

# **An Integrative Review of the Literature on Pain Management Barriers: Implications for the Canadian Clinical Context**

**Mia Maris Ortiz, Eloise Carr, Anastasia Dikareva**

Despite decades of pain research, substandard pain management continues to be distressingly prevalent across health-care settings. This integrative literature review analyzes and synthesizes barriers to effective pain management and identifies areas for future investigation in a Canadian context. Three sets of key barriers were identified through thematic analysis of 24 original research studies published in the period 2003–13: patient, professional, and organizational. These barriers rarely occurred in isolation, with many studies reporting examples in all three categories. This suggests that interventions need to reflect the multifactorial nature of pain management. Reframing pain education as a public health initiative could lead to sustainable improvement, as could the strengthening of partnerships between patients and health-care providers. There are tremendous opportunities for the advanced practice nurse to take a lead in pain management. The delivery of high-quality care that encompasses effective pain management strategies must be a priority for nursing. Research approaches, such as pragmatic mixed methods, that offer contextual understanding of how pain is managed are suggested.

Keywords: pain management, nursing, healthcare professionals, barriers

*Résumé*

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## **Un examen par intégration de la littérature traitant des obstacles à la gestion de la douleur : conséquences en contexte clinique canadien**

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Bien que la question de la douleur ait fait l'objet de recherches depuis plusieurs décennies, la douleur est encore très mal gérée dans la plupart des milieux de la santé. Le présent examen par intégration de la littérature analyse et fait la synthèse des obstacles qui empêchent une gestion efficace de la douleur et identifie des domaines qui devront faire l'objet d'études en contexte canadien. Trois types d'obstacles ont été identifiés à l'aide d'une analyse thématique de 24 études originales publiées entre 2003 et 2013 : ceux qui relèvent du patient, ceux d'ordre professionnel et ceux de nature organisationnelle. Ces obstacles se manifestent rarement de façon isolée et nombre d'études offrent des exemples des trois types, ce qui suggère que les interventions doivent refléter la nature multifactorielle de la gestion de la douleur. Le recadrage de l'éducation en matière de douleur dans le cadre d'une initiative de santé publique pourrait mener à des améliorations durables, tout comme le renforcement des partenariats entre les patients et les professionnels de la santé. Les occasions qui s'offrent aux infirmières en pratique avancée de jouer un rôle de premier plan en matière de gestion de la douleur sont immenses. La prestation de soins de grande qualité qui s'appuient sur des stratégies de gestion de la douleur efficaces doit être une priorité en soins infirmiers. Les auteures suggèrent l'adoption d'approches de recherche offrant une compréhension contextuelle de la gestion de la douleur, telles les méthodes mixtes pragmatiques.

Mots clés : gestion de la douleur, soins infirmiers, professionnels de la santé, obstacles

The management of acute and chronic pain continues to be problematic in Canada (Lynch, 2011). A survey in a large Canadian hospital found 71% of patients reporting some pain experience, with 32% having moderate to severe pain and 11% severe pain (Sawyer, Haslam, Robinson, Daines, & Stilos, 2008). Approximately 15% to 19% of Canadians experience chronic pain, with the highest rates reported by women and those over the age of 65 (Reltsma, Tranmer, Buchanan, & Vandekerckhof, 2011). Some believe that effective pain management across all health-care settings is an ethical right (Cousins, Brennan, & Carr, 2004; Olmstead, Scott, & Austin, 2010).

### **Background and Significance: Pain Management and the Experience of Pain**

Nearly half of all patients living with poorly managed pain experience substantial costs to their daily lives (Cousins et al., 2004). Unmanaged pain can have long-term physiological and psychological consequences, such as increased susceptibility to depression, lower quality of life, reduced independence, and decreased functioning in activities of daily living (ADLs) (Coker et al., 2010; Lapane, Quilliam, Chow, & Kim, 2012). Chronic pain is also associated with immense economic, physical, and psychological costs (Kohr & Sawhney, 2005). It is estimated that the annual cost of pain management in Canada surpasses \$10 billion (Reltsma et al., 2011). Persistent pain can lead to reduced productivity at work, resulting in financial costs to the economy and the individual (Lynch, 2011). Pain can limit activities and negatively impact mental health and interpersonal relationships, thereby reducing quality of life (McCarberg, Nicholson, Todd, Palmer, & Penles, 2008).

Effective pain management includes pain screening, assessment (ongoing assessment and reassessment), diagnosis, documentation (timely and appropriate), treatment (pharmacological and non-pharmacological interventions), and continuous evaluation of care (Registered Nurses' Association of Ontario [RNAO], 2007). Pain management should also include ongoing education and training of staff, clients, and clients' families regarding pain experiences and associated primary and secondary interventions (Health Care Association of New Jersey, 2006; RNAO, 2007). Primary interventions would be preventive — for example, education for patients with chronic pain surrounding pain management techniques. Secondary interventions refer to the direct treatment of pain at its onset, such as medication for patients complaining of pain from a bone fracture. Nurses play a key role in effective pain management (Ferrell, 2005; RNAO, 2007) and factors influencing effective pain man-

agement among health professionals are well documented (Brown, 2004; Prkachin, Solomon, & Ross, 2007; Sun et al., 2007). However, despite decades of extensive research, ineffective pain management continues to be ubiquitous in health care in Canada and in a number of other countries, such as the United Kingdom (Maier et al., 2010; Wadensten, Fröjd, Swenne, Gordh, & Gunningberg, 2011) and the United States (Carr, Reines, Schaffer, Polomano, & Lande, 2005).

