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Surgery patients' perspectives of their role in postoperative pain: A scoping review

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ABSTRACT

Background: Post-operative pain is a major factor in surgical recovery. There is evidence that pain remains undermanaged. Complications related to the undermanagement of acute pain can increase length of stay and contribute to readmission and the development of chronic pain. It is well acknowledged that pain assessment is critical to pain management and that self-report of pain is the gold standard. As a result, patients play a central role in their own pain management. A preliminary review of the literature failed to provide a clear or consistent description of this key patient role.

Objective: A scoping review was conducted with the objective of reviewing literature that described adult patients' perspectives or highlighted the adult patient's role in post-operative pain management, including assessment. Understanding patients' attitudes toward their roles in pain management through a scoping review of the current literature is critical for informing research and improvements in post-operative pain management.

Design: Scoping review.

Methods: The databases searched for the review included CINAHL, MEDLINE, PubMed, and SCOPUS (ending May 2022). Thematic analysis, using the methodology of Arksey and O'Malley, was applied to the records identified.

Results: Of the 106 abstracts initially identified, 26 papers were included in the final analysis. Two major themes identified through thematic analysis were *attitudes toward pain and pain management*, with the subthemes of *patient expectations* and *beliefs and desire to treat*; and *care and communication*, with the subthemes of *pain assessment* and *education*.

Conclusions: This paper provides one of the first known comprehensive scoping reviews of surgical patients' perspectives of their role in pain management, including assessment, and offers an important global awareness of this patient role. The findings suggest that improved understanding of patients' perspectives of their roles in pain assessment and treatment is critical to improving post-operative pain management. Engaging patients as partners in their care can facilitate enhanced communication and improving congruence in pain assessment and treatment decisions. The complex nature of patients' beliefs, expectations, and subjective experiences of pain present challenges for health care practitioners. These challenges can be met with enhanced education for patients, respect for patients' beliefs and expectations, and the provision of dignified care.

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What is already known

- Post-operative pain remains undermanaged.
- Self-report is the gold standard for pain assessment.
- Patients' perceptions of their roles in pain management are inadequately defined.

What this paper adds

- Patients' perspectives of their roles in pain management, including assessment, are influenced by their experiences and beliefs.
- Patients and nurses benefit from a mutual understanding of pain management.
- Patient education and nursing care contribute to patients' overall satisfaction with pain control.

1. Background

Effective pain management has been regarded as a human right (Brennan et al., 2007; Tawil et al., 2018). Post-operative pain is one of the most common causes of pain (O'Donnell, 2018), with more than 80% of post-operative patients experiencing some degree of pain (Meissner et al., 2018) and up to 75% reporting moderate to severe intensity of pain (Gan et al., 2014b). It is widely acknowledged that undermanaged post-operative pain can lead to complications, such as decreased lung function, sleep disturbances, infection, delayed mobility, myocardial infarction, and increased morbidity and mortality (Bach et al., 2018; Eshete et al., 2019; Tawil et al., 2018). These pain-related complications can contribute to increased lengths of stay in the post-operative period and readmissions to hospital post-discharge (Belay Bizuneh et al., 2020; Ouellette et al., 2019).

Despite advances in anaesthetic approaches and pharmacological and adjunctive treatments, patients still experience unacceptably high levels of post-operative pain around the world (Gan et al., 2014a; Rawal, 2016; Scher et al., 2018; Wooldridge and Brannney, 2020). Growing evidence has established a connection between high levels of acute post-operative pain and the development of persistent postoperative pain, considered a type of chronic pain (Baratta et al., 2014; Bokhari et al., 2012; Chapman et al., 2011). Therefore, management of acute pain in the post-operative period is of paramount importance to reduce the development of other complications, including chronic pain, and to improve post-operative patient outcomes (Gan, 2017).

It has been widely acknowledged that a foundational step in providing adequate pain management is to use a standardized and accurate pain assessment strategy (Wooldridge and Brannney, 2020). This crucial first step in pain management has been explored in the literature, often independently of the treatment phase (Gélinas et al., 2021; Hirsh et al., 2009; Topham and Drew, 2017). This method of systematically gathering information has been variable in both experience and application by practitioners.

Patients' self-reports of pain remain the gold standard for pain assessment (Van Dijk et al., 2012). Patients are expected to report their pain according to their own complex and subjective experiences of pain. Numerous validated pain assessment tools have been identified in the literature. These tools were developed with the goal of facilitating communication between patients and health care providers (Birkedal et al., 2021; Rijkenberg et al., 2017; Tong et al., 2018). The intent of pain assessment is to enable accurate documentation of pain and effective treatment choices by practitioners (Lapkin et al., 2021). While many health care professionals may play a role in pain assessment, nurses are the most frequent health care providers involved in pain assessment, based on their professional role and the time they spend providing patient care (Lauzon Clabo, 2008).

Patients' involvement in care has been recognized as critical to improving outcomes and maximizing health care resources (Blumenthal-Barby, 2017; Mazer et al., 2020). In addition, understanding patients' perspectives of pain management, including pain assessment, is crucial to maximizing the application of assessment tools and the effectiveness of treatment strategies (Kuperberg and Grubbs, 1997). Despite this, a preliminary review of the literature revealed a dearth of papers that examined the patients' perspectives on their role in pain management. While it is acknowledged that post-operative pain is a factor across the spectrum of human development, the intent of this review was to explore the adult patient role. Therefore, the aim of this review was to assess current knowledge in the existing literature about adult patients' perspectives of their role in post-operative pain management.

2. Methods

A scoping review is indicated when there is a substantive amount of information that is not homogenous and is very complex, as a precursor to a systematic review, or when there are barriers to conducting a systematic review (Duhn et al., 2020). The intent of a scoping review is to develop an understanding of the scope and depth of the available literature in order to identify gaps for future research (Arksey and O'Malley, 2005). Given the diverse state of the literature regarding patients' perspectives of their role in pain management and the general aims of this study, the scoping review was an appropriate methodological approach for this research.

