

The pain perception and daily activities of patients with total knee arthroplasty

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Objective: To identify the pain perception and its effect on daily activities among patients with Total Knee Arthroplasty (TKA).

Methods: At the Emergency Department of Queen Alia Hospital, Amman, Jordan, eligible patients were interviewed from March 2010 to June 2011 using the Oxford Knee Score (OKS). In this cross sectional study, out of 550 patients undergoing TKA, 74 completed OKS health-status questionnaire preoperatively, at three and six months postoperatively, to determine the standardized response.

Results: Out of 74 patients, 18(24.3%) were male and 56(75.7%) were female. Smokers 10(13.5%) were smokers and 64(86.5%) non-smokers. 53 (71.6%) were married, 3 (4.1%) were single, 16

(21.6%) were widowed, and 2(2.7%) were divorced. In 10% the pain was severe. Almost one fifth had no pain after walking for more than 30 minutes. Only 8.1% experienced limping postoperatively. 26% of patients answering the questionnaire had satisfactory joint function, indicating that they may not require any formal treatment. Another 39% had mild to moderate outcome and needed only minimal treatment.

Conclusion: The study showed that daily life activities of patient's with TKA were not severely affected and postoperative pain was minimal. Many experienced satisfactory joint function. (Rawal Med J 2014;39: 414-417).

Keywords: Total knee arthroplasty, pain perception, Oxford Knee Score.

INTRODUCTION

Pain and physical disability are two main symptoms of Knee Osteoarthritis (OA), which lead to significant reduction in health-related quality of life (HRQOL).¹ Total Knee Arthroplasty (TKA) is a well-established procedure that had shown excellent long-term results in terms of reduced pain and increased mobility.² Therefore, the numbers could be expected to increase in future with aging of the population who are obese.³ The reduction in pain is immediate and over 90% patients report satisfied with the procedure.⁴

Pain severity is the important variable of functional status for patients with osteoarthritis.⁵ For the functional outcomes of patients after TKA, maximal improvement in physical composite score

was seen in patients who had a better mental health status at baseline, who were older, and who had their surgery performed in institutions that performed greater than 50 TKA per year.⁶ The objective of this study was to identify the pain perceived and daily activities of patients with TKA.

METHODOLOGY

At the Emergency Department of Queen Alia Hospital, Amman, Jordan, 74 out of 550 patients were recruited from the orthopedic service from March 2010 to June 2011. A trained interviewer interviewed each patient. The study used The Oxford Knee Score (OKS) to identify the patient's functional outcomes after TKA.

Table 1. The questions in OKS.

1	How would you describe the pain you usually have in your knee?
2	Have you had any trouble washing and drying yourself (all over) because of your knee?
3	Have you had any trouble getting in and out of the car or using public transport because of your knee? (With or without a stick)
4	For how long are you able to walk before the pain in your knee becomes severe? (With or without a stick)
5	After a meal (sat at a table), how painful has it been for you to stand up from a chair because of your knee?
6	Have you been limping when walking, because of your knee?
7	Could you kneel down and get up again afterwards?
8	Are you troubled by pain in your knee at night in bed?
9	How much has pain from your knee interfered with your usual work? (including housework)
10	Have you felt that your knee might suddenly give away or let you down?
11	Could you do household shopping on your own?
12	Could you walk down a flight of stairs?

OKS is a 12-item questionnaire developed specifically for measuring the outcome of TKR. It has demonstrated good validity, reliability and sensitivity in different countries. Each of the domains is assessed by a single question with five response levels No pain (no problems), very mild, mild, moderate (some problems), severe (Table 1).

RESULTS

A total of 74 outpatients participated in this cross sectional study. Two of them were excluded in the analysis due to missing OKS item scores. The mean age of patients was 64.86 years (rang 28-80), with the majority (75.7%) being female, non-smokers (86.5%), married (71.6%) and having insurance as

Military (68.9%). Average hospital stay for surgery was 6.89 days (Table 2).

Table 2. Demographic parameters of the study group.

Characteristic	Findings
Gender	Male: 18(24.3%) Female: 56(75.7%)
Smoking	Yes: 10(13.5%) No: 64(86.5%)
Marital status	Married: 53(71.6%) Single: 3 (4.1%) Widow: 16(21.6%) Divorce: 2(2.7%)
Type of Insurance	Military: 51(68.9%) Civil: 19(45.9%) R.C:4(5.4%)
Side of surgery	Rt: 39(52.7%) Lt: 34(45.9%) Both:1(1.4%)
Year operation performed	2010: 52(70.3%) 2011:22(29.7%)
Age	Mean : 64.86 SD: 9.815
Hospital stay (days)	Mean: 6.89 SD: 2.488

The mean OKS was 32.34 with minimum 12 and maximum 46 (Fig. 1). The daily life activities, in 10% of the cases the pain was severe, while the rest of the cases were having mild to moderate pain (Table 3).

