

Early Unpleasant Postoperative Symptoms for Patients Undergoing Primary Hip versus Primary Knee Replacement: Patient Perception

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Abstract

Background: Total hip and total knee replacement are considered the treatment of choice for patients with osteoarthritis to relieve pain and enhance function. However, recent research suggests that a major proportion of patients continue to experience pain, distress, anxiety, fatigue, discomfort, sleep disturbance, nausea and vomiting following their joint replacement.

Aim of the current study was to describe and compare between patients' physical health problems following THR and TKR.

Method; a descriptive design was carried out in this study. The study was conducted in orthopaedic departments at Mansoura University Hospital. A purposive sample of participants was used over a period of 6 months who correspond to inclusion criteria. Tools used for data collection in this study consisted of three tools as the following; first tool; composed of two parts, socio-demographic characteristics and health-relevant data, and the postoperative recovery profile (PRP) questionnaire. The second tool is concerned with assessment of patient functional outcome using the new knee society knee scoring system for the knee joint, and harris hip scores for the hip joint. The third tool is hip and knee questionnaire.

Results: the majority of knee surgery patients (91.3%) experience severe pain while 57.5% of hip surgery patients experience severe pain. more knee surgery patients (4.3%) in contrast to 2.5% hip surgery patients experienced severe difficulties in concentration.

Conclusion; physical health problem was found to be significantly higher in TKR patients than in THR patients.

Keywords: Assessment physical health problems, total hip replacement, total knee replacement.

I. Introduction

Total hip replacement (THR) and total knee replacement (TKR) consider two of the most frequently performed major orthopaedic surgeries. Over the past decade, the prevalence of THR and TKR in most Organization for Economic Cooperation and Development countries had rapidly increased^[1]. THR and TKR surgeries are highly successful orthopaedic procedures for more than 773,000 Americans and 62,000 Canadians each year^[2]. It is projected that by 2030, the number of THR surgery will increase by 174 percent - to 572,000 and TKR surgery will jump by 673 percent - to 3.48 million per year in the United State^[3].

Total hip and total knee replacement are considered the treatment of choice for patients with osteoarthritis to reduce pain and enhance function^[4]. However, following THR and TKR patients experienced unexpected physical health problems, which they felt improperly prepared for dealing with as pain intensity and management, sleep disturbance, activity, the length of recovery and fatigue. Patients might continue to endure pain or have problems as swelling and stiffness after THR and TKR^[1, 5, 6].

Despite significant interest in enhancing postoperative symptoms management, the rate of symptom clusters is still high. Especially the first 3 days after surgery, these symptoms are more severe and make a huge sequence on patient health satisfaction. Literature reviews indicated that a wide variance in prevalence of symptoms postoperatively including pain, sleep disturbance, fatigue, nausea and vomiting, dizziness, drowsiness, headache and voiding difficulty^[7, 8]. More specifically, following THR and TKR surgery patients reported unexpected physical health problems as pain, anxiety, nausea and vomiting as well as sleep disturbance^[2, 9].

Orthopedic surgery is often referred as one of the most painful surgeries. It has been repeatedly reported that 30 - 80 % of patients undergoing surgery complain of inadequately treated pain^[7, 10]. As well as, lack of sleep is also an important postoperative symptom. There are about 42 % of patients suffered from unsatisfactory sleep following orthopedic surgeries, There are at least 41 % and 19 % of patients suffered from

suppression in total slow wave sleep and rapid eye movement sleep, respectively, during at least one night following surgery^[11].

Assessment of postoperative recovery period is becoming a clinical and research area of increasing significance. Nurses have an important role in the assessment of physical health problems following THR and TKR surgeries. Although other health care professionals are participating in the assessment and management of a patient's physical health problems directly or indirectly, nurses have the most contact with patients receiving health care. This involvement puts nurses in a unique position to search for patient's physical health problems and, if the screen is positive, to move forward with a comprehensive assessment of the patient's physical health problems experience^[12, 13].