2.1. Search strategy

A structured search was conducted using the following databases: Cumulative Index of Nursing and Allied Health Literature (CINAHL), Medline Complete, PubMed Complementary Index, and SCOPUS. The specific search terms used were: (surgery patient OR surgical patient) AND (attitude OR perspective OR belief OR patient role) AND (post-operative OR post-surgical) pain assessment AND

management). The following filters were applied: adult population, English language, peer-reviewed, and published between January 2012 and May 2022. This time frame was selected to allow a broad search for seminal studies while ensuring the inclusion of more recent advancements and developments. The structured literature search yielded a total of 106 articles. After removing duplicates, 81 articles were screened for inclusion, and 51 of these articles were selected for manual review. Manual review was conducted and decisions for exclusion were made by the first author (LW), as part of the fulfillment of her master's thesis. Exclusion criteria were as follows: not pertaining to adult patients, not pertaining to post-operative pain, or not focused on patients' perspectives of pain assessment or management. A total of 26 articles were identified (LW) and confirmed (DM) for inclusion. A variety of types of studies were accepted. In keeping with the methods of other scoping reviews, the quality of the studies was not assessed (Arksey and O'Malley, 2005; Fig. 1).

2.2. Data abstraction and collation

Arksey and O'Malley (2005) identified an "analytical descriptive" method of analysis, which involves reviewing articles for critical information, such as authors, country of study, aim, surgery type studied, methods, and results, and situating this information into a table to further scrutinize their ability to meet the aims of the scoping review. Articles were subjected to further review and were grouped thematically. The primary author (LW) completed the initial thematic analysis to identify patterns and trends, with

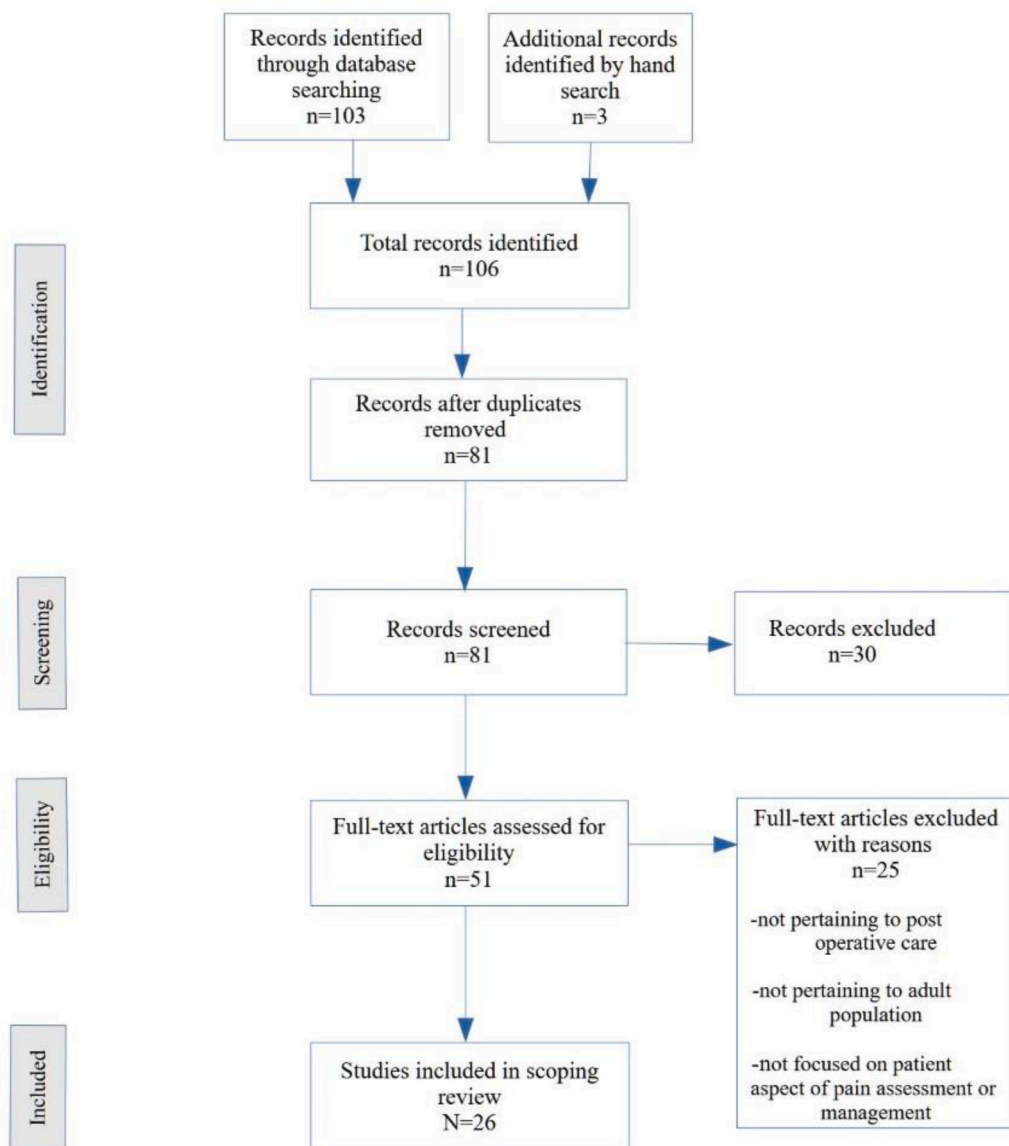


Fig. 1. PRISMA-Sc-R flow diagram (Haddaway et al., 2022).

subsequent validation by the second author (DM), who was the primary author's academic advisor. Proposed themes were reviewed and confirmed by the remaining authors (RA and ED).

