table (3): This table reportes that; pre application of rehabilitation program, the highest percentage of patients in two groups had unsatisfactory knowledge level (96.67% and 83.3%respectively).While after application of rehabilitation program, the majority of patients in each group were in satisfactory knowledge level (70% and 40%respectively). A high statistically significant difference regarding total knowledge score was found between two groups (1, 3 and 6 months post- operatively) with p. value =0.001**.

Figure (1): A high percentage of study group were have satisfactory knowledge score level after implementation of rehabilitation program including all phases of follow up1 month, 3 months and 6 months postoperatively (70, 53.33 and 66.67% respectively).

Table (4): This table showes that; pre implementing of rehabilitation program, the high percentage of patients in both group had inadequate practice score level (100%).While after implementing of rehabilitation program, the majority of patients in both group were in adequate practice score level (83.3and 23.3%respectively).A high statistically significant difference regarding total practice score was found between two groups (1, 3 and 6 months post- operatively) with p. value =0.001*.

Figure (2): A high percentage of study group were have adequate practice score level after implementation of rehabilitation program including all phases of follow up1 month, 3 months and 6 months postoperatively (83.3, 76.7 an 73.3% respectively).

Table (5): This table reveales that; a statistically significance difference for mean score of total quality of life among patients in two groups postoperatively and follow up with p. value = 0.001** , but non statistically significant difference found preoperatively with p. value (0.888).

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Figure (3): This figure reveales that; a statistical significant difference in both groups regarding complication (DVT, infection of the prosthesis, dislocation of hip and implant fracture) during hospitalization, 2 week and 3 months postoperatively.
Table (6): This table showes that; a Positive correlation between knowledge, practice and quality of life about hip arthroplasty among patients of study group during four program phases with p value=0.001** .

Discussion:
Hip joint replacement is a surgical intervention used to treat degenerative disorders. Total hip replacements are increasing as the aging population grows. The goal of postsurgical rehabilitation is to improve the function of the affected joint and to help for returning to daily activities. THR surgery requires an adequate rehabilitation protocol is focused on functional recovery, improving patient education and practice, prevent complication and enhancing quality of life **(Grozdeva et al., 2023)**.

The discussion will cover the main result findings in the following sections:
Demographic characteristics and medical data:
This study result clarified that more than two thirds of the patients in two groups were age ranged from fifty to sixty years. This result od study was congruent with **(Ragab et al., 2022)** who clarified that two thirds among patients in both groups were age ranged from 50 to 60 years in both study and control group . This finding disagreed with **(Bakr ,2018)** who found that the majority of patients in both groups were their age were over forty years.
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 due to in today's society, males are more likely to experience occupational trauma when they are expected to provide for and support their families financially, which puts them at risk for trauma and falls. Similar to this study, the findings of **(Bakr, 2018)** documented that the majority of patients in both group were males. Our study contradicts **(Wong et al., 2024)** who reported that, all of the studied patients were females.
The current study showed that more than two thirds in study group and more than half in control group had femoral neck fracture. This result contradicted with **(Randelli et al., 2023)** who showed that equal rates of trochanteric and femoral neck fractures among two group.
As regard to type of hip joint replacement, the present study showed that more than half in study group and more than two thirds in control group performed total hip replacement for reducing sever hip pain. This finding was matched with **Mohammed et al., (2023)** confirmed that more than half of both group performed hip replacement. In the other side **(Amarilla-Donoso et al., 2020)** documented that the highest percentage of patients in old age group were treated with partial hip joint replacement. **From opinion of researchers,** the elderly have a femoral head that contains extremely fragile bone, making internal fixation difficult to perform. Also, intatrochentric and femoral neck fractures cause disruptions in the blood supply. For this reasons most intatrochentric and femoral neck fractures were managed by 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 **(Bakr, 2018)** 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 group spend two week in hospital. **From opinion of researchers,** the studied participants stayed long time in hospital due to artificial prosthesis were so expensive and required them to apply for state expenditure approval, which took a long time to get approved and performing investigation. This study was corresponded with **(Lai et al., 2022)** who reported that the mean time for hospital stay was more than two week. also, this finding was disagreed with**(Mohammed et al., 2023)** who revealed that more than half of both group performed hip replacement, both group stayed from three days to a week in hospital.