II. Significant of Study

Poor postoperative assessment of patients following THR and TKR surgeries may result in patient and family complain, increase hospital stay and a greater demand on health care resources^[14]. Approximately 12.1% of patients undergoing THR and 19% of patients undergoing TKR are not satisfied with their post-surgical outcomes because their surgical goal of pain relief and functional improvement are not met and that an ample proportion of patients do not experience sufficient pain relief following surgery^[15]. The components of patients' experience change during postoperative period are required so that patients and clinicians can determine what pace and pattern of recovery to expect^[16].

Therefore, it seems imperative to assess patients' physical health problems following THR and TKR in order to inform patients about expected rates of progress, shorten the length of the hospital stay and decrease the health care costs.

III. Methodology

3.1 Aim;

This study aims to describe and compare between physical health problems following THR and TKR.

3.2 Research questions;

- What are the most prevalent physical health problems among patients undergoing THR?
- What are the most prevalent physical health problems among patients undergoing TKR?
- Is there is a significant difference between physical health problems among patients undergoing THR and patients undergoing TKR?

3.2 Research design;

A descriptive design was used to assess patients' physical health problems following THR and TKR surgery.

3.4 Setting;

The study was conducted in Orthopaedic Surgery Department at Mansoura University Hospital.

3.5 Participants;

A purposive sample of 63 adult patients underwent THR and TKR surgery was used over a period of 6 months that started from November 2015 to May 2016. Patients underwent an elective first-time primary THR and TKR, both sexes, free from cancer and free from any psychiatric diagnosis were the inclusion criteria for the participants.

3.6 Tools;

Three tools were used for data collection in this study as the following;

3.6.1 Tool I: Patient's Assessment Structure Interview

This tool consists of two parts; part I) Socio-demographic characteristics and health relevant data and part II) The Postoperative Recovery Profile (PRP) questionnaire.

Part I: Socio-demographic characteristics and health-relevant data.

This part was developed by the researcher, encompassing of two subcategories: the demographic data and the clinical data. The demographic data included age, gender, educational level, and occupational status. The clinical data included surgically treated joint, Length of postoperative hospital stay, the reason for surgical replacement. This data were collected by the researcher from the patients and according to the medical record.

Part II: The Postoperative Recovery Profile (PRP) questionnaire.

The PRP is a multi-dimensional, multi-items questionnaire for self-evaluation of general postoperative recovery^[17]. The researcher used the PRP version that consisted of 17 items for hospitalized patients, and each item was assessed primarily based on the preceding 24 hours. The items cover the following dimensions: physical symptoms, physical functions, psychological, social, and activity. Patients' perceived problems/difficulties are assessed by the response categories; severe, moderate, mild, none which implies that the data has ordered categories^[12].

3.6.2 Tool II: Functional Outcome Assessment

This tool aims to assess functional outcome; The New Knee Society Knee Scoring System to assess functional outcome of the knee joint and Harris Hip Scores to assess functional outcome of the hip joint.

The New Knee Society Knee Scoring System (KSS)

The Knee Society Clinical Rating System is specific knee joint questionnaire firstly developed and validated in 1989 for use in assessing the outcome of total knee replacement, then modified via The Knee Society 2011^[18]. This questionnaire was modified by the researcher to assess functional outcome of the knee joint. The new Knee Society Score is composed of four components: [1] The objective knee score, [2] Patient Expectations, [3] Patient Satisfaction Score and [4] Functional Score.

Rating system: the scoring system was done as follows, [1] Objective Knee Score: Alignment has a maximum of 25 points, Instability has a maximum of 25 points, Joint Motion allows one point for each 5° of joint motion, Symptoms category composes of two 10-level scales; starting from none to severe. [2] Patient Expectations: Patient Expectations is a three-question with fifteen-point scale. [3] Patient Satisfaction Score: Patient satisfaction is a five-question 40-point scale. [4] Functional Score: The functional score includes four subgroups and has a maximum rating of 100^[19].