3. Results

3.1. Study characteristics

Of the 26 articles included in the final review, 10 were qualitative (most of which employed a phenomenological approach), 10 were quantitative (most of which utilized a variety of questionnaires), four were mixed methods, and two were secondary analyses of existing data. Qualitative studies were well represented in the methodology of the included papers, which resonated with the goal of this research. The qualitative studies were focused on hearing patients' voices and acknowledging their perspectives, attitudes, and roles. Multiple types of surgery were represented in the literature, with a focus on orthopaedic, general, spine, and cardiac (Table 1). The included literature was published between 2013 and 2021 and incorporated diverse global representations of countries with higher and lower levels of resources (Table 2).

3.2. Synthesis of results

Of the 26 articles included in the final scoping review, only one paper explicitly used the term 'patient role'. However, this study focused on the extent to which patients desired to be active in their pain control and did not explore the definition of the role nor the factors that influenced role development (McTier et al., 2014). Additionally, 25 articles offered implicit data on the patient's role. Measures of patient participation and patient satisfaction were the dominant outcome metrics reported in the reviewed studies. Core aspects of the literature that met the study aim are summarized in Table 2.

Summary of Articles

3.3. Thematic analysis

Despite the explicit gap in the reviewed literature in providing clearly defined patient pain roles, two main themes and four subthemes related to patients' perspectives of their role in pain assessment and management emerged from the data: (1) *Attitudes toward pain and pain management* (subthemes: *Patient expectations* and *Beliefs and desire to treat*); and (2) *Care and communication* (subthemes: *Pain assessment* and *Education*). Findings from the thematic analysis of the literature are presented with respect to the identified themes and subthemes (See Fig. 2).

3.4. Major theme: attitudes toward pain and pain management

A key theme that emerged from the data was related to patients' attitudes toward pain and pain management. Attitude has been defined as "cognitive, affective, and behavioural and is a response to a stimulus" (Altmann, 2008, p.150). Direct measurement of attitude is not possible. Attitude can be observed only through an individual's behaviors and actions. Attitudes are influenced by experiences, circumstances, and situations and may be positive or negative, conscious or unconscious. In a similar way to the experience of pain, individuals may choose to display or hide their attitudes toward a given situation and may be unaware of how these attitudes influence their reaction to a specific circumstance (Altmann, 2008).

Aspects of pre-operative preparation, such as wait times for surgery, have been postulated to impact patients' attitudes toward post-operative pain and its management (Angelini et al., 2018). Patients may experience social isolation while waiting for surgery, due to difficulty managing pain and symptoms, which may negatively impact their attitudes toward post-operative pain management and coping (Angelini et al., 2018). Patients' beliefs regarding the safety and efficacy of treatment modalities can also influence their attitudes toward pain management (Cogan et al., 2014). The current literature review identified two subthemes associated with patients' attitudes toward pain and pain management: (a) *patient expectations* and (b) *beliefs and desire to treat*.

3.4.1. Subtheme: patient expectations

Prior experience with post-operative pain has been shown to influence future reactions to painful stimuli (Accardi-Ravid et al., 2020; Angelini et al., 2018; Dagyan et al., 2021; Egan et al., 2020; Henningsen et al., 2018). This association is concerning, as many surgical patients experience under-managed pain (Willingham et al., 2021). In one study of 247 surgical patients, more than half suffered with severe pain on the first post-operative day (Köse Tamer and Sucu Dağ, 2020). Reports of moderate to severe post-operative pain are supported throughout the literature (Ögüt and Sucu Dağ, 2019; Werner and Kongsgaard, 2014; Zoëga, 2017).

High levels of pain in post-operative patients have been reported to contribute to negative expectations and anxiety (Dagyan

Table 1

Surgical focus of included literature: number of studies.

Orthopaedic surgery	general surgery	obstetric surgery	cardiac surgery	neuro-surgery	urological surgery	mixed or not defined surgery	spine surgery	recon-structive surgery
6	6	3	3	1	1	8	2	1

Table 2

Summary of included studies and their core aspects related to patients' perspectives of their role in pain management.

Study, Country/ Area	Aim of study	Population, Sample	Methods	Analysis/outcome measures	Core aspects related to patients' perspectives of their role in pain management
Accardi-Rivard et al. (2020), USA ¹	Describe patients' pre- and post-operative pain experiences from their perspective	Individuals undergoing spine surgery, <i>N</i> = 14, (8 males, 6 females)	Telephone interview with open ended questions developed by research team based on literature	Thematic analysis of interviews	<ul style="list-style-type: none"> • Involvement decreases anxiety • Expectations contribute to anxiety • More information relieves anxiety • Anxiety over potential pain • Post-operative pain remains intense.
Angelini et al. (2018), Sweden	Explore and describe patients' experiences of pain and pain management	Individuals undergoing spine surgery, <i>N</i> = 12, (7 males, 5 females)	Focus group with semi structured interviews with patients to explore experiences following spine surgery (within a 5-week post-operative window)	Themes were determined through qualitative content analysis	<ul style="list-style-type: none"> • Information assists with pain relief, is a "pain killer" • Expectation for pain more intense than surgeon believes they will experience • Patient pain is intense and affects all aspects of their lives
Bjornnes et al. (2017), Norway	Examine patients' pain characteristics and concerns about pain medications	Individuals undergoing cardiac surgery, <i>N</i> = 416, (322 males, 94 females)	Randomized control trial of an educational booklet on post-operative pain control. Telephone survey to complete Brief Pain Inventory	Primary outcome was worst pain intensity, pain characteristics and medication usage	<ul style="list-style-type: none"> • Educational intervention did not decrease worst pain intensity • Knowledge gaps in medication safety and efficacy - More information for patients to combat misinformation about treatment methodology is needed
Bizuneh et al. (2020), Ethiopia	Assess level of patients' satisfaction and identify factors that could impact postoperative pain management	Individuals undergoing thoracic, abdominal, genitourinary, and orthopaedic surgery, <i>N</i> = 418, (139 males, 279 females)	Retrospective chart review, interview, and semi-structured patient questionnaire	Patient satisfaction measured on a five-point Likert scale	<ul style="list-style-type: none"> • Overall satisfaction low (72.2%) compared to other studies • Satisfaction related to responsiveness of staff to analgesia requests • Novel finding: lower anaesthesia risk classification related to higher satisfaction
Cogan et al. (2014), Canada	Describe the beliefs and attitudes of the cardiac surgery patient regarding pain management (medication)	Individuals undergoing cardiac surgery, <i>N</i> = 379, (250 males, 129 females)	Prospective questionnaire-based: Barriers Questionnaire and Screening Tool for Addiction Risk	Responses to barriers and Screening Tool and Addiction Risk tool were reviewed to determine belief and attitudes regarding addiction and side effect risk associated with pain treatments	<ul style="list-style-type: none"> • Knowledge gaps exist related to medication safety and effectiveness - More information for patients required to reduce risk associated with misinformation
Craig et al. (2015), USA	Understand the connection between pain management and patient satisfaction	Mixed surgical population, surgery not differentiated. <i>N</i> = 31,106, (11,199 males, 19,907 females)	Review of publicly reported patient experience surveys for aspects of satisfaction	Patient satisfaction regarding aspects of care such as degree to which pain was controlled and impact of care provided	<ul style="list-style-type: none"> • Nursing care, assessment and communication contributed to satisfaction

