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Feature Article

Factors related to older patients' fear of falling during the first mobilization after total knee replacement and total hip replacement

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ABSTRACT

The aim of this study was to determine fear of falling in the first mobilization and affecting factors in older patients. The study had a descriptive and cross-sectional design. Data were collected in Izmir, Turkey between February 2014 and March 2016. The sample included 204 older patients undergoing joint replacement surgery. Fifty-seven-point four percent and 42.6% of the patients had total hip and knee replacement respectively. 42.2% of the patients had a severe fear of falling when they were first mobilized. There was a statistically significant difference between fear of falling in the first mobilization and the mean pain severity. In addition, the difference between fear of falling and the mean anxiety level was statistically significant. Pain and anxiety are important factors contributing to fear of falling in mobilization. The results of the study can help develop multidimensional strategies for reducing fear of falling in older people after joint replacement.

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Introduction

The World Health Organization (WHO) defines the population over 65 years of age as old, with respect to their chronological age.¹ The number of total knee replacement (TKR) and total hip replacement (THR) surgeries for osteoarthritis and hip fractures in older people increases every year as they age.² After these surgeries, 3.5% of the patients develop complications such as atelectasis, pneumonia, deep vein thrombosis, falls, and constipation.³ Mobilization plays an important part in reduction of these complications.⁴ The current literature emphasizes that patients undergoing THR and TKR should be mobilized within 24 hours of surgery to prevent and reduce complications and hasten healing.^{5,6} Patient mobilization is a complex and dynamic process. It is affected by personal factors such as age, diagnosis, pain severity, mental status, fear and anxiety, environment, organizational culture, and policies.⁷ All patients, especially the older patients, may avoid mobilization because of the fear of falling and damaging the prosthesis after THR and TKR. This

fear may cause restriction of activities and reduction of functional independence.^{8,9}

Fear of falling is common among older people, with an incidence ranging from 21% to 85%.^{10,11} The incidence of fear of falling is 12.6% in people aged 55–75 years, but the incidence of fear of falling which restricts activities is reported to be higher.^{11,12} Fifty percent of older patients who fall experience fear of falls before mobilization. This fear can be encountered in patients without a history of a fall, although it usually develops after one has occurred.¹³

It has been shown that 1.6% of patients fall after undergoing surgery and that most of these falls occur during mobilization.^{14,15} Patients have been reported to experience fear and anxiety about how to walk during mobilization because of the hospitalization itself as well as physical, psychological and social effects of surgery.¹⁶ Older patients experience fear of falling after TKR and THR, because these are major surgeries and cause severe pain and difficulty during their mobilization.^{16–18} Patients also report an increased fear of falling and concerns for becoming dependent on others after falling.^{16,17} This fear often prevents patients with orthopedic conditions from exercising. This may lead to restriction of functions, and the reduction of the ability to complete daily life or self-care activities. The unfortunate results may increase patients' dependency on others. Furthermore, the impact of this change may exert a negative effect on patients' quality of life, causing depression and disturbed social relationships.^{10,19–24}

Conflicts of interest: None.

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Fear of falling in older patients hinders their mobilization, increases the incidence of falls, and causes complications after surgery. Therefore, understanding the factors affecting patients' fear of falling will play an important role in prevention of this fear. Many studies reveal older patients' fear of falling during their mobilization in hospital⁷ and after spinal surgery.²⁵ The factors influencing fear of falls in THR patients during the early and late postsurgical periods have been reported to be age, gender, prior fall history, restriction of movements and emotional changes.^{13,26,27} Studies on older patients' fear of falling have shown that this fear is experienced in individuals with more losses of balance, less physical strength, less ability to walk and more social isolation. Furthermore, patients suffering more pain at discharge from surgery report a fear of falling. However, there have not been any studies on fear of falling and associated factors during the first mobilization of TKR and THR patients. Therefore, this study was directed towards revealing the experience of TKR and THR patients' fear of falling and influencing factors during the first mobilization. The specific hypotheses in this study were as follows: 1) Pain, anxiety, and depression are associated with fear of falling in patients' first mobilization after TKR and THR, 2) Age, gender, education, type of joint replacement surgery and prior falls history are associated with fear of falling in their first mobilization after TKR and THR. The results of the study will provide guidance in nursing interventions directed towards care for older patients experiencing fear of falling after orthopedic surgeries.