### **Purpose of the Literature Review**

This article explores and develops an analysis of the current literature on the barriers to adequate pain management. According to Torraco (2005), “an integrative literature review of a mature topic addresses the need for a review, critique, and the potential reconceptualization of the expanding and more diversified knowledge base of the topic as it continues to develop” (p. 357). An integrative review, also known as a scoping review, is aimed at elucidating gaps in the literature rather than answering specific research questions. Therefore, integrative review methodology is the broadest literature review approach (Whittemore & Knafl, 2005). However, the structure and format of an integrative review follow those of other literature reviews: background, methods, data analysis and results, discussion. Our specific focus stems from a desire to improve pain management in the clinical setting by identifying contemporary barriers. Though this review focuses on the context of nursing, literature concerning other health professionals is included, as this approach addresses the interprofessional collaboration that underlies clinical pain management initiatives (Carr & Watt-Watson, 2012).

### **Literature Search: Design and Data Analysis**

The literature search and analysis were conducted according to methods described by Torraco (2005) and Whittemore and Knafl (2005). Three electronic journal databases on nursing research and clinical practice were used: Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, and Health Source: Nursing Academic Edition. Additional articles were retrieved through back-chaining, which involves exploring the references listed in relevant articles for further literature. The search terms were “nursing,” “pain management,” “pain education,” and “barrier.” The term “barrier” refers to factors that impede effective pain management.

The primary inclusion criteria were as follows: (1) original research article, (2) primary or secondary research outcomes with a focus on bar-

riers to effective pain management, (3) published in the English language (4) during the period January 2003 to October 2013 inclusive. The search timeline for integrative reviews varies, with some reviews requiring a snapshot of science over just a few months (Falk, Ekman, Anderson, Fu, & Granger, 2013) and others seeking to capture the impact of changes in mental health policy two decades earlier (Nurjannah, Mills, Usher, & Park, 2014). We chose 10 years, to reflect our aim of capturing a contemporary overview. We did not limit the search to Canadian studies, as we wished to gain an understanding of the international literature interpreted in a Canadian context. These parameters were meant to capture contemporary research in pain management (Whittemore & Knafl, 2005).

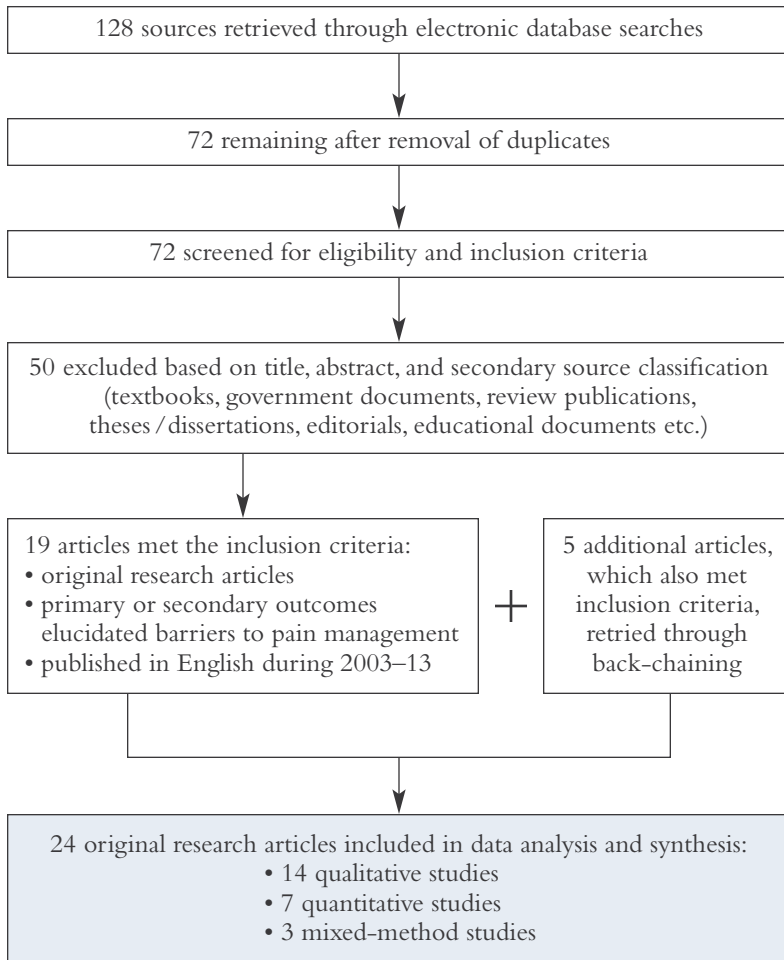
Two members of our team screened abstracts for eligibility criteria, independently labelling articles “inclusion,” “possible inclusion,” and “exclusion.” If the abstract did not provide information sufficient to assess for inclusion/exclusion, the article was read in full. Differences of opinion regarding inclusion/exclusion stemmed predominantly from whether an article met the criterion of yielding primary or secondary research outcomes surrounding barriers to effective pain management. These differences were addressed through in-depth discussion and a full review of the article, arriving at consensus. All three team members participated in the final selection of articles.

The findings from each study were reviewed in detail by two members of the team to identify barriers to pain management. A list of barriers was compiled (as codes) and then subjected to thematic analysis using a matrix analysis (Miles & Huberman, 1994). This framework entails identifying themes from patterns and sequences of data that describe a phenomenon — in this case, “barriers” — which are then grouped together to form themes. The themes were arranged in a table to view patterns across the codes. For example, the study by He et al. (2010) identifies three barriers: patient noncompliance, heavy workloads of health-care providers, and insufficient time for health-care providers to perform in-depth pain assessments. Looking at these across the themes of patient, professional, and organizational barriers, it was possible to observe that the three are interrelated. Patient noncompliance can increase the workloads of health-care providers, as it can increase the time required for task completion. Heavy clinical workloads can decrease the time spent with patients, leading to ineffective interventions and in turn patient noncompliance, and so forth. Thematic analysis was performed by the first author and peer-reviewed at each stage by the other two authors.