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Table 2 (continued)

Study, Country/ Area	Aim of study	Population, Sample	Methods	Analysis/outcome measures	Core aspects related to patients' perspectives of their role in pain management
Daggyaran et al. (2021), Denmark	Understand patient satisfaction with the erector spinae block for pain control	Individuals undergoing general surgery, not differentiated. <i>N</i> = 11, (4 males, 7 females)	Phenomenological semi-structured interviews, with thematic analysis	Themes identified from interviews	<ul style="list-style-type: none"> • Expectations led to anxiety around pain • Pain impacts all aspects of life • Information helped decrease anxiety and improve perceived control
Egan et al. (2020), USA	Evaluate perception and experience of pain in patients undergoing mastectomy and reconstruction	Individuals undergoing reconstructive breast surgery. <i>N</i> = 100, (100 females)	A researcher developed prospective survey was administered pre-operatively and post-operatively	Relationship between attitudes to pain control as compared to opioid use	<ul style="list-style-type: none"> • Pain expectations contributed to anxiety and opioid use post-operatively
Erikson et al. (2016), Sweden	Describe patients' experiences and actions when describing post-operative pain	Individuals undergoing general or orthopaedic surgery. <i>N</i> = 25 (12 males, 13 females)	Semi-structured interviews days 1–7 post-operatively	Thematic analysis	<ul style="list-style-type: none"> • Expectations of pain depended on different understandings of level of pain relief possible • Patients did not understand how pain ratings were used by staff • Patients perceived they were understood if staff was responsive • Patients actively sought information from staff and other patients for self-care strategies for relief
Erikson et al. (2014), Sweden	Describe how patients perceive the use of the numeric rating scale in post-operative pain assessments	Individuals undergoing general and orthopaedic surgery, <i>N</i> = 25, (12 males, 13 females)	Semi-structured interviews on postoperative day 1 and 5	Thematic analysis	<ul style="list-style-type: none"> • Patients perceived Numeric Rating Scale facilitated communication with health care providers. • Participation was linked to using the Numeric Rating Scale
Foust-Winton et al. (2021), USA	Describe experience of pain management while hospitalized	Individuals undergoing neurosurgery, <i>N</i> = 27, (11 males, 15 females)	Qualitative, descriptive semi-structured interviews	Thematic analysis	<ul style="list-style-type: none"> • Communication with staff critical to how patients were able to manage their pain
Henningsen et al. (2018), Denmark	Determine patient perspective of the acceptability of nerve blocks for pain control after surgery for ankle fracture	Individuals undergoing orthopaedic (ankle) surgery. <i>N</i> = 13, (4 males, 7 females)	Semi-structured interviews with thematic analysis	Thematic analysis	<ul style="list-style-type: none"> • More information may assist in understanding treatment methods and reduce anxiety • Expectations regarding pain and relief by the block differed depending on prior experience
Kaptain et al. (2016), Denmark	Explore participation of spine surgery patients in post-operative pain assessment in a recovery unit	Individuals undergoing spine surgery. <i>N</i> = 15, (7 males, 8 females)	Semi-structured interviews with phenomenological analysis	Thematic analysis	<ul style="list-style-type: none"> • Sedation and new pain sensations made participation in assessment challenging • Frequency and nature of assessment from

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Table 2 (continued)

