Factors Affecting the Quality of Life of Patients after Total Hip Replacement

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ABSTRACT
Background: Although total hip replacement (THR) is mostly successful and results in positive clinical outcomes, individuals may find the treatment to be physically and psychologically taxing. Modern hospital procedures such as same-day admissions and shorter hospital stays do not provide patients much opportunity to become accustomed to their circumstances. Many people may not fully recover, and they continue to have pain and functioning issues.
Objective: To assess factors affecting quality of life for patients after total hip replacement.
Subjects and methods: Design: A descriptive exploratory design was used.
Setting: Out-patients' orthopedic clinics at Kasr Al-Ainy Hospital, which affiliated to Cairo University.
Subject: A purposive sample composed of (138) adult patients from both sexes after hip replacement have been recruited in this study. **Tools:** Data were collected through using three tools, **I)** Patient's interviewing questionnaire, **II)** Short –Form- 36 (SF-36) and **III)** Factors affecting quality of life questionnaire.
Results: More than half of the studied patients had unsatisfactory level of knowledge about total hip replacement, more than two third of them had poor quality of life and more than one quadrant of them had average quality of life.
Conclusion: There was a significant statically relationship between total level of quality of life of the studied patients and their gender, residence, and employment. While there was no significant statically relationship between total level of quality of life of the studied patients and their age, marital status, and educational level. Continuous educational programs are recommended to enhance the patient's knowledge and practices regarding factors affecting quality of life for patients after total hip replacement.
Keywords: Quality of life, Total hip replacement (THR).

INTRODUCTION

The surgical procedure known as a total hip arthroplasty involves replacing the hip joint with a prosthesis in order to restore movement in patients who have primary and secondary articular degenerations of the hip. The surgical goal is to enhance functional status, lessen morbidity linked to immobility, improve quality of life, restore level of physical activity, and relieve pain because diseases restrict the patient's mobility in the social system, thus having a positive clinical outcome as a result of the surgery [1].

The patients' postoperative coping skills appear to benefit from preoperative education. In particular, how patients interpret and respond to their pain has a significant impact on pain disability. Anxiety is reduced and patients are given the tools they need to take an active role in their recovery when they are given well-organized information regarding the surgery and the entire care pathway. Additionally, controlling patients' expectations before surgery is thought to be crucial for improved physical function after surgery and satisfaction with the results of the procedure [2].

Following surgery, quality of life is comparable to that of a healthy reference population. There are noticeable improvements in pain, energy, sleep, social, and sexual function. Walking efficiency increases and oxygen demands during activity decrease. Within three months of surgery, the majority of these changes are seen. Many patients are able to maintain their independence and participate more actively in society thanks to these improvements in quality of life [3].

The primary conditions that affect the patients who receive total hip arthroplasty and their quality of life must be known by the nurse. In this regard, it is crucial to provide methods for regaining mobility and functional independence. Planning nursing care calls for integrating the patient into the healing/rehabilitation process. Guidelines for the patient's/education family's on movement, decubitus, wound healing, and pain management. According to research, following the recommendations before surgery will result in greater levels of recovery and early discharge [4].

Significance of the study:

One of the most popular and effective orthopedic procedures known as the "surgery of the century" is total hip replacement (THR) [5]. Every year, more than a million THA procedures are carried out globally. This number is anticipated to double throughout the following ten years as the population matures [6]. Kasr Al Ainy Hospital documented that the admitted patients for THR were about 1000 patients during year 2020 [7].

Quality of life (QOL) has become a basic health professionals concern to ensure that after successful THR surgery, patients will have significant improved quality of life in terms of physical, psychosocial and spiritual health [8].

AIM OF THE STUDY

The present study aimed to assess physical, psychosocial and spiritual needs of patients undergoing total hip replacement through: (1) Assessing quality of life and; (2) assessing factors affecting this quality of life after total hip replacement.

SUBJECTS AND METHODS

I- Technical item:

The technical item included research design, setting, subjects, and tools of data collection.

Research design:

A descriptive exploratory research design was utilized to achieve the aim of this study.

Setting: This study was conducted at out-patients' orthopedic clinics at Kasr Al-Ainy Hospital, which affiliated to Cairo University.

Sampling:

A purposive sample (138) adult patients from both sexes after total hip replacement at Kasr Al-Ainy Hospital has been recruited in this study.