## Results

A total of 24 articles were included in the review. Of the studies, 14 were qualitative, seven quantitative, and three mixed-method. The search strategy and results are depicted in the PRISMA flowchart (Figure 1) (Moher, Liberati, Tetzlaff, Altman, & PRISMA Group, 2009). Thematic analysis revealed three interrelated barriers to optimal pain management: patient, professional, and organizational. The 24 studies are summarized in Table 1.

Figure 1 *PRISMA Flowchart*



**Table 1 Summary of Literature Identifying Barriers to Adequate Pain Management**

Publication (Country)	Study Method	Sample Size and Context	Relevant Findings	Limitations
<b>Qualitative Studies</b>				
Bergman (2012) (United States)	Individual interviews	Emergency nurses (N = 15) in 6 hospitals	Lack of cohesion within health-care team; inadequate staffing; unrealistic expectations of health professionals	Subjects had wide-ranging tenure (1–15 years), impacting practice experience; despite multi-centre recruitment, limited to geographical area
Breen et al. (2007) (United Kingdom)	Telephone interviews; focus groups	GPs (N = 21) with > 2 years' experience	Mismatched perceptions in the physician-patient relationship; lack of education, awareness, and local services for patients	No GPs practised in strictly rural settings; despite multi-centre and practice recruitment, limited to geographical area
Corazzini et al. (2013) (United States)	Telephone interviews	Nursing directors, RNs, LPNs working in 10 nursing homes	Inadequate staffing; reliance on LPNs to initiate majority of pain control initiatives	Data collection and analysis focused on comparative case studies; limited to 1 geographical area
Dysvik & Furnes (2012) (Norway)	Individual interviews; group-level reports	Nurse leader (n = 1), nurse group leaders (n = 9), 13 chronic pain groups (9–13 participants each)	Challenges in leadership on organizational, teamwork, and group levels	Purposive sampling used; recruitment methods/participant sources not stated; group discussions based on contributions vs. turn-taking
Fox et al. (2004) (Canada)	Focus groups	Physicians (n = 6), nurses (n = 27), health-care aides (n = 13), physiotherapists (n = 8) working in long-term-care institutions	Lack of caregiver pain knowledge and sensitivity; patient cognitive impairment; underreporting of pain; lack of documentation and time	Purposive sampling used; results of qualitative analysis not presented to study participants for final validation

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<p>Gregory &amp; Waterman (2012) (United Kingdom)</p>	<p>Naturalistic unstructured observation; structured patient interviews</p>	<p>RNs (<i>n</i> = 18) on 7 wards; total of 38.5 hours of observation; patients (<i>n</i> = 19) on 5 medical wards</p>	<p>Nurses' multitasking prevented patients from discussing pain; minimal patient involvement — spoke about pain only when asked</p>	<p>Limited time spent performing naturalistic observation, and solely on day shifts; observer was also a participant as an RN on ward under observation; limited to geographical area</p>
<p>Jablonski &amp; Duke (2012) (United States)</p>	<p>Written narratives; individual interviews</p>	<p>RNs (<i>N</i> = 10) caring for terminally ill patients in 100-bed rural hospital</p>	<p>Lack of pain knowledge; disagreement about patients' level of pain; lack of time</p>	<p>Small sample size; focused on acute care in a rural setting; limited to 1 institution and geographical area</p>
<p>Manias (2012) (Australia)</p>	<p>Naturalistic observation; individual interviews</p>	<p>RNs (<i>N</i> = 34) working in 2 geriatric evaluation and management units; 75 hours of observation</p>	<p>Patient language barriers and cognitive impairment; nurse-patient level of pain disagreement; inadequate staffing; reduced medication availability at night</p>	<p>Participants aware of being observed; RNs varied greatly in age and experience; 2-centre study limited to geographical area</p>
<p>Manias et al. (2005) (Australia)</p>	<p>Naturalistic observation; individual interviews</p>	<p>RNs (<i>n</i> = 52) and patients (<i>n</i> = 312) on 2 surgical units; 74 observations of 2 hours each</p>	<p>Delayed medication orders; lack of patient communication; increased ward activity led to decreased pain management</p>	<p>Patients aware of being observed; data collection took place on units in the same hospital</p>
<p>Martin et al. (2005) (Canada)</p>	<p>Focus groups</p>	<p>Community seniors (<i>n</i> = 8), nursing home residents (<i>n</i> = 4), informal caregivers (<i>n</i> = 8), nurses (<i>n</i> = 19), nursing home administrators (<i>n</i> = 6)</p>	<p>Lack of systematic medication protocols; lack of non-pharmacological remedies to treat multiple conditions; patient underreporting of pain</p>	<p>Small sample size for nursing home residents; recruitment of all health-care providers was through a provincial Alzheimer's organization</p>



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Namabati et al. (2012) (Iran)	Individual interviews	RNs (N = 16) with 4–10 years' pediatric experience in a teaching hospital	Unstandardized medication administration protocols, pain documentation, and assessment tools; inadequate staffing; inappropriate pain reporting by children	Small sample size; participants practised solely in a pediatric setting; single-centre study also limited by geographical area
Older et al. (2010) (United Kingdom)	Individual interviews	Patients (N = 28) admitted for day surgery in a large district hospital	Patient inexperience with analgesic use; belief that combined medication use is unsafe; use of medication only when coping strategies failed	Participants had similar cultural and ethnic backgrounds; single-centre study also limited by geographical area
Rejeh et al. (2009) (Iran)	Individual interviews	RNs (N = 25) with surgical ward experience at a university-affiliated hospital	Lack of education; hospital policies limited nursing authority; workloads limited time for assessment and delayed medication	Research focus on practice of Iranian nurses; participants varied greatly in education level and years of practice; limited by geographical area
Stevens et al. (2011) (Canada)	Focus groups	Nurses and allied health professionals (N = 147); 16 focus groups	Limited prescribing privileges for nurses; lack of team cohesion; disregard for nurses' contribution to clinical decision-making	Purposive sampling and setting selection employed; participants practised solely in NICU