Harris Hip Scores (HHS)

Harris Hip Scores was developed by William Harris, an orthopedic physician in Massachusetts, to evaluate a patient's functioning after hip replacement surgery. The original version was published 1969. The assessment offers a standard score used to evaluate hip replacement post-surgery recovery. The covered domains are pain, deformity, the range of motion and function^[20].

Response options/scale: the scoring system was accomplished as follows, pain (1 item, 0–44 points), free from deformity (1 item, 4 points), function (7 items, 0–47 points), and range of motion (2 items, 5 points). Rating each item has a special numerical scale. The range of motion item composed of 6 motions that are measured primarily based on the arc of motion possible. The overall rating is measured by summing the scores for the 4 domains and has a maximum of 100 points (best possible outcome). The higher the HHS score; the less dysfunction. A total score of 70 is evaluated as a poor result; 70–80 is fair, 80–90 is good, and 90–100 is an excellent result^[20].

3.6.3 Tool III: Hip and Knee Questionnaire

The hip and knee Questionnaire is a specific Questionnaire which used for assessment of the hip and the knee conditions and for monitoring treatment improvements. 10 scientific associations linked to disease developed the questionnaire. The Hip and Knee Questionnaire has meant to be used in patient's age ≥ 18 years. It includes 16 questions with Likert-type answers vary between 5 or 7 multiple-choices. The questionnaire has been used previously in order to assess functional recovery of patients who had undergone primary THR and TKR^[21].

3.7 Validity and reliability of the instruments

The developed tool was tested for content- related validity by 5 experts, three experts from the faculty of nursing and two from the faculty of medicine, Mansoura University, who reviewed the tool for clarity, relevance, understanding, and applicability for implementation. According to their critiques, minor modifications were done.

Postoperative recovery profile shows good construct validity and an ability to discriminate between recovery profiles in different groups^[12]. The majority of items showed a high level of intra-patient reliability^[22]. The 2011 KSS is a reliable, internal consistent, construct validity and responsive questionnaire, with 96% response rate and 43% completion rate. Reliability and internal consistency showed excellent result about ≥ 0.79 with ICCs and ≥ 0.76 with Cronbach's alpha for all subscales^[23].

Harris Hip Scores is a reliable, internal consistent, construct validity and content validity questionnaire. Harris Hip Scores had shown high reliability for both interrater and intrarater, Internal consistency was found to be high, except for the deformation subscale, Construct validity was judged to be high (compared with SF-36, WOMAC), In addition, content validity was found to be good^[24]. Hip and Knee Questionnaire Scores is a reliable, internal consistent, construct validity and content validity questionnaire. Hip and Knee Questionnaire had proven a high reliability, Internal consistency was found to be good, Construct validity was judged to be good (compared with WOMAC), In addition, content validity was found to be good^[24].

3.8 Pilot study

A pilot study was carried out on 5 patients from the orthopaedic surgery departments at Mansoura University hospital to assess the clarity and the applicability of the tool, and the necessary modification was done prior to data collection. Those patients were excluded in the main study.

3.9 Ethical considerations:

The researchers obtained the required permissions from the Research Ethics Committee of Nursing faculty, Mansoura University. Oral approval for the study was attended from each participant after verbal explanation of the study nature and objective were reported to all research participants. All patients were informed about their

rights to agree or disagree to participate in the study and they were permitted to leave from the research at any point of time and this will not affect their care.