Study, Country/ Area	Aim of study	Population, Sample	Methods	Analysis/outcome measures	Core aspects related to patients' perspectives of their role in pain management
Komann et al. (2021), European Union	Examine the indicator “desire to receive more pain treatment” in relation to pain intensity and quality of pain treatment programs	Mixed surgery population not differentiated. <i>N</i> = 79,996, (34,790 males, 45,206 females)	Secondary analysis of data from the Quality in Pain Service registry	Examination of the outcome “desire to receive more treatment” in relation to pain intensity	<p>staff decreased anxiety</p> <ul style="list-style-type: none"> Desire to receive more pain treatment was influenced by pain interference rather than intensity Information equated to involvement
McTier et al. (2014), Australia	Explore patient participation in pain management during hospitalization	Individuals undergoing cardiac surgery, <i>N</i> = 98, (64 males, 34 females)	Pre-operative interview and post discharge interview as well as focus groups for nursing staff and naturalistic observations of pain assessment	Examination of patient outcomes such as intent to report pain, knowledge of treatments	<ul style="list-style-type: none"> Information acquired during admission showed good uptake Nursing had limited time and interactions but focused on information and assessment with good uptake
Milosevic et al. (2021), United Kingdom	Determine if nerve catheter was an acceptable treatment of post-operative pain	Individuals undergoing orthopaedic (amputation) surgery, <i>N</i> = 14, (10 males, 4 females)	Qualitative interview with patients who received local anaesthetic through the catheter and those who received placebo	Acceptability of the pain management modality and the reasons for this indication	<ul style="list-style-type: none"> Patients have worries about side effects and risks associated with pain medications Information about the nerve block decreased anxiety
Mutiba et al. (2020), United Kingdom	Describe patient expectations related to pain and explore the meaning of satisfaction with pain management	Individuals undergoing general surgery, not differentiated. <i>N</i> = 10, (6 males, 4 females)	Semi-structured interviews exploring satisfaction with pain management	Thematically coded	<ul style="list-style-type: none"> Satisfaction was influenced by nursing empathy and caring communication more than ability to have Numeric Rating Scale score decreased
Pius et al. (2020), USA	Describe the patient experience with pain control after discharge	Mixed surgery, population not differentiated. <i>N</i> = 1027, (441 males, 586 females)	Researcher developed questionnaire administered via telephone completed 1 week after discharge	Satisfaction scores and thematic coding to augment understanding of responses regarding pain control, satisfaction with pain control and satisfaction with prescription	<ul style="list-style-type: none"> Patients worried about medications side effects and efficacy Most were satisfied with pain management -no specific factors given Knowledge gap -more information needed to assist with medication barriers
Ramia et al. (2017), Lebanon	Describe patients’ perception toward pain management and determine overall satisfaction	Individuals undergoing orthopaedic or obstetrical surgery. Orthopaedic <i>N</i> = 177, (85 males, 92 females), Obstetric <i>N</i> = 119 (119 females)	Two questionnaires developed for each surgical population to explore pain management perceptions. Questionnaires were tested in a pilot study before use in this study to ensure validity and clarity of the questions.	Satisfaction with pain treatment and assess patients pain intensity	<ul style="list-style-type: none"> Most were satisfied overall- Patients who received more information about treatment and participation about assessment were more satisfied Novel finding- Being single was a predictor of higher dissatisfaction
Schwenkglens et al. (2014), European Union	Improve understanding of factors influencing patient satisfaction	Mixed surgery population not differentiated. Records pulled from PAIN—OUT registry <i>N</i> =	Secondary analysis of data from PAIN—OUT registry to determine patient satisfaction. This	Patient-reported satisfaction and influencing factors such as: interference	<ul style="list-style-type: none"> Patient satisfaction is influenced by caregiver

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Table 2 (continued)

Study, Country/ Area	Aim of study	Population, Sample	Methods	Analysis/outcome measures	Core aspects related to patients' perspectives of their role in pain management
	with pain management	18,009, (9178 males, 8831 females)	registry uses the self- reported International Pain Outcome Questionnaire	with sleep and adverse effects of pain treatment	relationship, adverse events, and involvement in care
Tamer et al. (2020), Turkey	Investigate the Turkish surgical patients' surgical experience	Individuals undergoing orthopaedic, urological, neurosurgical, or general surgery, <i>N</i> = 141, (79 males, 62 females)	Face to face completion of the Strategic and Clinical Quality Indicators Post-operative Pain Questionnaire	Pain intensity and patient related outcomes of pain management	<ul style="list-style-type: none"> High levels of satisfaction with the quality of pain management were seen but low ratings for education regarding pain relief and nursing care
Tawil et al. (2018), Lebanon	Evaluate patient satisfaction with pain management and identify barriers	Individuals undergoing obstetrical, gynaecological, orthopaedic or cardiac surgery, <i>N</i> = 183, (74 males, 109 females)	Face to face completion of a questionnaire developed by the researcher as a modification to the American Pain Society Outcomes Questionnaire and Barriers Questionnaire, and Numeric Rating Scale	Patient satisfaction and patient related outcomes such as pain intensity and pain interference	<ul style="list-style-type: none"> Pain was prevalent and inconsistent with over 70% experiencing pain Satisfaction was related to responsiveness by staff
Van Boekel et al. (2017), Netherlands	Examine the relationship between the Numeric Rating Scale and other methods of assessment and acceptability of levels of intensity as compared to functional impact	Surgical population not differentiated. <i>N</i> = 9082, (4995 males, 4087 females)	Comparing the acceptability of movement evoked Numeric Rating Scale and activity	Pain intensity and ability to complete activities necessary for post-operative recovery	<ul style="list-style-type: none"> Patient participation in pain assessment goes beyond the Numeric Rating Scale and pain interference and patient desire for treatment must be considered
Van Dijk et al. (2015), Netherlands	Describe the relationship between pain intensity and the patients desire for opioids	Surgical population not differentiated. <i>N</i> = 1084, (560 males, 524 females)	Pain intensity was assessed via Numeric Rating Scale, and patients were asked if they desired opioids	Numeric Rating Scale values and statements of desire for opioids or more opioids	<ul style="list-style-type: none"> Patients need to be more involved in assessment than only providing a Numeric Rating Scale to determine desire for treatment Knowledge gap may require more information to address barriers related to medications
Vu et al. (2021), Vietnam	Examine patient participation in pain management and its impact on the pain experience	Individuals undergoing otorhinolaryngological, oncological, trauma, orthopaedic, plastic, neurological, spine or general surgery. <i>N</i> = 245, (128 males, 117 females)	Hospital based survey and interview	Satisfaction and themes from interview	<ul style="list-style-type: none"> More information about postoperative treatment as needed Satisfaction was high and influenced by level of participation
Zoega et al. (2014), Iceland	Assess pain in hospitalized patients, their participation in pain management, and their satisfaction with care	Individuals undergoing urological, cardiac, vascular, plastic, orthopaedic or general surgery. <i>N</i> = 308, (152 males, 155 females)	Numeric Rating Scale and American Pain Society Outcome Questionnaire -Revised	Satisfaction and Numeric Rating Scores	<ul style="list-style-type: none"> Pain intensity remains a problem Novel finding - Patient participation was associated with spending less time in severe pain and overall better relief and satisfaction

¹ United States of America.