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<b>Quantitative Studies</b>				
Broekmans et al. (2004) (Belgium)	Questionnaire	Randomized sample of university-employed nurses ( $N = 312$ ) in surgery, medicine, oncology, ICU	Oncology nurses most positive towards opioid use; negative towards use of opioids in diagnostic phase; concerns about patient addiction	Sample comprised nurses from few departments; cross-sectional study may not account for confounding variables — that is, unit culture; limited to 1 institution and geographical area
Czarnecki et al. (2011) (United States)	Questionnaire	RNs ( $N = 272$ ) from various departments of a children's hospital	Inadequate medication orders — pain management not prioritized; lack of time for premedication; parents reluctant to medicate children	Low response rate (28%); information on departments/specialties of participants unavailable; limited to 1 institution and to pediatric population
Duke et al. (2013) (United States)	Questionnaire	Junior and senior nursing students ( $n = 162$ ) and faculty ( $n = 16$ )	Knowledge positively correlated with education; poor behavioural pain assessment among students	Convenience sampling used; internal consistency of questionnaire was statistically low; limited to 1 postsecondary institution and 1 nursing program
Duignan & Dunn (2009) (Ireland)	Questionnaire	Emergency nurses ( $N = 81$ ) in 5 emergency departments across 4 counties	83% had no training in pain management; poor pain assessment affected practice of 46% of nurses; inability to offer analgesics pre-diagnosis	Despite multi-location sampling, locations all governed by 1 regional health-care body
Kohr & Sawhney (2005) (Canada)	Questionnaire	APNs ( $N = 116$ ) from a variety of patient care areas	Only 6% of nurses had pain management specialization; inadequate education of medical staff and patients	Majority (69%) of respondents from acute-care settings; disproportionate number of nurses surveyed from each specialty; limited to geographical area

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Rose et al. (2012) (Canada)	Questionnaire	RNs (N = 802) with > 5 years' ICU experience from 12 Canadian nursing associations	Only 29% of nurses aware of clinical guidelines; inadequate use of behavioural pain assessment tools for uncommunicative patients; lack of pain score communication in handovers	Stratified, disproportionate sampling; self-report method may misalign reported and actual practice; limited to geographical area
Wang & Tsai (2010) (Taiwan)	Questionnaire	RNs (N = 370) from ICUs in 14 regional and district hospitals	Approximately 50% indicated poor pain knowledge; medication orders from physicians required	Majority (69%) of participants had not received formal pain management education prior to study; only portions of a validated survey tool were used in questionnaires; limited to geographical area
<b>Mixed-Method Studies</b>				
Breen et al. (2004) (United Kingdom)	Focus groups; questionnaire	GPs (n = 3), nurses (n = 3), patients with back pain (n = 4); questionnaire administered to 144 GPs	Mismatched patient-physician expectations; inadequate capacity to manage patients' multidimensional needs	Pilot study; participation inconsistent throughout study; limited to geographical area
Coker et al. (2010) (Canada)	Focus group; questionnaire/survey tool	Focus groups: RNs (n = 36); survey respondents: nurses (n = 115)	Assessing pain in patients with impaired cognition; patients underreported pain; lack of time	Authors created survey tool used in the study — tool still requires external validation; limited to geographical area and care of elderly
He et al. (2010) (Singapore)	Educational intervention; questionnaire	RNs (N = 108) on surgical and medical children's wards in 2 public hospitals	Most frequently reported barriers: lack of time and lack of cooperation on the part of children and parents	Convenience sampling; study limited to female nurses; despite multi-centre recruitment, limited to geographical area

### ***Individual Patient Barriers***

This theme refers to unique patient characteristics, which were a central challenge to effective pain management. Negative patient attitudes and beliefs concerning pain medication and lack of patient involvement in care were particularly common. Inadequate patient communication, to the health professional, of pain experiences was highlighted and was especially prevalent in pediatric pain management.

Patient communication is critical to proper pain assessment, yet several of the studies report difficulty assessing pain among patients with compromised communication skills, such as sensory and cognitive impairment as seen in patients with dementia (Coker et al., 2010; Fox, Solomon, Raina, & Jadad, 2004; Manias, 2012; Martin, Williams, Hadjistavropoulos, Hadjistavropoulos, & Maclean, 2005). Similar challenges were observed in patients with language barriers, including infants and individuals whose first language was not English (Coker et al., 2010). Reduced patient communication in turn resulted in poor pain assessment by health professionals. Rose et al. (2012) found that nurses routinely preferred a 0–10 numerical rating self-report pain assessment tool and were significantly less likely to use behavioural assessment tools with nonverbal patients, thereby missing critical pain cues and experiences. Typically, behavioural pain assessment tools use nonverbal cues, such as facial expressions (frowning), vital signs (increased blood pressure), and particular behaviours (protecting of abdomen for abdominal pain), to objectively assess presence or severity of pain. Rose et al. (2012) found that the most common behavioural assessment tools used, as reported by critical care nurses ( $N = 802$ ), were the Behavioral Pain Scale (Payen et al., 2001), the Adult Non-Verbal Pain Scale (Odhner, Wegman, Freeland, Steinmetz, & Ingersoll, 2003), and the Critical-Care Pain Observation Tool (Gélinas, Fillion, Puntillo, Viens, & Fortier, 2006). To compound inadequate patient communication, patient pain-related beliefs compromised communication of pain experiences. Using a focus group with nurses, Fox et al. (2004) found that nurses ( $n = 27$ ) believed patients underreported pain out of fear of being perceived as “complainers” and disliked bothering staff for medication, possibly in an effort to be compliant patients. From survey responses ( $n = 115$ ) and focus group discussions with nurses ( $n = 36$ ), Coker et al. (2010) found that elderly patients in an acute-care setting primarily reported their pain to physicians. Given that other care providers, such as nurses, have more direct patient contact, it is evident that patient misunderstanding of health-care provider roles can negatively affect pain reporting.

