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Restriction in participation in leisure activities after joint replacement: an exploratory study

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Abstract

Background: currently, assessment of outcomes after joint replacement is predominantly centred on impairment and activity limitation (e.g. walking), with little consideration of participation restriction.

Method: structured telephone interviews about participation in leisure activities were conducted with 56 total hip replacement (THR) and 60 total knee replacement (TKR) patients before and 1 year after joint replacement.

Findings: before surgery, THR patients participated in 209 leisure activities, with an average of four leisure activities per person. TKR patients participated in 171 leisure activities, with an average of three leisure activities per person. The leisure activities were coded into four categories: sports/exercise, hobbies, social activities and holidays. Between 89 and 95% of leisure activities were rated as important by THR and TKR patients prior to surgery. Before surgery, THR patients rated 82% of leisure activities as difficult to perform because of joint problems, which decreased to 25% of leisure activities by 1-year after surgery. TKR patients rated 86% of leisure activities as difficult to perform because of joint problems, which decreased to 32% after surgery.

Conclusion: this research highlights that participation in leisure activities is important to patients undergoing joint replacement, but that approximately a quarter of patients are unable to perform their valued leisure activities after surgery.

Keywords: *arthroplasty, hip, knee*

Introduction

Osteoarthritis (OA) is the leading cause of disability and pain in older people [1], with 10% of all adults over 55 years of age experiencing painful knee OA with mild–moderate disability [2]. When conservative management of the symptoms of OA fails, patients often elect to undergo joint replacement. Total hip replacement (THR) and total knee replacement (TKR) are widely accepted as effective surgical procedures to alleviate chronic joint pain and improve functional ability. In the past, the assessment of the success of a joint replacement has primarily focussed on objective outcomes, such as survivorship of an implant. In recent years, however, the assessment of outcomes after joint replacement has become more patient-centred, demonstrated by the implementation of the government’s PROMs initiative [3]. This involves the assessment of joint pain and functional limitations using the validated Oxford questionnaires [4, 5].

To facilitate the assessment of patient outcomes after joint replacement, it is useful to have a theoretical framework. The World Health Organisation’s International Classification of Functioning (ICF) [6] provides a biopsychosocial model, in which disability consists of three main constructs: impairment, activity limitation and participation restriction. Impairments are problems with physiological structure or functioning, activity limitations are problems in carrying out a task or action and participation restrictions are difficulties relating to involvement in life situations.

Currently, assessment after joint replacement is predominantly centred on impairment (e.g. reduced range of motion) and activity limitation (e.g. walking), with little consideration of participation restriction [7]. One aspect of participation which is highly valued by joint replacement patients is the ability to partake in leisure activities [8, 9]. Therefore, the aim of this study was to prospectively explore how important and difficult participation in leisure activities was to patients before and after joint replacement.

Patients and methods

All eligible patients who attended a pre-admission assessment clinic at one orthopaedic centre were invited to participate. Inclusion criteria were being listed for primary THR or TKR. Pre-operatively and then at 1-year after joint replacement, participants were interviewed over the telephone about their participation in leisure activities. In the pre-operative interview, participants were asked what leisure activities they currently did or did do before the onset of their symptoms. For each leisure activity, participants were asked to rate the importance of the leisure activity as not at all, a little bit, quite or very important. They were then asked to rate the difficulty of performing the leisure activity because of their joint problems as not at all, a little bit, quite or very difficult. In the post-operative interview, patients were reminded of each of the leisure activities that they listed pre-operatively and were asked again about the difficulty of each leisure activity.

Ethical approval was obtained for this study and all participants provided informed, written consent.

Data analysis

The pre-operative leisure activities that participants participated in were coded into categories by one researcher (V.W.). A random sample of leisure activities were then independently coded by another researcher (C.L.), and the emerging categories were then discussed until agreement was reached.

Sample size

Because of the exploratory nature of this study, 100 patients (50 TKR and 50 THR) were considered a sufficient sample size to explore the importance and difficulty of performing leisure activities before and after joint replacement.

Results

Pre-operatively, 74 THR patients and 70 TKR patients were interviewed. Twenty-eight patients were not interviewed post-operatively, because they either withdrew or were lost to follow-up (24 patients), or had not participated in any leisure activities pre-operatively (4 patients). Therefore, data analysis was performed on 56 THR patients and 60 TKR patients (81% of patients recruited). THR patients had a median age of 67 years (range: 60–74) and 70% were female. TKR patients had a median age of 72 (range: 64–75) and 60% were female. All participants were white, 34% had a college or university education and 56% were married. THR patients participated in 209 leisure activities, with an average of 4 leisure activities per person. TKR patients participated in 171 leisure activities, with an average of 3 leisure activities per person. The leisure activities were coded into four categories: sports/exercise, hobbies, social activities and holidays. Further details on the categories of leisure activities can be found in Table 1. For both THR and TKR patients, the most commonly participated in leisure activities were sports/exercise (52–54% of all leisure activities), followed by hobbies (26–30% of all leisure activities).

Difficulty and importance of performing leisure activities

THR

Pre-operatively, 89% of leisure activities were rated as quite or very important by THR patients. Before surgery, 82% of leisure activities were quite or very difficult to perform because of joint problems, which decreased to 25% of leisure activities post-operatively. Sports were most likely to remain difficult after surgery (27%), and social activities were most likely to get easier (60%). The percentage of leisure activities that were rated as quite or very difficult pre-operatively and post-operatively by THR and TKR patients is displayed in Figure 1.