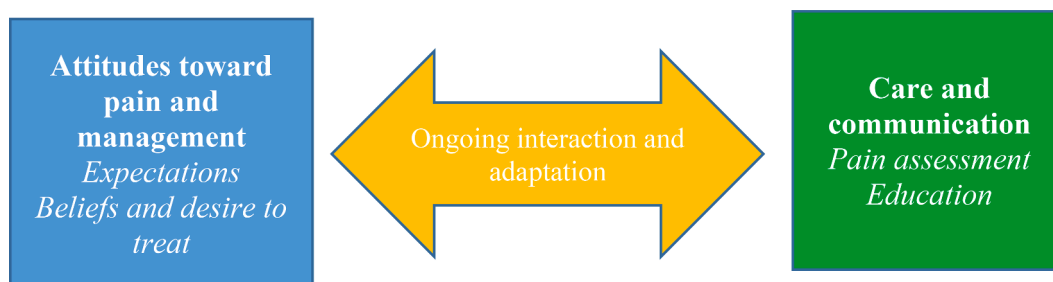


Fig. 2. Interaction of themes identified related to patient perspectives.

et al., 2021; Henningsen et al., 2018; Köse Tamer and Sucu Dağ, 2020). For example, patients who had expectations of high pain intensity or inadequate relief due to prior pain experiences were five times more likely to report increased anxiety when compared to patients whose pain was previously well-managed (Egan et al., 2020). Another study of patients undergoing hemicolectomy surgery found that the expectation of a poor prognosis, in addition to anticipated post-operative pain, produced significant worry amongst patients (Dagyan et al., 2021). Anxiety related to both realistic and unrealistic expectations could further complicate patients' pain management. On the other hand, a paradoxical perspective of patients' expectations and preoperative pain was identified in a study of patients undergoing spine surgery, a type of surgery associated with high levels of debilitating pain (Accardi-Ravid et al., 2020). Many patients undergoing spine surgery had the expectation that the surgery would improve their level of suffering, providing an expectation of relief (Accardi-Ravid et al., 2020; Angelini et al., 2018). This type of positive expectation can serve as justification for patients to proceed with surgery (Angelini et al., 2018).

In addition, research has shown that patients can develop expectations based on the experiences of their friends and family as well as their surgical care team (Accardi-Ravid et al., 2020; Henningsen et al., 2018; Mubita et al., 2020). Therefore, the development of expectations and their impact on patients' pain experiences is a complex and multifactorial process. There is consensus in the existing literature that patients' expectations of pain influence their levels of anxiety and quality of recovery. The following section reports the substantial variety of opinions in the literature regarding the impact of patients' perceptions of pain, level of participation in their own care, and impressions of their overall care.

3.4.2. Subtheme: beliefs and desire to treat

The development of beliefs regarding treatment modalities for post-operative pain is a complex interaction of psychosocial aspects. Beliefs are "convictions based on truth or reality" that arise from a variety of sources and modulate or influence a person's expectations, attitudes, and decisions (Merriam-Webster, 2022). For instance, societal factors are known to contribute to patients' understandings of the potential risks of opioid use (Pius et al., 2020). Cogan et al. (2014) conducted a study with 379 surgical patients and found that over one-quarter of the patients believed that addiction to pain medication could easily occur and that treatment with pain medication should be reserved for worst case circumstances. These findings highlighted the fact that misconceptions can develop through various mechanisms and serve as barriers to effective pain management (Cogan et al., 2017). Similar findings were noted in several studies that examined patients' fears of addiction and other perceived opioid-related risks, such as nausea, vomiting, and drowsiness (Angelini et al., 2018; Bjørnnes et al., 2017; Egan et al., 2020; Milosevic et al., 2021; Ramia et al., 2017a; Tawil et al., 2018; van Dijk et al., 2015).

Patients' beliefs influenced not only their desire for additional pain management, but also affected their perceptions of pain assessment. A study that examined the sociocultural influences of patients' beliefs found that over 30% of patients expressed that "good people should avoid talking about pain" (Tawil et al., 2018, p.5). This was not a unique finding. In another study, over one-quarter of cardiac patients expressed that the primary reason they did not report pain was to avoid being viewed by care providers as 'complaining' (McTier et al., 2014). In addition, some patients expressed a desire to be viewed as having a high pain tolerance (Henningsen et al., 2018). Others indicated they were concerned that reporting a high level of pain on the numeric rating scale could lead clinicians to misperceive their intentions and suspect they were either attention- or medication-seeking (Eriksson et al., 2014).

3.5. Major theme: care and communication

The literature has supported that patients view empathetic delivery of care and good communication as critical factors for successful pain management (Craig et al., 2015; Mubita et al., 2020; Tawil et al., 2018). Nurses have been recognized as the clinicians most frequently involved in pain assessment and management (Eriksson et al., 2014; Kaptain et al., 2017a; McTier et al., 2014). Many of the studies included in this review demonstrated that nurses had a unique ability to establish rapport through communication, even in challenging settings like post-operative care, where patient contact is infrequent and brief (Foust Winton et al., 2021; Kaptain et al., 2017a). A sense of rapport with nurses was linked to feelings of calm and control amongst patients and was noted to influence patients' overall levels of satisfaction (Angelini et al., 2018; Foust Winton et al., 2021; Kaptain et al., 2017b; Schwenkglens et al., 2014; Tawil et al., 2018; Vu et al., 2021; Zoëga et al., 2014). The two subthemes that emerged from the major theme of *care and communication* were: (a) *pain assessment* and (b) *education*.