Patients’ attitudes towards analgesics can have an adverse effect on pain management. Older, Carr, and Layzell (2010) report that patients

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( $N = 28$ ) admitted for day surgery used analgesics as a last resort when other coping strategies failed. These coping strategies included distraction methods and adoption of a positive attitude. Patients often compared their current pain with previous pain experiences to gauge their personal pain threshold. The same group of patients avoided pain medication, despite experiencing significant pain, due to an impression that combined analgesic use is unsafe. Other researchers have demonstrated that poor tolerance to side effects of pain medication, such as constipation and drowsiness, are attributable to reduced analgesic adherence (Coker et al., 2010; Martin et al., 2005).

Coupled with poor communication and a lack of adherence to pain medication, marginal patient involvement in pain care negatively affects pain management. Gregory and Waterman (2012) conducted naturalistic observations of five medical wards and found that patients did not express painful sensations unless specifically asked by physicians. The findings from interviews with physicians ( $n = 3$ ), nurses ( $n = 3$ ), and patients ( $n = 4$ ) suggest that inadequate involvement in self-care is due in part to lack of access to local pain services and inadequate pain education (Breen, Carr, Mann, & Crossen-White, 2004). Patients expressed feeling highly vulnerable and functionally impaired by pain as they waited for referral to other health professionals or to chronic pain programs. At the same time, they were appreciative of knowledge and advice provided by chiropractors and osteopaths that helped to alleviate their pain. Breen, Austin, Champion-Smith, Carr, and Mann (2007) found that patients reported feelings of helplessness and powerlessness as they waited for referral. Interestingly, physicians who felt they were unable to help the patient also experienced these feelings. To increase patient engagement, physicians ( $N = 21$ ) suggested multidisciplinary, small-group discussion-based education initiatives for patients.

In the pediatric population, interviews with nurses ( $N = 16$ ) revealed that patient-specific variables, such as the expression of pain and the temperament and behaviour of the child, substantially influenced pain assessment and treatment (Namnabati, Abazari, & Talakoub, 2012). The role of parents and family in pediatric care may inadvertently hinder effective pain management. Namnabati et al. (2012) found that role expectations, age, and gender differences may impact pain reporting by children. For example, younger children are more reliant on their parents, which can increase pain reporting. In an educational intervention study with nurses ( $N = 108$ ), children and parents failed to adhere to non-pharmacological pain interventions, impeding nurses' ability to effectively address children's post-operative pain (He et al., 2010). These interventions included breathing techniques, imagery and distraction, positive encouragement, thermal regulation, massage, and positioning/repositioning. A study by

Czarnecki et al. (2011) with nurses ( $N = 272$ ) found parental resistance to pediatric pharmacological intervention, with parents concerned that their children would develop adverse side effects, tolerance, and addictions. Similar reasons underlying negative parental attitudes towards opioids and analgesics can be found in the literature (Fortier, Martin, Kain, & Tan, 2011; Rony, Fortier, Chorney, Perret, & Kain, 2010).

### ***Professional Barriers***

Barriers associated with professional knowledge and training formed the second theme. At an individual level, these included inadequate education and inappropriate attitudes and beliefs. At a team level, they related to a lack of interprofessional collaboration, with a strong interrelationship between professional and patient barriers. More specifically, if nurses do not have appropriate knowledge they may inadvertently endorse inappropriate attitudes and beliefs among patients, such as a belief that pain is a normal part of the aging process, thereby alluding to the unimportance of pain reporting and treatment in older populations. This notion is expanded upon in the discussion below surrounding the findings of Fox et al. (2004); Broekmans, Vanderschueren, Morlion, Kumar, and Evers (2004); and Martin et al. (2005).

Barriers were found to stem from the attitudes and beliefs of health professionals, leading to overly conservative pain management. Underlying professional misconceptions appeared to influence practice. These were related to opioids being dangerous, pain as a normal age-related phenomenon, decreased sensitivity to or inability to feel pain among older individuals and those with dementia, and the equating of absence of self-reported pain with absence of physical pain (Broekmans et al., 2004; Martin et al., 2005). In a survey of physicians ( $n = 6$ ), nurses ( $n = 27$ ), physiotherapists ( $n = 8$ ), and health-care aides ( $n = 13$ ), Fox et al. (2004) found that caregivers' insensitivity to pain experiences in the senior population resulted in undertreatment of pain. Others have identified disagreement between health-care providers' assessment of pain and patient-reported pain experiences as a prevalent barrier (Jablonski & Duke, 2012; Manias, 2012). Similar to patients, health professionals harboured concerns about addiction. In a study with university-employed nurses ( $N = 312$ ), Broekmans et al. (2004) found that nurses were more compliant with opioid administration during the diagnostic phase of a condition, compared to later phases.

Martin et al. (2005) found that nurses cited a lack of education as a primary contributor to poor pain assessment. Rejeh, Ahmadi, Mohammadi, Kazemnejad, and Anoosheh (2009) found that nurses perceived a lack of education as the most prevalent barrier to sound clinical decision-making concerning pain; pain education was most likely to

focus on pharmacological interventions — pharmacokinetics and safe-dose ranges of medications — underpreparing nurses for the various religious and cultural characteristics that clients can present with in practice. For example, historically, some religions believed that pain was required in the recovery of health and was experienced through the “will of God” (Unruh, 2007, p. 70). In patients belonging to cultures that value stoicism, the incidence and severity of pain may be underreported and even unexpressed, in contrast to patients belonging to cultures that value expressivity (Narayan, 2010). Nurses need to be knowledgeable about various religious and cultural beliefs with respect to pain in order to provide culturally competent and effective pain care.

