Development of a Cancer Pain Management Learning Module for Registered Nurses in Palliative Home Care

by © Gina C. Fleming

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ABSTRACT

Background: There has been a recent shift to provide cancer treatments in outpatient settings, which presents challenges for patients and healthcare providers to achieve optimal pain management. Pain is the most feared symptom of newly diagnosed cancer patients and it is the most common symptom experienced by patients with advanced cancer. Despite extensive advances in treatments and research, cancer patients continue to be undertreated for pain.

Purpose: To develop an introductory learning module for new Registered Nurses (RNs) to the palliative home care program. Increasing nurses' knowledge of cancer pain management will improve patient outcomes by enabling nurses to assess and interpret relevant clinical findings.

Methods: A comprehensive review of the literature was conducted to identify content for the learning module. Interviews were conducted with the Medical Director and Clinical Nurse Specialist (CNS) and a focus group was facilitated with four RNs to identify content and explore barriers related to cancer pain management. Ethical approval was obtained from the Regina Qu'Appelle Health Region (RQHR) Research Ethic Board (REB) prior to the colleague consultation process.

Results: A learning module was developed based on findings from the literature and colleague consultations.

Conclusion: A comprehensive learning module has been developed for new Palliative Home Care Registered Nurses (RNs). The learning module will be forwarded to the Program Director of Palliative Care Services as a learning resource for nursing orientation.

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I would also like to thank my husband and my family for their unwavering support as I've pursued this degree.

Mary, thank you for teaching me how to be a nurse.

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Background

The purpose of this practicum project is to develop an introductory learning module for new Registered Nurses (RNs) to the Palliative Home Care Program to develop foundational knowledge and assessment skills related to cancer pain management. Cancer pain management is an essential aspect of palliative care and nurses often feel challenged to provide this care in a community setting (McClement, Care & Dean, 2005). Nurses working in Palliative Home Care work with a high degree of autonomy while providing care to complex patients. Nurses must possess strong assessment skills and understanding of pharmacological and non-pharmacological measures to adequately manage patients' pain in a home setting. Physicians rely on nurses' assessment findings because these patients are often too sick to attend scheduled appointments; therefore, medication adjustments are frequently completed by telephone consult. Family physicians may also be unfamiliar or uncomfortable prescribing high doses of opioids necessary for pain management due to the risk for addiction (Srivastava, Kahan & Jiwa, 2012). In such circumstances, nurses must be knowledgeable about cancer pain management principles in an effort to collaborate with physicians to ensure clients receive appropriate treatment and care.

Objectives

1. Conduct a comprehensive literature review to determine cancer pain management education program content for RNs working in palliative home care.
2. Collaborate with key informants and stakeholders to identify gaps in nursing knowledge and cancer pain management program content.

3. Develop an educational program for cancer pain management in palliative home care based on nurses' needs and organizational resources.
4. Demonstrate an application of advanced nursing practice competencies in the following areas: clinical, research, leadership and collaboration.

Methods

An integrative literature review was conducted to examine barriers related to cancer pain management and to identify relevant content for an introductory learning module (Appendix A). Formal consultations were conducted with members of the Palliative Home Care team, including in-person interviews with the Medical Director and Clinical Nurses Specialist (CNS). A focus group was facilitated with two novice and two experienced RNs from the Palliative Home Care program. Ethical approval was obtained from the Regina Qu'Appelle Health Region (RQHR) Research Ethics Board (REB) prior to completing the colleague consultation process, which was deemed as a requirement by the organization in order to share findings with any outside agencies or affiliates.

Summary of the Literature

The purpose of the literature review was to identify relevant content for the cancer pain management learning module and examine barriers related to cancer pain management care. A literature search was conducted using the OneSearch feature of the Memorial University library website. This feature reviews multiple databases simultaneously. The following search terms were used: "cancer pain" and "nursing" and "home care". Other search terms including " cancer pain" and "nursing" and "community. In total, 15 journal articles were selected, consisting of quantitative research studies and integrative literature reviews. Canadian clinical practice guidelines were also included

from Cancer Care Ontario (2010) and the Government of British Columbia (2011) as these publications provide national evidence based practice recommendations for cancer pain and symptom management. Additional sources were also identified through the Google Scholar search feature, in addition to supplemental information from relevant agencies and government websites.

Nursing Theory

Humanistic Nursing Theory (HNT) was selected as the theoretical framework for this practicum project as its core concepts are intuitive for palliative care and pain management. HNT is a meta-theory conceptualized by Paterson and Zderad that views nursing as a course of actions designed to promote patient growth and wellbeing (as cited in Wu & Volker, 2011). Each person is regarded as a unique individual who will respond differently to the same situation. Nurses' attitudes and beliefs surrounding pain management can present as barriers for effective pain management; therefore, accepting each person's unique experience is imperative for providing optimal patient care (Deandrea, Montanari, Moja & Apolone, 2008).