3.5.1. Subtheme: pain assessment

Pain assessment has been widely acknowledged as a crucial and foundational component of pain management (Bruckenthal and Simpson, 2016; Gordon et al., 2016; Wooldridge and Branney, 2020). Validated tools have been developed and widely used to assist patients to self-report pain, which is considered the gold standard methodology for pain assessment (Eriksson et al., 2014; Van Dijk et al., 2012). The Numeric Rating Scale is one of the most frequently used tools in post-operative assessments, as supported by the literature in this review. One study reported that patients found the Numeric Rating Scale challenging to use because of the novel pain sensations they experienced after spine surgery (Kaptain et al., 2017b). This was echoed in an interview-based study in which patients expressed that use of the Numeric Rating Scale was not sufficient to describe their pain; they indicated that more specific questions about the location and type of pain were required to obtain an accurate assessment (Eriksson et al., 2014).

Another study reported that the unidimensional nature of the numeric rating scale may limit its usefulness in guiding clinicians' treatment decisions (Van Boekel et al., 2017). The study indicated that patients with higher Numeric Rating Scale scores did not always desire intervention and that lower scores were still associated with unacceptable levels of pain for some patients (Van Boekel et al., 2017). Despite inherent challenges with the Numeric Rating Scale, patients expressed that regular pain assessment provided a sense of security and personalized their care; as a result, they had an increased desire to participate in their own care and expressed higher levels of overall satisfaction (Angelini et al., 2018; Kaptain et al., 2017a; Tawil et al., 2018).

Researchers have indicated that interactions with clinicians may influence patient participation (Lindberg and Engström, 2011). One study determined that nurses' interactions with patients during post-operative care were infrequent, brief, and focused on pain assessment (McTier et al., 2014). The authors explored the extent of desired participation using the Control Preference Scale, which was originally developed to assess individuals' desired level of control during medical decision making (Degner et al., 1997). McTier et al. (2014) noted that, while nurses were responsible for initiating pain assessment, only 25% of patients independently and proactively sought out opportunities to report their pain to the nurses. As a result, it is critical that nurses encourage patients to actively participate in their own pain management. Patient participation in assessment has been widely accepted by clinicians and patients as a valid means of engagement in pain management, which may provide limitations by not extending to decision making (McTier et al., 2014; van Dijk et al., 2015). Patients have expressed that, while their engagement in pain assessment is attainable and expected, their participation in pain management can be restricted by their lack of knowledge or understanding of medications (McTier et al., 2014).

3.5.2. Subtheme: education

Patient education can significantly influence patients' expectations, ability, and desire to participate in pain assessment and pain management (McDonall et al., 2020). Several studies have noted that the provision of clear and concise information can provide patients with an enhanced sense of control and reduce their anxiety, therefore contributing to increased participation in and overall satisfaction with pain management (Köse Tamer and Sucu Dağ, 2020; Milosevic et al., 2021; Mubita et al., 2020; Ramia et al., 2017a; Schwenkglenks et al., 2014). It can be challenging to navigate the appropriate timing and method of education for surgical populations (Henningesen et al., 2018).

One study examined the use of educational booklets and discovered that standardized information can be of benefit to patients but must be delivered by coordinated methods to ensure it is reviewed and understood (Bjørnnes et al., 2017). Another study utilized focus groups to examine patients' perspectives and uncovered that patients viewed information as a "pain killer" (p.467) because it had a calming influence on them and made them feel that their care had been personalized (Angelini et al., 2018). The patients also expressed that having access to more information made them feel more comfortable asking questions about different aspects of pain management (Angelini et al., 2018).

Accardi-Ravid et al. (2020) conducted a qualitative study of spine patients in which many patients reported that increased pre-operative information would have been beneficial. The patients noted that they would have felt more prepared for surgery if they had received information about post-operative pain expectations and the potential methods for pain management (Accardi-Ravid et al., 2020). The feeling of being underprepared was noted in another study in which patients were unsure if they had been prescribed appropriate pain medications post-discharge (Pius et al., 2020). Insufficient distribution of information was also identified in a study conducted in Lebanon, where almost one-quarter of patients did not receive satisfactory education about the relationship between self-reporting their pain and effective pain relief (Ramia et al., 2017b). Ramia et al. (2017b) also reported that decreased levels of patient education were associated with lower levels of satisfaction with pain management.

4. Discussion

The findings of this scoping review revealed a dearth of research on the patient's role in pain management, suggesting that this role is not well-elucidated. However, insights regarding patients' perspectives of this role emerged indirectly from the data in the form of two major themes and four subthemes. The main themes revealed that the patient's role was shaped by their attitudes toward pain and pain management as well as the quality of care and communication they received. On a deeper level, the subthemes demonstrated that patients' roles were also influenced by their own expectations and beliefs, as well as the type/quality of pain assessment and patient education.

Researchers have established that patients' prior experiences with pain can influence their future expectations, as well as their desire and ability to take an active role in pain assessment and management (Accardi-Ravid et al., 2020; Dagyan et al., 2021). The wider literature related to surgical outcomes also demonstrated that patients' expectations played a critical role in shaping their outcomes, including their return to work after surgery (Hoorntje et al., 2018). In order to optimize patient participation, it is crucial that patients receive education regarding the importance of self-reporting their pain and its impact on pain management, in addition to

the importance of having pain well-managed (Kuusniemi and Pöyhä, 2016; McDonall et al., 2020). This information should be delivered throughout the perioperative period, using a variety of personalized methods (Avallin et al., 2018; Chudyk et al., 2021).

It is important to note that only one study included in this review directly examined the patient's role in pain management (McTier et al., 2014). The researchers did not specifically explore the meaning of the patient's role in the context of pain assessment and management (McTier et al., 2014). As a result, further research is required to gain a better understanding of the patient's role in this context.