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 rehabilitation program. **From opinion of researchers, the** patients have inadequate knowledge due to lack of training programs and continuing education and counseling routinely with medical and not providing patients with written information about surgery. However, after implementing of rehabilitation program, it was showed that significant statistical difference relation of total knowledge among patients in both group post rehabilitation program implementation and follow up. This improvement may be attributed to the rehabilitation program implemented, which included a teaching intervention using various teaching booklet.

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This result agreed with the study of **(Bakr, 2018)** demonstrated that a statistically significant difference was found concerning patient knowledge levels of the two groups during three program phases following the implementation of the education program. These findings is not consisted with (**Billon et al., 2017)** documented that most participants in this study had insufficient instruction after hip arthroplasty.

patient`s practice assessment:
Regarding to level of patient practice, this finding reflected that, the most of patients in both group had inadequate practice level before implementing rehabilitation program, while after implementing of rehabilitation program, the majority of patients had adequate practice level in the study group. **From the opinion of the researcher,** this may be due to initiate of the rehabilitation program preoperatively, the patient was able to transition into post-operative care, demonstrating high adherence to the prescribed program. This result was consistent with **(Bakr, 2018)** who illustrated highly statistically significant difference between two group as regards patient total practice post and follow up after the implementation of instructional program. Meanwhile, this finding was agreed with **(Sato et al., 2023)** which revealed that following THA, both physical ability and performance enhanced.

Quality of life of studied patients as measured by SF-36 questionnaire:
The results of the study indicated that total of quality of life in patients of study group was better than control group postoperatively and follow up. **From the opinion of the researcher,** the control group has postoperative complication may have an impact negatively on activities of daily living. This result agreed with the study of **(Bakr, 2018)** showed that statistically significant relation between two groups for total quality of life post and follow up after implementation of instructional program. Also, this result was matched with **(Hunter et al., 2020*)*** documented that, a significant evaluation for quality of life was better after educational program. Meanwhile, the current finding was contradicted with **(Clement et al., 2024)** reported that no change in QoL following arthroplasty.

Patient complication evaluation of studied patients:
As regard to complication; the result of this study showed statistically significant difference between two group concerning infection of prosthesis and hip dislocation. **From the opinion of the researcher,** due to providing study group with rehabilitation program that educate patients about wound care, precautions to prevent hip dislocation and measures to prevent complication after hip joint replacement unlike control group that stay long time periods in hospital that lead to infection prosthesis and insufficient knowledge about complication, and lack of careful postoperative follow-up. Study results of **(Pincus et al, 2021)** confirmed the current study finding which mentioned that, multiple complications can occur after hip arthroplasty. On contrast **(Partridge et al, 2018)** who reported that, postoperative hip arthroplasty complications were reduced after educational program (no infection of prosthesis, hip dislocation and intraoperative fracture).
The present result found a positive correlation between total knowledge, practice, and quality of life in both groups during four program phases following rehabilitation program implementation. **From the opinion of the researcher,** this result indicates that high level of knowledge lead to good practice and performance, and high quality of life. This result was agreed with **(Bakr, 2018)** who demonstrated that positive correlation in both groups concerning to knowledge, practice and quality of life post application of educational program after hip arthroplasty. This result was matched with **(LU, Yen-Mou, et al., 2023)** who found that, enhanced knowledge correlates with a higher quality of life and faster recovery rates. Also, who noticed that, a strong correlation between high performance and quality of life.

Conclusion:
Based on the present study, it could be concluded that study group who implemented rehabilitation program following HJR exhibited enhanced knowledge, practice, and quality of life.

Recommendations:
Based on the present study results, it is recommended that:

For patients
- Discharge planning and teaching booklet should be available in trauma unit and distributed for all patients with hip joint replacement surgery.
- Ongoing educational programs aimed at enhancing patients' understanding of hip replacement surgery.
- Encourage patients to participate in educational sessions with other patients about hip replacement surgery.
- Establishment of a website containing information on all aspects of hip joint replacement surgery including media, audiovisual aids, and various educational materials.

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For nurses

- On a regular basis evaluating nurses' expertise regarding hip replacement surgery.
- Regular training sessions in-service are necessary to improve and refresh the knowledge and skills of nurses.

For research

- To generalize the findings, the study must be repeated with a larger probability sample and in various contexts.

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