Exclusion criteria:

Critically and mentally ill patients

Tools for data collection:

Data were collected using the following tools:

- **1st tool: Patient's interview questionnaire:**
- This tool was developed by the investigator in Arabic language after reviewing of relevant related literatures [5, 9] and it included three parts:
- **Part (I): Socio-demographic characteristics of the patient**: It included patient's age, gender, level of education, occupation, marital status, residence and primary care provider at home.
- **Part (II): Clinical data of patients:** It included patient's present, and past medical surgical health history.
- **Part (III): Knowledge assessment questionnaire:** It aimed to assess patients' knowledge about total hip replacement. It consisted of 14 open-ended questions related to definition, signs and symptoms, causes, investigations, complications, treatment and follow up…. etc.

Scoring System: Knowledge obtained from the studied patients was checked with model key answer and graded as following: -

- **Zero** was given for incorrect answer.
- **One** was given for correct answer.

The total scores of knowledge were summed up and converted into a percentage score. It ranged from 0–14 degree which equal 100% and categorized as following:

- **Satisfactory** knowledge if total score ≥ 80%.
- **Unsatisfactory** knowledge if total score from < 80%.

2nd tool: Short –Form- 36 (SF-36):

This validated tool was adopted from **Aprato et al.** [10], it was concerned with assessment of quality of life for patients after THR. It consisted of 36 questions categorized into seven subscales:

- Physical functioning (10 items)
- Physical health (4 items)
- Emotional problems (3 items)
- Social functioning (2 items)
- Pain (2 items)
- Energy / Emotional wellbeing (9 items)
- General health (6 items)

Scoring System:

Every question of SF-36 was scored on a scale of 0–100 where the higher score (100) representing the highest level of quality of life. The scores of items were summed up and the total was divided by the number of items to obtain mean score. Theses scores were expressed in means and standard deviation.

Also, the total scores were summed up and converted into a percentage score categorized as following:

- **Poor QOL if** total score ≤ 60%.
- **Average QOL if** total score from 60% - <80%.
- **Good QOL if** total score ≥80%.

3rd tool: Factors affecting quality of life questionnaire:

This tool was developed by the investigator and translated into Arabic language after reviewing of relevant related literatures. It was concerned with factors affecting quality of life. It assessed the following factors; environmental and housing, economic, occupational and social factors.

II -Operational item:

It included preparatory phase, content validity and reliability, pilot study and field work.

A- The preparatory phase:

It included reviewing the recent related literature and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals, magazines in order to develop and modify the data collection tools.

B-Tool's Validity and Reliability:

- Validity:

The face and content validity was judged through a panel of five experts from Medical Surgical Nursing Department, Faculty of Nursing, Helwan University (one professor and two assistant professors and two lecturers). Their opinions were regarding comprehensiveness, accuracy, clarity, relevance and appropriateness of the study tools. Minor modifications were done based on expert's judgment and the final form was developed.

- Reliability:

Testing reliability of the proposed tools was done statistically by Cronbach's alpha test. The coefficient alpha for knowledge questionnaire was 0.86.

C-Pilot study:
A pilot study was carried out on 10% of the sample to test clarity, applicability of the data collection tools. The participants who included in the pilot study were excluded from the study sample because some modification was done after conducting the pilot study.

D-Field work
Data collection started and completed within six months from the beginning of January (2022) until the end of June (2022). Data collection was done at the previous mentioned setting two days per week (Saturday and Monday) by the researcher in the morning shift between 10.00 AM to 1.00 PM. Each patient took about 40 minutes for interviewing and completing the questionnaires data as the following; an interviewing questionnaire took about 15 minutes, SF-36 took about 15 minutes and 3rd tool took about 10 minutes.

Ethical Considerations:
Approval to conduct the study was obtained from the Ethical Committee in the Faculty of Nursing, Helwan University before starting the study. The investigator explained and clarified the study aim and conducting way to the participants before taking their written informed consent. The investigator assured maintaining anonymity and confidentiality of data of subjects included in the study. The participants were informed about their right to withdraw from the study at any time without giving any reason. The study was conducted according to the Declaration of Helsinki.
III-Administrative item:
Approval to carry out this study was obtained from the faculty of nursing, Helwan University to the medical and nursing directors of the previous mentioned out-patients' orthopedic clinics at Kasr Al-Ainy hospital, which affiliated to Cairo University.