Kohr and Sawhney (2005) surveyed advanced practice nurses (APNs) ( $N = 116$ ) and found that 84% of respondents cited education as the primary barrier to proper pain care. In particular, difficulties occurred around the decision to prescribe and administer controlled-release opioids. Analgesic prescription requires comprehensive assessment and knowledge of how to individualize pain regimens for effectiveness. Controlled-release opioids require high levels of knowledge and experience in order to monitor and treat side effects, and practitioners were often concerned about its perceived increased capacity for abuse.

Related to education, nurses lacked clinical confidence in pain assessment and did not know how much pain was acceptable for patients to experience (Coker et al., 2010). Lack of pain education can perpetuate misinformed decision-making. Jablonski and Duke (2012) found that, when lacking proper education, professionals ( $N = 10$ ) increasingly adhered to patient stereotypes (e.g., pain is an expected outcome of aging). Breen et al. (2004) also found mismatched expectations of pain experiences between patients and general practitioners, indicative of poor professional training in pain management. Duignan and Dunn (2009) surveyed emergency nurses ( $N = 81$ ), to find that 83% had no formal training in pain management. Moreover, of the 802 Canadian nurses interviewed by Rose et al. (2012), only a third were aware of pain guidelines and policies at their place of employment. It would seem that appropriate education for nurses is lacking. Despite pain management competency following increased education, pain management remains substandard, as shown by Duke, Haas, Yarbrough, and Northam (2013) in their study with nursing students ( $n = 162$ ) and faculty ( $n = 16$ ). Duke et al. advocate for an evidence-based re-evaluation of current pain education initiatives.

At the team level, the absence of pain knowledge among medical team members not only hindered the implementation of effective pain management strategies but altered team dynamics. Nurses surveyed by Coker et al. (2010) stated that a primary barrier was physicians’ lack of

knowledge, experience, and skill in prescribing pain medication. They also cited a lack of documentation concerning pain assessment, inconsistent approaches to pain management, and the absence of collaboration between colleagues and members of other professions (Coker et al., 2010). This absence of collaboration often manifested as an inability to access clinical pain experts, reducing collaboration between pain experts and care providers in direct patient contact (Fox et al., 2004; Martin et al., 2005). Bergman (2012) and Wang and Tsai (2010) relate similar findings; in both studies, nurses reported that reliance on physician orders for pain care was a major barrier. In Wang and Tsai's (2010) study, nurses ( $N = 370$ ) said that they should be able to design a pain care regimen for patients based on immediate postoperative assessments instead of having to wait for physician assessments and orders. Additionally, with only a small percentage of nurses choosing to specialize in pain management, pain care expertise was often lacking on medical teams (Kohr & Sawhney, 2005).

### ***Organizational Barriers in Acute-Care Settings***

Finally, effective pain management was burdened by a number of barriers associated with workplace dynamics, culture, and practices. These barriers were characterized by demanding workloads, a lack of time, and policies that negated optimal pain care. These organizational barriers limited health-care roles and the provision of effective pain management.

Demanding workloads among nurses and inadequate staffing have led to pain management being delivered by untrained personnel. For example, Corazzini et al. (2013) found that several long-term-care facilities ( $N = 10$ ) primarily relied on licensed practical nurses (LPNs) and nursing attendants to assess and manage pain; yet, in general, LPNs are not trained or licensed to provide comprehensive pain assessment and make medication decisions. In other instances, the high-volume work environment forced nurses to multitask, leaving little time for pain assessment (Czarnecki et al., 2011; He et al., 2010; Rejeh et al., 2009). Upon observing nurses ( $n = 18$ ) in the practice setting, Gregory and Waterman (2012) found that when nurses were providing direct patient care they were often involved in a secondary activity; this prevented patients from freely discussing health concerns or pain experiences with them. As well, nurses faced several interruptions in care, creating opportunities for errors in medication administration.

In addition to prioritizing high volumes of work, nurses were burdened by inadequate pain documentation protocols and poor unit strategies for procuring pain medication efficiently. In a study by Namnabati et al. (2012), pediatric nurses cited a lack of standardized pain assessment tools and analgesic administration protocols as two of the most prevalent



barriers to pain management. Observations of nurses ( $n = 52$ ) and patients ( $n = 312$ ) by Manias, Bucknall, and Botti (2005) echo these findings and found that delayed medication orders by physicians further complicated matters. Though nurses strived to manage pain in a timely manner, their active interventions were often delayed by the need to contact a physician to obtain new or modified medication orders (Manias et al., 2005). Nurses ( $N = 34$ ) were also observed to rely on patients' ability to tolerate pain during night shifts, increasing the incidence of pain, due to policies requiring physicians to decrease analgesic orders at night (Manias, 2012). Thus, nurses' limited prescribing privileges was common to a number of studies, and a central challenge to analgesic administration (Duignan & Dunn, 2009; Manias, 2012; Stevens et al., 2011).