TKR

Pre-operatively, 95% of leisure activities were rated as quite or very important by TKR patients. Before surgery, 86% of

leisure activities were quite or very difficult to perform because of joint problems, which decreased to 32% post-operatively. Sports were most likely to remain difficult after surgery (35%), and social activities were most likely to get easier (56%).

Discussion

This study found that both before and after joint replacement, patients participate in many different leisure activities, demonstrating that this patient cohort was very active, both physically and socially. This supports the findings from other orthopaedic studies, which have found a high level of involvement in social activities after hip fracture [10], and a high rate of sports participation in patients undergoing a range of lower limb orthopaedic procedures [11].

The vast majority of leisure activities generated by study participants before surgery were rated very important, demonstrating that social participation is important in this cohort of patients. Although participation in the majority of leisure activities was unproblematic after surgery, approximately a quarter of leisure activities were difficult to

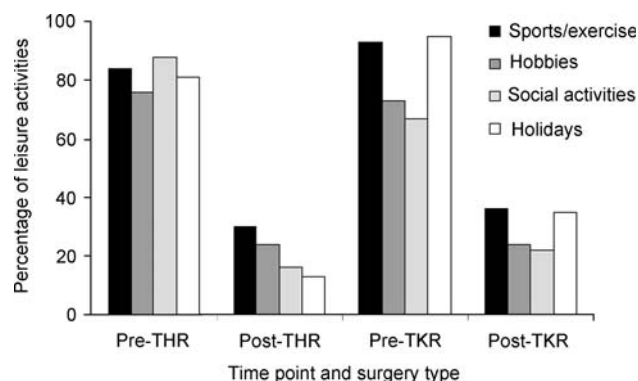


Figure 1. The percentage of leisure activities that were rated as quite or very difficult pre-operatively and post-operatively by total hip replacement (THR) and total knee replacement (TKR) patients.

Table 1. Themes and categories of leisure activities generated by pre-operative THR (total hip replacement) and TKR (total knee replacement) patients

Theme of leisure activities	Number of leisure activities (%) in this theme		Category of leisure activities	Number of leisure activities (%) in this category	
	THR	TKR		THR	TKR
Sports/exercise	113 (54)	89 (52)	Walking, e.g. walking dog, country walks, hill walking	40 (19)	40 (23)
			Low-intensity sports, e.g. golf, swimming, bowls, darts	36 (17)	26 (15)
			High-intensity sports, e.g. dancing, tennis, badminton, running	37 (18)	23 (13)
Hobbies	55 (26)	51 (30)	Gardening, e.g. maintaining garden, allotment or greenhouse	24 (11)	21 (12)
			General interest hobbies, e.g. reading, baking, art, puzzles	24 (11)	29 (17)
			Volunteer work, e.g. assisting at groups, catering for events	7 (3)	1 (1)
Social activities	25 (12)	9 (5)	Interaction with friends/family, e.g. visiting people	7 (3)	3 (2)
			Social clubs/groups, e.g. church, book club, bingo, lunch club	13 (6)	5 (3)
			Going out for entertainment, e.g. dining out, going to the theatre	5 (2)	1 (1)
Holidays	16 (8)	22 (13)	Holidays/day trips, e.g. going abroad, visiting museums, coach trips	16 (8)	22 (13)

perform, with sporting activities most frequently causing difficulty post-operatively. This highlights that joint replacement surgery is not enabling all patients to return to their pre-operative leisure activities. These participation restrictions could lead to dissatisfaction with the outcome of surgery and contribute to depression [12].

When interpreting the results of this study, it is important to acknowledge the study limitations. As the study was exploratory, it had a small sample of patients who were all recruited from one orthopaedic centre, which may limit the generalisability of the findings. Of the study participants recruited, 17% of patients were lost to follow-up, which may have introduced bias as previous research has found that those patients lost to follow-up after joint replacement are often the patients with poorer outcomes [13].

Although this study had a small sample size, if the results were confirmed in a larger study the clinical implications would be that patients need to be informed pre-operatively that there is a chance they will still experience difficulty in participating in leisure activities, to allow patients to form realistic expectations. The implications for research are that there is a need to assess participation restrictions after joint replacement, as they can be frequent and important to patients. One tool that could be used to measure participation restriction is the recently validated Aberdeen IAP (Ab-IAP measure), which has been developed since the data were collected for this study [14]. This questionnaire uses the ICF framework to assess disability and produces pure scores for impairment, activity limitation and participation restriction. A move towards incorporating a questionnaire-like the IAP-Ab into an outcomes assessment can allow assessment to focus on outcomes that are important to the patient, and therefore determine whether joint replacement is meeting the demands and expectations of the patient.

In summary, this research highlights that participation in leisure activities is important to patients undergoing joint replacement, but that approximately a quarter of patients are unable to perform their leisure activities after surgery. If these initial findings are confirmed in larger studies, they suggest that joint replacement patients should be informed that they may not be able to return to valued leisure activities after joint replacement, and that participation restrictions should be assessed when measuring outcomes after joint replacement.

Key points

- Participation in leisure activities is important to patients undergoing joint replacement.
- Approximately a quarter of patients are unable to return to valued leisure activities at a year after joint replacement.
- Participation restriction should be assessed when measuring the outcomes of joint replacement.

Conflicts of interest

None declared.

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