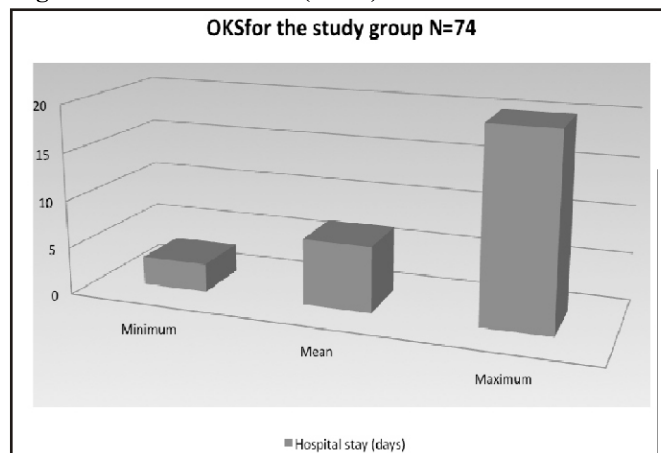
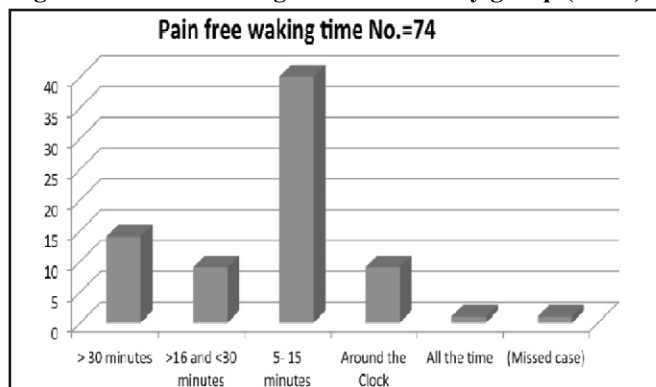
Fig. 1. Oxford Knee Score (N=74).

Table 3. Difficulties in performing daily activities (N=74).

	No pain	Very mild	Mild	Moderate	Severe
Difficulties in getting on the stairs	32	16	12	12	2
Difficulties in setting for long time	43	16	11	2	1
Difficulties doing shopping	18	13	4	21	18
Difficulties in getting on the stairs	32	16	12	12	2
Difficulties in setting for long time	43	16	11	2	1
Difficulties in daily work jobs	22	18	14	8	10
Severity of pain	26	7	27	6	8

After walking for more than 30 minutes 18.9% had no pain. Only one (1.4 %) had pain all the time. Majority of patients (54.1%) can walk for 5-15 minutes before experiencing pain (Fig. 2).

Fig. 2. Pain free walking time in the study group (N=74).

Only 8.1% experiencing limp all the time (Table 4). 26% of patients had satisfactory joint function, which indicates that they may not require any formal treatment. Another 39% had mild to moderate outcome and need only minimal treatment. This group is about 2/3rd of the patients, and it reflects a good outcome.

Table 4. Difficulties in performing daily activities (N=74).

Have you ever limped	Number	%
Rarely	34	45.9
Sometimes	27	36.5
Usually	2	2.7
Often	5	6.8
All the times	6	8.1
Total	74	100

DISCUSSION

The OKS was designed to evaluate the outcomes of TKR,⁸ and its reliability and validity have been established in OA patients undergoing TKR in different countries.⁷⁻¹³ However, patients report expectations of functional improvement to be just as frequent and important as expectations of pain relief.¹⁴ Physical function do not necessary improve because of pain reduction, implying a need for rehabilitation, exercise and physical therapy aiming at restoring physical function. Few studies on rehabilitation, exercise and physical therapy after total joint replacement are found in the literature but it seem possible to improve physical activity by exercise programs carried out at home or in groups.¹⁵

In our study, the mean age of patients was 64.86 years with the majority being female (75.7%), non-smokers (86.5%), married (71.6%), and having insurance as Military (68.9%). The mean OKS Oxford knee score was 32.34. For the patients surgery the average hospital stay was 6.89 days. Some studies found that age was inversely associated with pain, where younger patients reported higher pain. Age differences in pain scores have previously been reported.^{16,17} but studies examining the underlying causes of age differences in pain are equivocal and sporadic. Gibson and Helme¹⁶ suggest that cultural factors, such as stoicism, lack of familiarity with verbal pain descriptors and the practice of pain reporting, may result in under-reporting of pain among older adults. In addition, older patients may falsely believe that pain is part of the natural trajectory and under report.¹⁶ Recently, LaChapelle and Hadjistavropoulos¹⁸ found that increasing age is related to decreased pain severity and the perception of greater control over pain.

Osteoarthritis is the leading cause of long-term disability.¹⁹⁻²⁰ The prevalence of osteoarthritis-related disability is greater among women than among men.⁶ Thus, arthritis is a major health problem for women. Joint arthroplasty is a cost-effective treatment for advanced arthritis of the hip and knee that relieves pain and reduces functional disability.

CONCLUSIONS

By using the OKS scale, we showed that daily life activities of patient's with TKR were almost in the positive side and they experienced satisfactory joint function.

Author Contributions:

Conception and design: Mohammed Issa AL-adwan
Collection and assembly of data: All
Analysis and interpretation of the data: All
Drafting of the article: Mohammed Issa AL-adwan
Critical revision of the article for important intellectual content: Mohammed Issa AL-adwan
Statistical expertise: All
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