At the team level, policies limiting professional autonomy in medical decision-making among nurses have created significant challenges in pain management. Qualitative exploration with nurses by Stevens et al. (2011) ( $N = 147$ ) and Bergman (2012) ( $N = 15$ ) both reveal a lack of medical team cohesion and the presence of established hierarchical relationships, which undermine nurses' contribution to clinical decision-making. Interviews with nurses ( $N = 25$ ) by Rejeh et al. (2009) further show that nurses' limited authority in pain assessment and management negatively impacts their relationship with patients. Jablonksi and Duke (2012) also allude to authoritative boundaries, where frontline care providers cited a limited scope of practice compared to physicians and poor team cohesion led to decreased communication at vital points in the care transition. According to a Canada-wide study by Rose et al. (2012), which surveyed over a thousand intensive care nurses through all provincial regulating bodies, only 60% of pain communication occurs during shift change reports. These findings suggest the need for increased nursing leadership on medical teams. Qualitative inquiry into leadership in chronic pain management programs reveals that nursing leadership impacts pain management at the team level as well as at the organizational level. In a study by Dysvik and Furnes (2012), leaders of multidisciplinary teams perceived that nursing leadership impacts care at the team level, specifically through the skill of nursing leaders in selecting individuals who complement the workplace culture and team and are attuned to the care needs of the patient population. Effective nursing leadership at the organizational level, similarly, takes the form of selecting complementary health-care team members who possess the personal characteristics and interaction traits necessary to form competent, skilled teams with a well-defined, cohesive vision. The nurses interviewed ( $n = 9$ ) cited the critical importance of awareness of each team member's competency in managing chronic pain (Dysvik & Furnes, 2012).

## **Discussion**

The purpose of this integrative review was to consolidate the current research on barriers to pain management and determine the gaps in the research. Nurses have a pivotal role to play in the management of pain and it is evident that there are patient, professional, and organizational barriers to effective pain management practices. While these themes are not new (Fox et al., 2004), our review adds insight into the complexities and interrelatedness of the barriers. We propose that these findings offer an opportunity to inform new perspectives and research endeavours. Our discussion focuses on three important areas: the role of the nurse, pain education as a public health initiative, and directions for future research. The strengths and weaknesses of the review and conclusion follow.

### ***The Role of the Nurse in Pain Management***

Nurses have long been recognized as central to the integrity of good pain management. The role of nursing is primarily to assess patient pain; monitor the effectiveness and accordingly change pain regimens to mirror pain status; monitor and manage adverse effects, patient ADLs, and bowel function; and communicate patient satisfaction to the health-care team (Sawhney & Sawyer, 2008). Yet nurses, along with other health professionals, have also been part of the problem. Explicit challenges include a lack of practice agreements and prescriptive authority, inadequate consultation resources for patients outside of the acute-care setting, and inexperience in managing patients with complex conditions (Sawhney & Sawyer, 2008). Though the importance of pain education at the undergraduate nursing level is essential, the interrelatedness and complexity of the barriers highlight professional opportunities for APNs, which the Canadian Nurses Association defines as nurses with advanced skills and knowledge. In Canada, the clinical nurse specialist (Canadian Nurses Association [CNA], 2009a) and the nurse practitioner (CNA, 2009b) are the two recognized APN roles. APNs have long been involved in pain management and our review highlights key components of the APN role. In particular, there is a clear need for expertise in education (Bryant-Lukosius, DiCenso, Browne, & Pinelli, 2004), interprofessional relationships (Kaasalainen et al., 2010), and prescribing (Stenner & Courtenay, 2008) in order to raise the quality of care. Timely, effective pain control would be enhanced if the range of qualified prescribers were to be enlarged. In Canada, changes in federal legislation removed some barriers to the ability of nurse practitioners (NPs) to prescribe controlled substances (Government of Canada, 1996). While changes in provincial laws and regulations are still needed to facilitate NPs' use of the full formulary, allowing NPs with pain expertise to prescribe to full scope could address

a number of the barriers identified in this review. A survey of NPs in British Columbia found that 85% would incorporate the prescribing of narcotic and controlled drugs, if permitted, into their practice (College of Registered Nurses of British Columbia, 2013). For such changes, nurses need to participate or take a lead role in developing and contributing to local and national policy (Furlong & Smith, 2005). However, it is acknowledged that the implementation of their role is complex (Sangster-Gormley, Martin-Misener, Downe-Wamboldt, & DiCenso, 2011). Further work is required to more fully understand these roles and the contribution they are making to pain management within nursing.

### ***Pain Education as a Public Health Initiative***

The review has identified the interrelatedness of many of these barriers, with inadequate education being a significant patient and professional barrier. Systematic reviews of patient education with respect to pain are disappointing, with several failing to demonstrate an impact on pain reduction or prevention (Demoulin et al., 2012; Louw, Diener, Butler, & Puentedura, 2013; Ronco, Iona, Fabbro, Bulfone, & Palese, 2012). The content of the education is important. There have been calls for education that moves towards patient empowerment (Johansson, Nuutila, Virtanen, Katajisto, & Salanterä, 2005) and that includes pain science (Louw et al., 2013). An individualized and patient-centred approach has also been highlighted as important for effective pain management, in particular for older adults with dementia (Newton, Reeves, West, & Schofield, 2014) and children undergoing tonsillectomy (Howard et al., 2014). Nurse-led educational interventions using a patient-centred approach have been found to be moderately effective in reducing cancer pain (Martinez et al., 2014). It is particularly salient to address the misconceptions or concerns a patient or family may have regarding pain and pain management interventions, such as the fear of addiction.

The above findings suggest that vulnerable populations, especially, may benefit from individualized patient-centred pain education approaches. We have an opportunity to reconsider the delivery of patient education and reframe it in a public health context. Public health takes a population focus, which uses all organized measures to prevent disease, promote health, and prolong life (World Health Organization, 2014). Thus public health is concerned with the total system, not only the eradication of a particular disease. Positioning pain as a public health concern could serve to improve public education with regard to the deleterious effects of acute pain and the development of chronic or persistent pain (Kehlet, Jensen, & Woolf, 2006). The emphasis on education and on relationship-centred care is embodied in the professional practice model and standards of practice for community practice nurses (Community Health

Nurses of Canada [CHNC], 2011). The explicit expectation that the nurse–client relationship will promote participation by the individual, family, community, and population (CHNC, 2011) places nurses in an ideal position to facilitate pain education. In Europe there have already been calls for a public health approach to chronic non-cancer and cancer pain (Hanna, 2012). This is particularly fitting for pain management, where education can encompass patient, professional, and organizational aspects in a coherent manner by recognizing their interrelatedness.