3.10 Procedure;

1. After the proposal was approved by research ethical committee, Faculty of Nursing, Mansoura University. The researcher approached director of Mansoura University Hospitals to get permission for data collection.
2. The researcher was trained by an orthopedic doctor who is experts in the field to use a goniometer to measuring range of motion of the hip and the knee joint for one month. The traditional goniometer was used in this study.
3. The data were collected via personal interviews. In each day, the potential samples were eligible for the study if they met the inclusion criteria, each participant was interviewed twice: on the four and ten postoperative days from 9 to 12 am at Orthopaedic Surgery Department over a period of 6 months from November 2015 to May 2016.
4. Once the participant had enrolled in the study, the researcher contacted with the participant and collected data. At the first time, the researcher introduced to the participant to build the relationship together. Then, researcher informed the participant about the purposes, method, and procedure of study. The researcher asked for their verbal consent if willing to participate in the study.
5. Then, the participant was interviewed by the researcher, Participant was asked to answering the questions related to their experiences of physical health problems following THR and TKR surgery, if participant felt uncomfortable or not ready for answering the questionnaires, the researcher would not start until participant felt calm down and ready to participate.
6. Socio-demographic characteristics and health relevant data were completed from patient’s medical record and patient interview at the first meeting.
7. After the participant finished answering the question, the researcher measured Alignment, Medial / Lateral Instability, Anterior / Posterior Instability, flexion, Flexion Contracture, and Extensor Lag for patients underwent TKR, On the other hand, for patient who underwent THR the researcher measured flexion contracture, abduction, Flexion, and fixed internal rotation in extension. Furthermore, the researcher couldn’t measure Adduction, External Rotation, and Internal Rotation for patients who underwent THR because they were inapplicable and contraindicated in the early postoperative period due to the presence of a surgical wound. Then the researcher measure limb length discrepancy by measuring tape.
8. After having whole information, all data were checked for completeness by the researcher.

3.11 Statistical analysis;

Data were analyzed using Statistical Package for the Social Sciences (SPSS) Version 20. Qualitative variables were presented as number and percentage. Quantitative variables were presented as mean ± SD. To check the difference between two groups independent t-test was used. $P \leq .05$ was considered statistically significant.

IV. Results

Table 1: frequency distribution of socio-demographic characteristics and health relevant data (n = 63)

Demographic data		No	%
Age (years)	20-	12	19.0%
	30-	6	9.5%
	40-	11	17.5%
	50-60	34	54.0%
Mean ± SD	47.3 ± 13.1		
Gender	Male	20	31.7%
	Females	43	68.3%
Education	Educated	19	30.2%
	Not Educate	44	69.8%
Occupation	Working	18	28.6%
	Not Working	45	71.4%
Smoking	Yes	7	11.1%
	No	56	88.9%
Surgically treated joint	Right Hip	23	36.5%
	Left Hip	17	27.0%
	Right Knee	14	22.2%
	Left Knee	9	14.3%
Reason for surgical replacement	Osteoarthritis	40	63.5%
	Rheumatoid	5	7.9%
	Severe Trauma	17	27.0%
	Developmental Disorders	1	1.6%

Table (1) illustrates that more than half of the participants (54%) aged from 50 to 60 years with mean age 47.3. The highest proportions of study participants were female (68.3%), non-educated (69.8%), not working (71.4%) and non-smoker (88.9%). In relation to surgically treated joint, right hip (36.5%) was the commonest. Finally, regarding the reason for surgical replacement, around two-third of patients (63.5%) suffered from osteoarthritis.

Table 2: comparison between postoperative recovery profile (PRP) questionnaire for THR patients (n = 40) and TKR patients (n = 23) at the 4th and 10th postoperative day

Postoperative Recovery Profile		MCP Between hip and knee surgery (P)	
		Day 4	Day 10
Physical symptoms	Do you experience pain?	0.017*	0.311
	Do you experience postoperative nausea and vomiting (PONV)?	0.351	0.918
	Do you experience fatigue?	0.564	0.732
	Do you experience any appetite change?	0.796	0.772
	Do you experience sleeping difficulties?	0.994	0.959
Physical functions	Do you experience any problems with gastrointestinal function?	0.932	0.490
	Do you experience any problems with bladder function?	0.107	0.804
	Do you experience any muscle weakness?	0.356	0.118
	Do you experience any problems with mobilization?	0.246	0.767
Psychological	Do you experience any anxiety and worry?	0.116	0.890
	Do you experience feeling down?	0.412	0.961
	Do you experience feeling lonely/abandoned?	0.693	0.409
	Do you experience difficulties in concentration?	0.050*	0.806
Social	Do you have any difficulties /troubles with Social activities?	0.696	0.637
	Do you have any difficulties /troubles with Dependence on others?	0.468	0.810
	Do you have any difficulties /troubles with interested surroundings?	0.258	0.731
Activity	Do you have any difficulties /troubles with personal hygiene?	0.146	0.587
MCP: Mont Carlo exact probability * P < 0.05 (significant)			