Methods

Design, setting

This study was cross-sectional and descriptive. Data were collected between January 2014 and March 2016 in the Orthopedics and Traumatology Clinic of a university hospital in Izmir, Turkey. There were no preadmission clinics in the hospital where preoperative education about THR and TKR was offered or where there were orthopedic nurses. In fact, most developing and undeveloped countries do not have these clinics. Although preoperative education was not given in the outpatient clinic in the hospital where the study was performed, it was provided by the doctors and the nurses when the patients were admitted to the orthopedics clinic. The education was about how they would evaluate postsurgical pain and how pain management would be achieved. Education after surgery and on discharge was given by the orthopedic nurses to the patients undergoing THR and TKR. In addition, the patients were given an information booklet about homecare on discharge. The first mobilization of the patients after surgery was performed by a physiotherapist at the discretion of the surgeon. Subsequent mobilizations were carried out by the physiotherapist and the nurses. Isotonic and isometric exercises were performed by a physical therapy doctor on the first postsurgical day for all patients in the Orthopedics and Traumatology Clinic. Patients were mobilized either on the first or second postsurgical day depending on the type of joint replacement surgery and their general health status.

Patients were mobilized on the second postsurgical day if they were unable to perform isometric and isotonic exercises on the first postsurgical day. This was also the case if they had remained in the post-anesthesia care unit after surgery or had experienced more than 250 ml bleeding in the first eight hours after surgery.

This study was approved by the Ethics Board for Non-Interventional Clinical Research and the university hospital in Izmir. All patients were informed about the aim and methods of the study and their oral and written informed consent was obtained.

Study sample

The sample was comprised of 204 older patients who underwent TKR or THR and agreed to participate in the study. Inclusion criteria required patients to be over 65 years, undergoing their first THR or TKR, and to speak Turkish. The patients who were excluded from the study had a score lower than 13 for Mini Mental State Examination, or were diagnosed with a psychiatric disease, were undergoing active cancer treatment or had been admitted to the intensive care unit after surgery. Sample size was calculated by using G*Power 3.1.2 software. The study required a minimum sample size of 194 participants and was calculated with a multiple regression based on a probability of $\alpha = 0.05$, effect size of 0.60, and a power level of $1 - \beta = 0.8$. We planned to oversample by 10 patients. A total of 204 patients were enrolled in the study. If patients were able to meet the clinical and/or the cognitive requirements to participate in the study, they gave their written informed consent. Of 290 potential participants identified, 81 (27.9%) were excluded. Reasons were due to a lower than 13 score for the Mini Mental State Examination ($n = 21$), psychiatric disease ($n = 5$), undergoing active cancer treatment ($n = 2$), and admission to the intensive care unit after surgery ($n = 53$). An additional $n = 5$ (1.03%) declined to participate.

Data collection

Data were collected during face-to-face interviews after the patients were first mobilized and when they lay down on bed. After THR and TKR, 3X1000 mg (Paracetamol) and 3X75 mg (Diclofenac Sodium) were routinely used in the orthopedic clinic. The patient's pain was assessed every hour for eight hours after surgery and then every four hours. If pain was present, mild opioids were administered intramuscularly. In this study, mobilization was carried out when the patients had no pain.

Measures

Data were collected by using The Patient Descriptive Characteristics Form, The Visual Analogue Scale (VAS), The Fear of Falling Scale and The Hospital Anxiety and Depression Scale. After a review of the current literature by the researchers, the Patient Descriptive Characteristics Form was prepared.^{23,28-30} The form consists of five questions about age, gender, educational status, the first postoperative mobilization time (days), types of replacement surgeries (TKR or THR), and previous fall status.

The Visual Analogue Scale (VAS) was developed by Price et al. (1983) and measures pain severity.³¹ There are two ends of the scale named differently on vertical and horizontal lines measuring 10 cm (0 corresponding to no pain and 10 corresponding to the most severe pain). The horizontal line was used in this study. The patients were asked to mark the point on these lines corresponding to pain severity they have. The distance between the marked point and the lowest end on the lines (0 = no pain) was measured and the numerical value found designated the patients' pain severity.

The Fear of Falling Scale is composed of a single-item Likert question that asks participants to indicate on a four-point scale how fearful they are of falling: 1 = not afraid, 2 = slightly afraid, 3 = moderately afraid and 4 = very afraid. The scale has been used in many surveys, especially in patients with hip fractures.^{23,28-30,32}

The Hospital Anxiety and Depression Scale (HADS) was developed by Zigmond and Snaith in 1983. The objective of the scale was not to make a diagnosis but to determine risk of anxiety and depression in people with physical conditions. The HADS consists of two subscales, HADS-A (Anxiety) and HADS-D (Depression), each with seven items measuring anxiety and depression respectively.

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