



Pre-operative preparation of patients for total knee replacement: An action research study

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KEYWORDS

Action research;
Social Cognitive Theory;
Total knee replacement;
Service user
involvement;
Pre-operative
assessment;
Practice development

Abstract *Aims and objectives:* To examine the development and impact of a multidisciplinary preparation clinic for patients undergoing total knee replacement (TKR) surgery.

Background: There is evidence to suggest that patients' preoperative characteristics such as pain and mental state impact the long term results of TKR surgery. Preparation sessions may help in identifying and working with those patients whose preoperative status could reduce the benefits of surgery.

Design: Action research.

Method: Actions cycles were carried out to develop an information booklet and multidisciplinary Knee Clinic at an acute Trust in outer London, UK. A sample ($n = 23$) of patients was recruited to test changes as they were implemented.

Results: The Knee Clinic involved nurse practitioners, occupational therapists, physiotherapists and service users (patients recovered from TKR surgery). Elements of physical and social assessment and interventions were carried out using a Social Cognitive Theory framework. Patients reported they benefitted from the information booklet and attendance at the Knee Clinic.

Conclusion: A structured pre-operative information and assessment clinic can be developed using a Social Cognitive Theory framework for the benefit of patients. Further studies are required to examine and utilise psychological assessment of patients at such clinics.

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Editor's comment

There is a long tradition of research and practice development that explores the value of information and support given to patients prior to elective orthopaedic surgery. It is important to not only know if such information and support is acceptable to patients, but that it is worthwhile in terms of its impact on outcomes. This is, however, a very complex issue. This study has illuminated some of this complexity through using the action research process to explore the benefits of both face to face education sessions and written information in relation to their impact on post-operative outcomes from the patients' perspective. What are, perhaps, most important are the approach to user involvement that ensures that the output is focussed on the real world of the patient and the focus on service development in the unit in which the project took place.

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Introduction

This paper examines changes made in the preparation of patients with osteoarthritis (OA) for total knee replacement (TKR) surgery at an English district general hospital utilising an action research approach. TKR surgery is clinically and cost effective for patients whose OA is not successfully managed with conservative options and around 60,000 procedures are performed in England and Wales annually (Dakin et al., 2012). On average 90% of TKR prostheses are still in situ with no radiological signs of loosening 15 years after surgery (Labeck et al., 2011). However 10–20% of patients have the same or worse pain 1–7 years after their operation (Brander et al., 2003; Wylde et al., 2007) and up to one-fifth think their reduced functional ability still hampers physical activities (Wylde et al., 2007). Potentially modifiable pre-operative patient characteristics such as pain and self-efficacy beliefs may impact on longer term post-operative outcomes, reducing the overall benefits obtained by the surgical procedure (Escobar et al., 2007; van den Akker-Scheek et al., 2007).

The aim of this project was to develop, implement and evaluate a multidisciplinary pre-operative Knee Clinic to address these patient characteristics.

Background

To identify modifiable pre-operative patient physical and psychosocial factors affecting longer term (>6 weeks) post-operative outcomes after TKR surgery and potential interventions to mediate the effects of these factors, a search of electronic databases (Cochrane, CINAHL, MEDLINE, EMBASE, PsycINFO) was performed to identify English language literature published since 2000. Older

work was considered if it was seminal, such as that on self-efficacy (Bandura, 1977). Keywords included total knee replacement, total knee arthroplasty, pre-operative, post-operative outcomes. Thesaurus mapping and Boolean operands were used. Titles and abstracts were read to identify relevant articles and their reference lists scanned to identify further literature. Articles for inclusion were assessed for quality using published frameworks (Greenhalgh, 2001).

Much of the literature retrieved used mixed samples of TKR and total hip replacement (THR) patients. Whilst the reasons for surgery and recovery profiles are generally similar, they are not identical and studies involving THR patients were therefore included with caution.

Physical characteristics

Studies identified that pre-operative pain and function impact post-operative outcomes. Patients with more severe pain pre-operatively had higher pain levels up to 2 years post-surgery (Fitzgerald et al., 2004; Lingard et al., 2004; Escobar et al., 2007) and worse function at 1 year (Brander et al., 2003). Patients with poorer pre-operative function had poorer post-operative function at 1 year (Fitzgerald et al., 2004; Lingard et al., 2004) although at 2 years post-surgery co morbidities and age were equally able to predict post-operative function (Lingard et al., 2004).

In a systematic review exercise was demonstrated to reduce pre-operative pain for patients with knee OA awaiting TKR surgery, but there was little evidence that it impacted pain or function after TKR surgery (Wallis and Taylor, 2011). Pre-operative education alone did not reduce post-operative pain (McDonald et al., 2004; Johansson et al., 2005) and the psychosocial factors considered below need to be taken into account.

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