Table (2) shows that there was a statistically significant difference ($p < 0.05$) between postoperative recovery profile (PRP) questionnaire for THR patients and TKR patients at the 4th postoperative day regarding physical symptoms; as pain (0.017) and psychological; as difficulties in concentration (0.050). This table also displays that there is no statistical significant difference between postoperative recovery profile (PRP) questionnaire for THR patients and TKR patients at the 4th postoperative day regarding physical functions, social and activity aspect. On the other hand, this table reveals that there was no statistical significant difference ($p < 0.05$) between postoperative recovery profile (PRP) questionnaire for THR patients and TKR patients at the 10th postoperative day.

Table 3: comparison between postoperative profile (PRP) questionnaire dimensions for THR patients (n = 40) and TKR patients (n = 23) at the 4th and 10th postoperative day

Postoperative Recovery Profile	Day 4		t (P)	Day 10		t (P)
	Hip surgery (n=40)	Knee surgery (n=23)		Hip surgery (n=40)	Knee surgery (n=23)	
	Mean ± SD	Mean ±SD		Mean ±SD	Mean ±SD	
Physical symptoms	4.0 ± 0.2	4.0 ± 0.2	1.000	1.9 ± 0.9	2.1 ± 1.2	0.254
physical functions	3.6 ± 0.5	3.6 ± 0.6	0.968	2.0 ± 1.1	1.8 ± 1.0	0.321
psychological	2.8 ± 1.2	2.9 ± 1.0	0.754	2.2 ± 1.1	2.0 ± 1.1	0.745
social	1.8 ± 1.1	1.8 ± 1.2	0.999	2.2 ± 1.2	2.2 ± 1.2	1.000
activity	2.0 ± 0.9	2.4 ± 0.8	0.086	2.2 ± 1.1	2.1 ± 1.2	0.957
t: independent samples t-test * P < 0.05 (significant)						

Table (3) reveals that there was no statistical significant difference ($p < 0.05$) between postoperative recovery profile (PRP) questionnaire dimensions for THR patients and TKR patients at the 4th and 10th postoperative day.

Fig. 1 represents mean and standard deviations of the Knee Society score at the 4th and 10th postoperative day were 49.87±20.03 and 79.91 ±19.66 respectively. The difference of Knee Society score between 4th and 10th postoperative day was statistically significant with a P = 0.001.

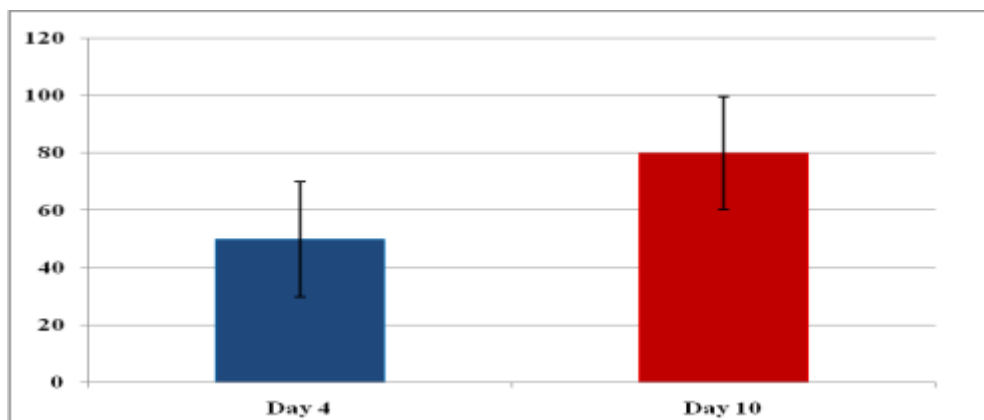


Fig. 1: mean and standard deviations of total knee society scores at 4th and 10th postoperative day (n= 23)

Fig. 2 represents that mean and standard deviations of the Harris hip scores at 4th and 10th postoperative day were 39.0 ± 5.4, 43.5 ± 3.4 respectively. The difference of total Harris hip score between 4th and 10th postoperative day was statistically significant with a P = 0.026.

