

# Postoperative Pain Self-Management Behavior in Patients Who Underwent Total Knee or Hip Arthroplasty

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## ABSTRACT

The self-management of acute postoperative pain is not well researched. This cross-sectional study investigates postoperative pain and pain self-management behavior. We recruited 127 patients who underwent total knee or total hip arthroplasty in an acute care hospital. We measured postoperative pain intensity and pain self-management behavior for three postoperative days. The results showed that the participants experienced mild and moderate pain intensity and perceived moderate to severe pain interference, which influenced their mood, sleep patterns, ability to walk, and performance of general activities and rehabilitation exercises. Female participants reported significantly higher pain intensity and lower pain self-management behavior; highly educated participants reported significantly lower pain intensity and higher self-management behavior. Pain intensity scores had a significant negative correlation with the total self-management behavior score ( $r = -0.719$ ,  $P < .01$ ). Health care professionals must consider patients' demographic characteristics when providing education and support regarding pain self-management for postoperative pain control. *AORN J* 105 (April 2017) 355-364. © AORN, Inc, 2017. <http://dx.doi.org/10.1016/j.aorn.2017.02.001>

Key words: *postoperative pain, self-management, pain control, total knee arthroplasty, total hip arthroplasty.*

Effective postoperative pain management is an important indicator of quality postoperative care and is conducive to adequate rest, earlier postoperative mobilization, and the reduction of postoperative complications. Further, it can reduce hospitalization duration and costs.<sup>1</sup> To control postoperative pain, clinicians use a variety of pharmacologic interventions, such as opioid analgesics, patient-controlled analgesia, intrathecal anesthesia, epidural analgesia, and continuous local anesthetic (block) infusions.<sup>2,3</sup> Some nonpharmacologic interventions, such as

cooling and compression, relaxation, and music therapy, may also be effective in controlling acute pain.<sup>4-7</sup> These pharmacologic and nonpharmacologic interventions are usually initiated by health care professionals.

Pain is a multidimensional subjective experience; different people have different pain thresholds. The Joint Commission's standards indicate that all patients have the right to adequate pain management, and The Joint Commission advocates for a patient-centered approach.<sup>8</sup> Patients play an important role in

managing their pain.<sup>9</sup> The collaboration between patients and the health care team is essential to achieve optimal pain management outcomes.<sup>10</sup>

Total knee arthroplasty (TKA) and total hip arthroplasty (THA) are common major orthopedic surgeries. Despite improvements in pain medication, many patients who have undergone TKA or THA still experience high levels of unrelieved acute postoperative pain.<sup>11</sup> The health care team may not always recognize that the patients' ability to self-manage their pain is important.

## DESCRIPTION OF THE PROBLEM

Many studies on pain self-management have focused on chronic pain. There are few evidence-based pain self-management programs for acute postoperative pain,<sup>12,13</sup> and there is a paucity of studies focused on acute pain self-management during the period after major surgeries (eg, TKA, THA) in Asia and especially in China. To build a program for acute pain self-management, we need to understand not only how patients perceive acute pain self-management, but also the relationship between pain intensity and pain self-management behavior. This study aimed to fill this knowledge gap.

## STUDY PURPOSE

The purposes of this study were to

- investigate postoperative pain and pain self-management behavior in Chinese patients after TKA or THA and
- examine the correlation between postoperative pain and pain self-management behavior.

We hypothesized that there would be a significant negative correlation between pain intensity scores and self-management behavior scores. This study provides a deeper understanding of patients' perception of pain self-management behavior and its relationship with pain intensity. Understanding this relationship will help clinicians develop more effective strategies to promote the self-management of acute pain.

## LITERATURE REVIEW

In the context of chronic disease management, self-management has been defined as

*patients' positive efforts to oversee and participate in their health care to optimize health, prevent complications, control symptoms, marshal medical resources, and minimize the intrusion of the disease into their preferred life-styles.*<sup>14(p386)</sup>

The self-management of acute pain focuses on the importance of patients' own efforts in controlling pain rather than depending on external agents.

Practice guidelines and empirical research related to self-management have been established for many chronic health conditions. Self-management training with regular follow-up could enhance patients' active participation in disease management, leading to improved physical and psychological well-being,<sup>15</sup> reduced hospitalization days, and reduced medical costs for patients.<sup>16</sup> Pain self-management training for patients with osteoarthritis who were waiting for joint replacement surgery resulted in patients possessing a greater number of skills that were effective in controlling their chronic pain.<sup>13</sup> Pain self-management training can increase patients' pain self-management efficacy and improve their perception of health outcomes.<sup>12</sup>

Patients' self-management skills can be influenced by their knowledge, behavior, and attitude toward pain self-management. Pain self-management training can enhance patients' beliefs about the importance of their actions and their ability to control pain.<sup>17,18</sup> Pain self-management training can also effectively reduce pain intensity, improve adherence to pain medication, and improve quality of life.<sup>19</sup> The available evidence supports the feasibility and effectiveness of pain self-management training for management of chronic, persistent pain.

Support from health care professionals can influence a patient's pain self-management ability.<sup>20</sup> Together with the health care team, patients can play an important role in acute pain control. There are few available evidence-based pain self-management programs for acute postoperative pain, however. Clinicians need to know how patients perceive acute pain self-management to develop strategies to promote acute pain self-management.

## CONCEPTUAL FRAMEWORK

Supporting patients' self-management of their health conditions is one of the core facets of patient-centered care.<sup>21</sup> Patient-centered care places people at the forefront of their health and care<sup>22</sup> with the goal of empowering patients to become active participants in their care.<sup>23</sup> Patient-centered care acknowledges the importance of supporting patients to develop their knowledge, skills, and confidence to effectively manage their own health and health care.<sup>24</sup> When patients play an active role in postoperative pain management, they are more likely to adhere to their treatment plans<sup>25</sup> and engage in positive health behaviors that contribute to better pain control and health outcomes.<sup>26</sup>

## METHODS

We used a cross-sectional design for this study. We conducted this study in three orthopedic units (150 beds) that receive

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