IV- Statistical item:
The statistical package for the social sciences (SPSS) version 20 and Microsoft Excel version 2010 were used to arrange, categorise, tabulate, and statistically analyse the acquired data. While qualitative data were portrayed as frequency and percentage, quantitative data were shown as mean and standard deviation (SD). To examine the significance of relationships between quantitative variables, the chi-square test (X^2) was employed. P value less than 0.05 was regarded as significant.

RESULTS
Table (1) shows that, 56.6% of the studied patients were in age group >60 -<65years with mean age 65.20± 11.7 years and 64.5% of patients were females. Also, 70.2% of them were from urban residence and 80.5% of them were married. Additionally, 52.7% of them had secondary educational level and 52.9% of them were housewives.

Table (1): Frequency and percentage distribution of socio-demographic characteristics of the studied patients (n=138)

Items	N	%
Age >60 -<65	78	**56.6**
65-<70	42	30.4
70-75	15	10.8
≥75	3	2.2
Mean ± SD	65.20± 11.7	
Gender Male	49	35.5
Female	89	**64.5**
Residence Rural	41	29.7
Urban	97	**70.2**
Marital status Single	8	5.7
Married	111	**80.5**
Divorced	3	2.2
Widow	16	11.6
Educational level: Illiterate	6	4.3
Read/write	19	13.8
Elementary	25	18.3
Secondary	73	**52.7**
University	15	10.9
Employment Working	54	39.2
Retired	11	7.9
housewife	73	**52.9**
Primary care provider at home		
Sons and/or daughters	102	**74.0**
Husband/ wife	28	20.3
Relatives	8	**5.7**

Table (2) shows that, 72.5% of the studied patients had private house and 60.2% of them were living at upstairs living. Also, 73.9% of them had elevated toilet seat at their homes and 53.6% of them are living at good ventilated homes. Also, 77.5% of them reported insufficient ratio of rooms to number of family members. Additionally, 91.4% of them reported that there was someone to assist them at home.

Table (2): Frequency and percentage distribution of the studied patients according to environmental and housing factors affecting quality of life after total hip replacement (n=138)

Environmental and housing factor	Items	N	%
Housing status	Private	100	**72.5**
	Common	38	27.5
Upstairs living	Yes	83	**60.2**
	No	55	39.8
An elevated toilet seat	Yes	102	**73.9**
	No	36	26.1
Good ventilation	Yes	74	**53.6**
	No	64	46.4
Ratio of rooms to number of family members	Sufficient	31	22.5
	Insufficient	107	**77.5**
Someone to assist you at home	Yes	126	**91.4**
	No	12	8.6
Effect of environmental and housing factor on quality of life	Affect	98	**71.1**
	Some effect	18	13.0
	Not affect	22	15.9

Table (3) shows that, there was statically significant relation between total level of knowledge of the studied patients and their residence and educational level.

Table (3): Relation between socio-demographic characteristics of the studied patients and their total level of knowledge (n=138)

Items		Total level of knowledge				P-Value
		Satisfactory		Unsatisfactory		
		N	%	N	%	
Age (in years)	21-40	8	5.8	10	7.2	0.262
	41-60	15	10.9	27	19.6	
	61-80	40	29.0	38	27.5	
Gender	Male	22	15.9	27	19.6	0.088
	Female	41	29.7	48	34.8	
Residence	Rural	13	9.4	28	20.3	0.033*
	Urban	50	36.2	47	34.1	
Marital status	Single	6	4.3	2	1.4	0.137
	Married	49	35.5	62	44.9	
	Divorced	0	0.0	3	2.2	
	Widow	8	5.8	8	5.8	
Educational level	Illiterate	4	2.9	2	1.4	0.017*
	Read/write	12	8.7	7	5.1	
	Elementary	7	5.1	18	13.0	
	Secondary	31	22.5	42	30.4	
	University	9	6.5	6	4.3	
Employment	Working	20	14.5	34	24.6	0.244
	Retired	5	3.6	6	4.3	
	housewife	38	27.5	35	25.4	

*: significant

Table (4) shows that, there was a statically significant relation between total level of quality of life of the studied patients and their gender, residence and employment.