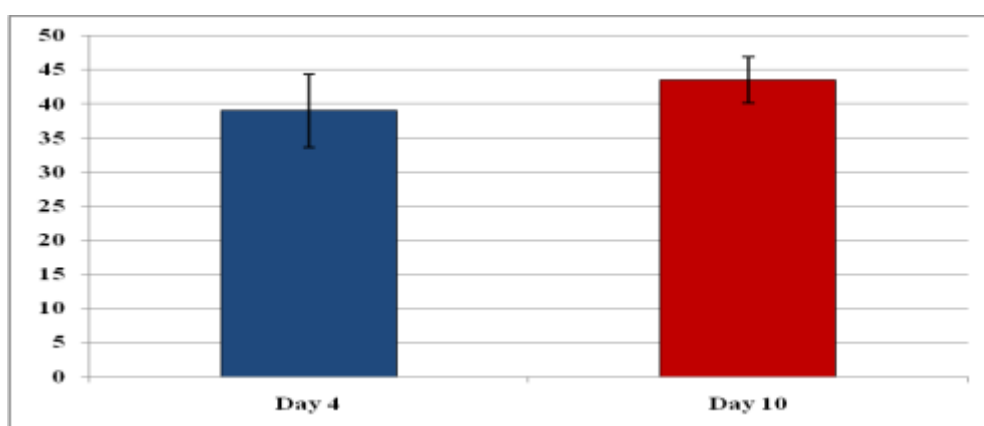


Fig. 2: mean and standard deviations of Harris hip scores at the 4th and 10th postoperative day (n= 40)

Table 4: Comparison between hip and knee questionnaire for THR patients (n= 40) and TKR patients (n= 23) at the 4th and 10th postoperative day

Hip and knee questionnaire		MCP	
		Between hip and knee surgery (P)	
During the past week,		Day 4	Day 10
Stiff on your hip/knee		0.029*	0.467
Swollen on your hip/knee		0.170	0.044*
Walking on flat surfaces	Right Hip	0.001*	0.485
	Left Hip	0.018*	0.239
	Right Knee	0.001*	0.587
	Left knee	0.001*	0.482
Going up or down stairs	Right Hip	0.001*	0.293
	Left Hip	0.040*	0.177
	right knee	0.001*	0.711
	Left knee	0.001*	0.482
Lying in bed at night	Right hip	0.001*	0.482
	Left hip	0.040*	0.510
	Right knee	0.001*	0.711
	Left knee	0.001*	0.482
Ability to get around most of the time		0.404	0.336
Put on or take off socks/ stockings		-	-

MCP: Mont Carlo exact probability
* P < 0.05 (significant)

It is apparent from table (4) that there were a statistically significant differences between THR and TKR patients at 4th postoperative day regarding stiffness (P = 0.029), Walking on flat surfaces (Right Hip) P = 0.001, (Left Hip) P = 0.018, (Right Knee) P = 0.001, (Left Knee) P = 0.001, Going up or down stairs (Right

Hip) $P = 0.001$, (Left Hip) $P = 0.040$, (Right Knee) $P = 0.001$, (Left Knee) $P = 0.001$, Lying in bed at night (Right Hip) $P = 0.001$, (Left Hip) $P = 0.040$, (Right Knee) $P = 0.001$ and (Left Knee) $P = 0.001$. On the opposite site, this table indicates that there was only a statistically significant difference between THR patients and TKR patients at the 10th postoperative day regarding swelling $P = 0.044$.