We also have opportunities to strengthen the synergy between patient education and organizational change to inform national initiatives. In Canada, the partnership between the Canadian Pain Society and the Canadian Pain Coalition, which is a patient organization, has resulted in the Canadian Pain Summit (Canadian Pain Society, 2013). The need for a national pain strategy in Canada has been recognized, a strategy that specifically identifies educational, clinical, and research needs (Lynch, 2011). A national pain strategy will provide the impetus needed to develop a coordinated approach by education, research, and health institutions across the provinces. Such a strategy could improve the lives of many experiencing needless pain.

### ***Directions for Future Research***

While this review has identified quantitative and qualitative research approaches, few of the studies provide insight into the contextual complexities of everyday practice. Ethnography, situated in the naturalistic science paradigm, provides a means to study the cultural context of everyday practice by integrating the complexities of information and relationships to inductively generate functional associations (Benjamin, 2005). In our review, just three studies used naturalistic observation in their research design. These were conducted in a hospital setting and observed 18 to 52 registered nurses over 38 to 150 hours. Two of the three focused on both nurses and patients. The importance of understanding context using ethnography in pain research has been highlighted (Lauzon-Clabo, 2007; Manias, Botti, & Bucknall, 2002; Manias, Bucknall, & Botti, 2004), yet such studies remain a minority. Institutional ethnography, with its focus on uncovering the social organization of knowledge, as seminally detailed by Smith (1987), by studying the social interactions of people within a matrix of interconnected social processes, could be enlightening (Campbell & Gregor, 2002; Rankin & Campbell, 2009). Understanding the contextual factors known to influence knowledge translation (Estabrooks, Squires, Cummings, Teare, & Norton, 2009) could lead to the identification of interventions and opportunities for improving care.

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The review has also identified a lack of quantitative evaluative studies — that is, randomized control trials (RCTs) — perhaps highlighting the complexities and challenges of this area. While there is a need for further RCTs, a lack of contextual understanding may limit the realistic implementation of knowledge and improvement in the clinical setting. It has been noted that quantitative research methods are not as well suited for measuring organizational change, leadership of guideline implementation, and quality of patient care (Curry, Nembhard, & Bradley, 2009). All are important outcomes for improving pain management. Pragmatic approaches, utilizing mixed methods, could offer realistic evaluations that are contextually sensitive. A mixed-method paradigm draws on complementary functions of quantitative and qualitative research methods to uncover the complexities of pain management practices, as classically detailed by Jick (1979). Mixed methods have been used successfully in pain research (Carr, Brockbank, Allen, & Strike, 2006; Gagliese et al., 2009; Twycross & Finley, 2013).

The majority of the studies were limited by having been conducted at a single site or geographical location, with just two of the studies extending data collection to the provincial level in Canada. There were no nationwide or international studies.

### ***Strengths and Limitations of the Review***

This integrative review consolidates findings from original research articles to elucidate barriers to effective pain management and identify gaps in research and policy. The literature is large and spans many years, and because we wanted to focus on current practice, our search used a 10-year timeframe (2003–13). A diverse range of publications describing the current gaps in literature, policy, and practice with respect to pain management were identified. However, only original research articles were included in the data analysis and synthesis. Grey literature was used to further support our findings.

We acknowledge that our review is limited considering that the search strategy restricted articles to those published in English. Thus, it is possible that some original research articles and secondary sources of information were missed. In addition, while international literature was used in the review, it was interpreted to align with the Canadian context.

Moreover, we did not include a quality assessment of studies, in keeping with Whittemore and Knafl (2005). While it is possible that some of the included studies lacked scientific rigour, there is considerable consistency across the findings. We believe that a quality assessment could have precluded us from capturing relevant literature sufficient to fully explore the depth and breadth of our topic. Lastly, we acknowledge that the dearth of intervention studies identified through our search strategy

may be a result of not specifically consulting databases for registered controlled trials, such as the Cochrane Central Register of Controlled Trials database. However, such trials would be unlikely to elicit meaningful interventions related to the complexity of pain management in the clinical setting, and this approach was not commensurate with the integrative review methodology advocated by Torraco (2005) and by Whittemore and Knafl (2005). Our search strategy targeted nursing-specific databases.

## **Conclusion**

This integrative review has identified a significant body of literature describing patient, professional, and organizational barriers to pain management. It has also identified the complexities and interrelatedness of these barriers and makes several suggestions for future research that could bridge some of the gaps and improve pain care. There is a wide gap in the patient/public understanding of pain management, and this appears to play a central role in the quality of nurse–patient interactions. Related to this is the compelling ongoing evidence of shortfalls in the educational preparation of nurses regarding pain management. While initiatives to improve this situation continue, there is little to suggest that significant change is imminent. New approaches, such as harnessing the patient’s voice through public education, may be an additional lever for change. Reframing pain education as a public health initiative could offer a compelling opportunity for sustainable improvement, as could strengthening partnerships between patients and health-care providers.

In Canada and in other countries where nurses are able to prescribe medications, including analgesics (and particularly opioids), there are tremendous opportunities for the APN to take a leadership role in pain management. Nurses can also play a leadership role in sound pain policies at the institutional level and can mitigate many of the organizational barriers. Nurse leaders who advocate for improved pain management need a stronger and more persistent voice.

Finally, research approaches such as institutional ethnography and pragmatic mixed methods, which provide contextual understanding of how pain is managed, are recommended. Research to evaluate organizational interventions would be particularly important, as it is conducted across provinces/states rather than in one geographical location. The delivery of high-quality care that encompasses effective pain management strategies must be a priority for nursing.

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**Disclosure:** None of the authors has any conflicts of interest or research financial statements to disclose.

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