Researchers have confirmed that the complexity of patients' previous personal and vicarious experiences with pain can influence their future expectations of pain (Accardi-Ravid et al., 2020; Dagyan et al., 2021; Eriksson et al., 2015; Henningsen et al., 2018). As demonstrated in the wider literature, the anticipation of pain can create anxiety and contribute to higher intensity of pain and may also lead to the development of chronic pain (Chang et al., 2021; Terry et al., 2007; Willingham et al., 2021). Research have also examined patients' beliefs and attitudes toward their experiences of pain and the various methods used for pain relief, all of which contribute to the intricacy of the patients' role in pain management (Doekhie et al., 2020; Forsberg et al., 2015; Kästner et al., 2021). Several studies have reported on patient engagement and noted that aspects of patients' expectations and attitudes were found to influence their level of participation in pain management (Blumenthal-Barby, 2017; Davis et al., 2007; Jahandideh et al., 2019). Many patients were found to be misinformed about the risks associated with medications, the importance of self-reporting pain, and the potential complications of intense or unresolved pain (Bjørnnes et al., 2017; Cogan et al., 2014; Komann et al., 2021; Milosevic et al., 2021; Schwenkglens et al., 2014; van Dijk et al., 2017; Vu et al., 2021). Patients' ability and desire to participate in their own care and understand their role in pain assessment and management can be negatively affected by unrealistic expectations, high levels of anxiety, and misconceptions or misinformation (Mazer et al., 2020; McTier et al., 2014; Terry et al., 2007; Vu et al., 2021).

This scoping review also identified factors that facilitated patients' participation and satisfaction with pain management, as well as the overall quality of their pain control. Patient education regarding expected post-operative pain, methods for pain management, the importance of self-reporting, and the benefits of effective pain management were found to facilitate feelings of control, decrease anxiety, improve participation, and enhance overall satisfaction with pain management (Angelini et al., 2018; Bjørnnes et al., 2017; Cogan et al., 2014; Dagyan et al., 2021; Henningsen et al., 2018; Komann et al., 2021; McTier et al., 2014; Vu et al., 2021). Multiple studies noted that nurses were the clinicians most often involved in delivering pain-related information to patients (Craig et al., 2015; Eriksson et al., 2014; Foust Winton et al., 2021). Despite the typical time constraints and limited patient interaction in the post-operative period, patients reported that nurses used a caring and empathetic approach to promote questions and encourage patient participation (Craig et al., 2015; Mubita et al., 2020; Pius et al., 2020; Ramia et al., 2017b). Patients experienced a sense of reassurance when clinicians conducted thorough pain assessments and when nurses provided high-quality, empathetic care (Angelini et al., 2018; Craig et al., 2015; McTier et al., 2014; Mubita et al., 2020). Patients' overall sense of reassurance was central to their desire and ability to participate in pain management and influenced subsequent reports of patient satisfaction (Ramia et al., 2017a; Schwenkglens et al., 2014). Similar findings arose from literature that examined patients' general satisfaction with hospital care (Magidy et al., 2016; Topham and Drew, 2017). The overall quality of nursing care and the time allotted to nurses to provide care were factors that deeply influenced patients' perceptions of their post-operative care (Chen et al., 2022; Gishu et al., 2019).

There are inherent challenges associated with using the unidimensional measures of patient participation and patient satisfaction as a means of quantifying patients' subjective experiences of pain and determining their role in pain management (Gordon, 2015a; Scher et al., 2018). Much of the research included in this scoping review relied on specific indicators, such as desire to receive additional treatment and higher levels of satisfaction. It is possible that, similarly to the limitations of unidimensional pain assessment tools, the context and complexity of patients' perspectives can be lost through the use of such indicators (Gordon, 2015b; Gordon et al., 2016; Wooldridge and Branney, 2020).

Patients' desires for more pain treatment, participation, and satisfaction may not be correlated with their experiences of pain and pain management nor with their perceived role in these actions. Measurable and repeatable metrics, such as patient satisfaction, are desirable for research because they allow comparison across settings and populations. In this review, we highlighted a possible area for further research; i.e., studies specifically focused on how patients define their role in this aspect of post-operative care. The primary challenge in this type of research is to select outcome measures that amplify patients' voices. Research to enhance the patient voice may be improved by utilizing Patient Reported Outcomes (PROMS), which are developed in collaboration with patients (Castro et al., 2016; Rowland et al., 2017).

4.1. Limitations

The articles included in this review examined patients in a wide range of countries who underwent a variety of different surgeries. As a result, the findings of this review have a moderate degree of generalizability with regard to the role of the patient in post-operative pain assessment and management. The inclusion of qualitative and quantitative studies ensured a methodological balance and served to acknowledge the importance of patients' voices. One limitation of this review is that some papers may have been missed during the search strategy, which focused on mainstream databases and English-language publications. In addition, the Arksey and O'Malley (2005) analytical framework, which served as the basis for this review, recommended that researchers discuss their findings with key stakeholders to enhance their depth of understanding of the results. Due to time and resource constraints, these discussions were not undertaken.

5. Conclusions

This scoping review aimed to determine post-operative patients' perspectives of their role in pain management, including assessment. The review included a total of 26 papers that did not identify any clearly defined patient role with respect to post-operative pain management. Other findings of this review included: the need for improved patient education about the importance of self-reporting and effectively managing pain; an awareness of the complexity of patients' pain experiences, which are influenced by their expectations, anxieties, and beliefs about pain; and the fact that nursing care is central to optimizing patients' participation and satisfaction with pain management. This review also demonstrated the ongoing challenges associated with treating pain and understanding the complexity of the pain experience. Although this review explored many aspects of the pain experience from the patient's perspective, none of the articles included in this review specifically examined the patient's own perceptions or definitions of their role in pain management. This presents an opportunity for future research to build on the insights that emerged from this scoping review.

There are ongoing challenges with adequate post-operative pain control. The rising emphasis on patient-centred care and enhanced patient engagement in the healthcare system demands a shift toward personalized care, where patients can engage as partners in their care and contribute to assessments, treatment discussions, and the development of metrics. For this to be possible, clinicians and patients must develop a mutual understanding of their individual and collective roles in post-operative pain management. Therefore, further investigation into the surgical patient's role in pain management is warranted to narrow this gap in understanding and support optimal pain management for post-operative patients. Together with improved understanding of the patient's perspective, future investigation into the perspective of clinicians regarding post-operative pain management could enhance communication and outcomes.

Declaration of Competing Interest

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