V. Discussion

Total hip and total knee replacement are promising management strategies which are forecasted to increase dramatically during the next 20 yr^[25, 26]. However, most major orthopedic surgery like THR and TKR involves large injured tissues and requires much time under general or regional anesthesia. As a result, there are potential risks of many unpleasant symptoms which may affect patients, including physiological, psychological, and social symptoms, such as pain, distress, anxiety, fatigue, discomfort, sleep disturbance, nausea, vomiting, and so on^[27, 28, 29].

The current study tries to describe and compare between physical health problems following THR and TKR surgeries. In relation to age, the present study represented that more than half of the patients' ages ranged from 50 to 60 years with mean age 47.3. This result is in agreement with Arnold, Walters, and Ferrar (2016) who demonstrated that majority of their participant's age ranged from 58.2 to 69 years. The aging population has no doubt contributed to the worldwide increase in THR and TKR numbers as age is the strongest predictor of the development and progression of osteoarthritis^[30]. On the other hand, this result is in disagreement with W-Dahl, Robertsson, and Lidgren (2010) who presented that THR and TKR is more frequent with younger age^[31]. In the present study, patients who underwent THR and TKR was encountered more among female, this agree with Liu et al. (2012) and Stark (2016)^[32, 33]. In the opposite direction, Madadi et al. (2011) and Thomas, Barrett, Tupper, Dacenko-Grawe, and Holm (2014) found that most of their studied patients were male^[34, 35]. As regards educational level, the findings of the present study represented that, more than half of patients, were non-educated. These subjects' educational characteristic was similar to Stark (2016)^[33]. In contrast, it disagrees with Postler, Neidel, Günther, and Kirschner (2011) who found that most of their patients were educated^[36].

In reference to occupation, the present study results concluded that more than half of patients were not working, this result is consistency with Shemey, Ebrahiem Elsaay, and Shemey (2015)^[37]. Regarding smoking, the present study showed that nearly most of patients were a non-smoker, this agrees with Shemey et al. (2015)^[37]. This result doesn't correspond with Ahmed and Al-rubaie (2015) who revealed that two third of percent of the study sample was smokers^[38]. In relation to the reason for surgical replacement, the majority of patients suffered from osteoarthritis. Series of studies is consistency with this result^[39, 40]. On the other hand, this result comes in disagreement with Balasubramanian et al. (2014) who represented that the reason for surgical replacement was osteoporosis caused by medications; as corticosteroid therapy and osteoporosis are independent risk factors for cartilage degeneration at the femoral head^[41, 42].

Notably, in this study when comparing between THR and TKR patients, there was a statistically significant difference between them at the 4th postoperative day as TKR patients had worse problems than THR patients. On the other hand, there was no statistically significant difference between TKR and THR patients at the 10th postoperative day. The findings of the current study were congruent with Shemey et al. (2015) who agreed that TKR is generally considered to be more painful than THR^[37]. These finding, however, are different compared with earlier studies, which have show that pain was affecting only between 7% and 20% of TKR patients and 2% to 8% of THR patients^[43, 44, 45].

The findings of the study also come in agreement with Duivenvoorden et al. (2013) who reported that the prevalence of anxiety in TKR patients is slightly more than THP patients postoperatively^[46]. In the same line come Wylde et al. (2009) who demonstrated that more TKR patients have reported extreme difficulty with individual activities following surgery than THR patients^[45].

The findings of the present study indicated that there were statistically significant differences between THR and TKR patients regarding stiffness, walking on flat surfaces, going up or down stairs, lying in bed at night at the 4th postoperative day. While there was only a statistically significant difference between THR and TKR patients at the 10th postoperative day regarding swelling. As this study, as well as other investigations, has shown THR was more successful than TKR in terms of greater degree of improvement in postoperative clinical outcomes. This is in accordance with the results of Zmistowski et al. (2013) who clarified that at 30 days postoperatively stiffness was reported by low percent of knee patients while there was no stiffness reported among hip patients postoperatively^[47, 48].