Table (4): Relation between socio-demographic characteristics of the studied patients and their total level of quality of life (n=138)

Items		Quality of life						P-Value
		Poor		Average		Good		
		N	%	N	%	N	%	
Age (in years)	21-40	13	9.4	5	1.6	0	0.0	0.144
	41-60	29	21.0	11	8.0	2	1.4	
	61-80	44	31.9	21	15.2	13	9.4	
Gender	Male	34	24.6	11	8.0	4	2.9	0.036*
	Female	52	37.7	26	18.8	11	8.0	
Residence	Rural	21	15.2	11	8.0	9	6.5	0.021*
	Urban	65	47.1	26	18.8	6	4.3	
Marital status	Single	3	2.2	3	2.2	2	1.4	0.244
	Married	71	51.4	27	19.6	13	9.4	
	Divorced	3	2.2	0	0.0	0	0.0	
	Widow	9	6.5	7	5.1	0	0.0	
Educational level	Illiterate	4	2.9	1	0.7	1	0.7	0.155
	Read/write	13	9.4	2	1.4	4	2.9	
	Elementary	16	11.6	5	3.6	4	2.9	
	Secondary	47	34.1	21	15.2	5	3.6	
	University	6	4.3	8	5.8	1	0.7	
Employment	Working	30	21.7	19	13.8	5	3.6	0.025*
	Retired	6	4.3	1	0.7	4	2.9	
	housewife	50	36.2	17	12.3	6	4.3	

*: significant

Table (5) shows that, there was a significant statically relation between total level of quality of life of the studied patients and their total level of knowledge.

Table (5): Relation between quality of life of the studied patients and their total level of knowledge (n=138)

Items		Total level of knowledge				P-Value
		Satisfactory		Unsatisfactory		
		N	%	N	%	
Total level of Quality of life	Poor	33	23.9	53	38.4	0.052
	Average	23	16.7	14	10.1	
	Good	7	5.1	8	5.8	

DISCUSSION

In our study, we found that, 56.6% of the studied patients were in age group >60 -<65years with mean age 65.20± 11.7 years and 64.5% of patients were females. Also, 70.2% of them were from urban residence and 80.5% of them were married. Additionally, 52.7% of them had secondary educational level and 52.9% of them were housewives. This is in agreement with **Fahy et al.** [11] who found that the average age of THR patients was 65.6 ± 11.7 years.

In our study, we found that, 72.5% of the studied patients had private house and 60.2% of them were living at upstairs living. Also, 73.9% of them had elevated toilet seat at their homes and 53.6% of them are living at good ventilated homes. Also, 77.5% of them reported insufficient ratio of rooms to number of family members. Additionally, 91.4% of them reported that there was someone to assist them at home. In the same line this agreed with **Lindner et al.** [12] who found that majority of THR sample had partnership who assist them at home.

In our study, there was statically significant relation between total level of knowledge of the studied patients and their residence and educational level. This is in agreement with **Fahim et al.** [13] who

found that there was no statistically significant relation between age, gender, marital status and occupation and knowledge score in the study group.

In our study, we found that, there was a statically significant relation between total level of quality of life of the studied patients and their gender, residence and employment, which was contradicted with **Miao and Lin** [14] who found that there was a significant relation between presence of comorbidities and quality of life where the QOL was higher for participants without comorbidities. While, there was no significant relation between employment status and quality of life.

Our study found that, there was a statically significant relation between total level of quality of life of the studied patients and their total level of knowledge. This is supported by **Eamchunprathip et al.** [15] who documented that patient's knowledge had indirect effects on self-management through physical function recovery and quality of life.

CONCLUSIONS

The findings of this study indicated that more than half of the studied patients had an unsatisfactory level of knowledge about total hip replacement. And showed that more than two-thirds of the studied patients had poor quality of life and one quadrant of them had an average quality of life.

RECOMMENDATION
- Continuous educational programs to enhance the patient's knowledge and practices regarding factors affecting quality of life for them after total hip replacement.
- Establish in-service training patient education to educate patients' knowledge and skills about factors affecting quality of life for them after total hip replacement.

Recommended Further research:
- Further research studies to develop an ongoing comprehensive assessment of patients' knowledge and practices regarding factors affecting quality of life for them after total hip replacement.

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