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# Total knee replacement pre-operative education in a Singapore tertiary hospital: A best practice implementation project

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#### **KEYWORDS**

Total knee replacement; Nursing knowledge; Pre-operative; Patient education; Evidence-based practice **Abstract** *Objectives:* To increase the competency of specialist outpatient clinic nurses in the provision of pre-operative total knee replacement (TKR) education, and ensure that all patients scheduled for elective TKR received the pre-operative education package.

*Methods:* The project was implemented in three phases. Phase 1 entailed a baseline audit that analysed 30 randomized TKR patients who received pre-operative education. In Phase 2, the gaps and barriers in the project were discussed. Using best practice recommendations from the Joanna Briggs Institute, the project team leader collated and standardized the pre-operative education tools, which consisted of a pictorial booklet, a video and home care advice. A teaching plan guided the nurses to increase their understanding and improve practice using the education tools. The usefulness of education strategies and tools was discussed and these were improved over the proposed timeline. Phase 3 entailed a post-implementation audit to evaluate the provision of pre-operative education.

**Results:** Post implementation, nurses' competency in the provision of preoperative TKR education increased from 18% to 91%. The number of patients who received the structured pre-operative education package increased from 27% to 50%.

**Conclusion:** Overall, there was improvement in the provision of pre-operative TKR education to patients by clinic nurses using evidence-based best practice and a standardized education package.

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#### **Editor's comments**

The notion of improving pre-operative information for joint arthroplasty patients is not new. Practice development initiatives with the aim of benefiting patients and improving the quality of care need, however, to meet local needs. With a desire to take into account local and national drivers as well as cultural issues, it is essential to approach projects in the most appropriate way for those involved. In particular, practitioners who are expected to participate in and implement such changes and developments need to be engaged in the process and its evaluation. This paper provides an example of a project that focussed very clearly on taking into account the needs and views of those patients and practitioners who were most affected by it.

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#### Introduction

## Osteoarthritis of the knee and its management

Osteoarthritis (OA) of the knee is a common joint disorder affecting individuals over 55 years of age (Peat et al., 2001). Common symptoms are pain, stiffness and muscle weakness, which lead to limited mobility and poor quality of life due to untreated complications (O'Reilly and Doherty, 2003). Strenuous weight impact and cyclic loading, leading to early cartilage degeneration causing misalignment and deformity, are risk factors for OA of the knee (Andriacchi and Mündermann, 2006; Nuki and Salter, 2007). There is growing evidence that joint deformity, history of knee injury and obesity contribute to the progression of OA of the knee (Brand and Cox, 2006; Felson and Zhang, 1998; Sharma et al., 2001). The standard management of this condition aims to reduce pain and joint stiffness, and decrease disability and other related complications in order to improve patient function and quality of life. According to international guidelines, patients who fail to achieve adequate pain relief and functional improvement from conservative management should be considered for joint replacement (Jordan et al., 2003; Zhang et al., 2007, 2008; Zhang et al., 2010).

## Preparation of patients for total knee replacement

Effective pre-operative preparation is crucial for patients undergoing TKR as the objectives are to improve the patient's functional status and achieve optimal recovery and quality of life following surgery. Pre-operative preparation includes physiotherapy sessions, pre-anaesthetic assessment financial counselling and pre- and postoperative education. Multidisciplinary preparation improves recovery because pre-operative assessments and interventions provide

patients with practical knowledge about the operation (Lucas et al., 2012). Nurses play an important role in facilitating and supporting patients preoperatively (Walker, 2012). A descriptive study reported that 78% of patients perceived pre-operative education as useful preparation for their surgery (Chetty and Ehlers, 2009). A review of pre-operative patient education information identified factors of importance to patients including: wound care, pain management, physical activity, postoperative selfcare, coordination of follow-up care, community resources and psychosocial aspects (Suhonen and Leino-Kilpi, 2006). A review by McDonald et al. (2004) concluded that pre-operative education reduces patient anxiety and improves patient satisfaction and outcomes, but limited evidence is available regarding effective pain control, physical functioning and reducing the length of hospital stay. Effective preoperative education provides patients with knowledge about the procedure and what they can expect, particularly when the education plan is aligned with a patient's individual needs and requires the collaboration of a multidisciplinary team (Kruzik, 2009; McDonald et al., 2004). A structural approach, such as an enhanced recovery pathway, requires multidisciplinary team effort to provide pre-operative assessment, planning and preparation and can reduce the length of hospital stay and cost, improve patient outcomes and improve patient satisfaction (Wainwright and Middleton, 2010). Pre-operative programmes include patient education, physiotherapy sessions and occupational therapy sessions and aim to encourage patients to participate actively in preparation for surgery (Lucas et al., 2012).

## Treatment of osteoarthritis of the knee in Singapore

Patients with OA of the knee are commonly referred from the primary healthcare system for continuous and specialized treatment in Singapore acute

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