In the same line come, Vikki Wylde, Livesey, and Blom (2012) who interviewed 60 knee and 56 hip replacement patients about their leisure activities, About one-third of TKR patients have reported difficult to perform leisure activities at 1 year following surgery while only quarter of THR patients have reported difficult to perform leisure activities at 1 year following surgery^[49]. In addition, the findings of the result agreed with Pichonnaz, Bassin, Lécureux, Currat, and Jolles (2015) who reported that TKR patients experience swelling postoperatively while there are no research findings documented swelling as a health problem for THR patients

^[50]. The present study indicated that there were statistically significant differences in the range of motion, pain level, and functional activities between the 4th and 10th postoperative day. The current study demonstrated that means of the Knee Society score at the 4th and 10th postoperative day were (49.87 and 79.91) respectively. In addition, the finding corresponds with Groen, Stevens, Kersten, Reininga, and Van den Akker-Scheek (2012) who measured adherence to an activity regimen recommended to maintain health in patients who underwent total knee replacement and found that about forty of patients were not active enough to maintain their health and fitness ^[51]. The results disagree with George, Ruiz, and Sloan (2008) who found that patients who underwent TKR surgery improved on activities of daily living and instrumental activities of daily living ^[52]. In addition, the result is inconsistent with LütznérJörg (2016) who revealed that Knee Society Knee and Function scores improved significantly after TKR ^[53].

The findings of the present study indicated that there was a statistically significant difference in distance walked. Additionally, the present study indicated all patients had poor result after THR at the 4th and 10th postoperative day. These findings were supported by Monaghan, Grant, Hing, and Cusack (2012) who stated that THR patients experienced pain, physical impairment, reduced range of motion and reduced muscle strength persisting for one year ^[54]. The findings of the study also come in agreement with Singh and Lewallen (2010) who reported that patients had moderate to severe pain and activity limitation (defined as a limitation in 3 or more activities) following THR surgery ^[55]. The results disagree with Hamel, Toth, Legedza, and Rosen (2008) who demonstrated that THR patients experienced significant improvements in activities of daily living and instrumental activities of daily living at 6 weeks, 6 months, and 12 months post-surgery ^[56]. In addition, the results disagree with Sarzaeim, Darestani, Kazemian, Amuzadeh and Feizi (2015) who indicated that the average standard of Harris scale was good (79.8) six months after the surgery, and a year later it was excellent (91.2) ^[57]. This result also is inconsistent with Edmunds and Boscainos (2011) and Sander, Layher, Babisch, and Roth (2011) each have separately reported the increase in Harris scale and the improved performance of THR surgery ^[58, 59].

VI. Conclusion

The findings of the present study revealed that a variety of physical health problems were experienced postoperatively by patients underwent total hip and total knee replacement. Notably, when comparing between both of them there was a statistically significant difference as TKR patients had worse problems than THR patients.

Limitations

Firstly, a major limitation of this study is the small sample size (due to their fear of surgery outcome) that limits the ability to generalize findings. The relatively low rate of replacement of THR and TKR surgeries performed at orthopedic surgery departments at Mansoura University Hospital during this time period that met inclusion criteria limited the ability to enroll a large number of subjects in a reasonable time frame. However, results suggest clinical significance and the need to conduct future research with a larger sample size. Secondly, another limitation of this study is that patients are restricted in performing certain movements for a time period after surgery to avoid dislocating the joint replacement so this may influence patients responses to certain questions especially related to the activity. Finally, a short period of follow-up considers another limitation for this study. A key advantage of this study over previous studies includes the use of more than one tool to objectively assess patients' physical health problems following THR and TKR surgeries.

VII. Recommendation

1. Patient's physical health problems should be assessed by nurses constantly and progressively.
2. Simple booklet written in Arabic language should be developed and available for all THR and TKR patients included all needed information about physical health problems.
3. Educational program protocol or intervention should be conducted in orthopedic department for THR and TKR patients in order to enhance the quality of care and provide appropriate management of physical health problems experienced especially in the early postoperative period.
4. Long-term follow-up of patients who have undergone THR and TKR patients is necessary to determine durability and long-term outcomes.

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