A key feature of HNT is that people have the freedom to choose how they respond to a situation. Healthcare providers are often challenged to provide cancer pain management care because assessment findings are primarily founded on the patient's subjective experience (Cancer Care Ontario, 2010; Song, Eaton, Gordon, Hoyle & Doorenbos, 2015). Engaging in HNT encourages nurses to develop an understanding of the patient's perspective, and enables the nurse to act as a facilitator charged with assisting the patient to reach an optimal state of well being.

Summary of the Literature

Cancer is the leading cause of mortality in Canada and an estimated 51% of Canadians will be diagnosed with cancer at some point in their lives (Canadian Cancer Society, 2015; Statistics Canada, 2015). Pain is the most feared symptom of newly diagnosed cancer patients and an estimated 64% of patient with advanced cancer experience pain (Aiello-Laws, Reynolds, Deizer, Peterson & Bakitas, 2009; Deandrea, et al., 2008). Despite advances in treatment and research, healthcare providers continue to undervalue pain management and implications for patient's quality of life. The following section will summarize evidence based practice recommendations and identify barriers for cancer pain management.

Assessment

Healthcare providers must be able to conduct a comprehensive pain assessment consisting of the following: physical effects of pain, functional effects and implications for activities of daily living, spiritual implications and psychological factors (i.e. anxiety, mood, implications for interpersonal relationships) (Cancer Care Ontario, 2010). Pain assessment is founded on subjective data; therefore the client should be the primary assessor of his or her level of pain (Cancer Care Ontario, 2010; Song et al., 2015). Standardized pain assessment tools, such as the 0-10 verbal or visual analog scale are easy to administer, and have been validated for clinical practice. Reassessment is necessary to determine the effectiveness of treatment and the frequency of reassessment should be determined by pain severity and experienced distress.

Nurses must be able to interpret clinical findings and recognize pain may be associated with an underlying condition. In contrast, the sudden onset of new pain may

suggest cancer progression or reoccurrence (Government of British Colombia, 2011; Cancer Care Ontario, 2010). Nurses must be able to accurately interpret and communicate assessment findings with other healthcare providers to ensure clients receive necessary treatment and follow up. Palliative patients may also experience fears related to disease progression, death and dying. It is essential that nurses assess for total pain, which is the physical, psychological, spiritual and social and social burden of pain and include a referral for psychosocial support services (Cancer Care Ontario, 2010; Prem et al., 2011).

Pain management treatments are divided by pain etiology: nociceptive, neuropathic or mixed. Nociceptive pain results from damage to somatic and visceral structures, leading to the transmission of a pain message by activating nociceptors (pain receptors) in the skin, viscera, muscles or connective tissues. Neuropathic pain occurs when there is damage to the nerve fibers of the central or peripheral nervous system (Aiello-Laws el al., 2009). Treatment options vary depending on the origin of pain.

Treatments

Opioids are the first line of treatment for cancer pain due to their proven effectiveness and predictable adverse outcomes. Patients should be prescribed a scheduled dose around the clock and breakthrough doses as needed to achieve optimal pain management (Aiello-Laws et al., 2009). The oral route is considered the first choice because it is the easiest, least invasive and safest route for medication administration (Aiello-Laws et al., 2009; Cancer Care Ontario, 2010). All patients who experience moderate to severe pain should be started on a trial dose of opioid analgesics. Patients and families need to be educated about the appropriate use of opioids and anticipated adverse effects, such as constipation, nausea and sedation. Opioid rotation is the practice of

switching from one opioid analgesic to another, and is commonly used when patients do not respond well to one opioid (i.e. pain is not well managed, side effects become intolerable) but may have better results with another drug from the same classification. Opioid selection is determined based on the patient's age, renal function, severity and origin of pain, and whether the patient had previously taken opioids for pain management (Gaguski & Karcheski, 2013).

Analgesics such as acetaminophen and non-steroid anti-inflammatory drugs (NSAIDS) are also used for the treatment of cancer pain. They can be used alone to relieve mild pain or as an adjuvant with opioids to decrease the total dose of opioid needed to relieve moderate cancer pain. Other commonly prescribed adjuvants include cannabinoids and bisphosphonates. Cannabinoids have proven to be effective in the treatment of neuropathic pain and biphosphonates are useful for treating cancer pain related to bone metastases when analgesics or radiation therapy are ineffective (Cancer Care Ontario, 2010; Vallerand, Musto & Polomano, 2011). Neuropathic pain requires a multimodal approach consisting of opioids and co analgesics such as a tricyclic antidepressant or anticonvulsants as co-analgesics typically have a slower onset for pain relief (Aiello-Laws et al., 2009). Non-pharmacological interventions for cancer pain management include radiation and surgical procedures to stabilize joints or bones. Complementary alternative practices are supportive methods used to supplement conventional cancer treatment options, such as deep breathing and relaxation exercises (Cancer Care Ontario, 2010).

Nursing Implications

Nurses and other healthcare providers are often challenged to provide comprehensive pain management for cancer patients due to barriers including: healthcare providers' attitudes and beliefs, lack of knowledge, and need for communication skills necessary for collaboration (Keefe & Wharrad, 2012). Nurses require an extensive knowledge of pain management treatment options, specifically opioid management and other pharmacological and non- pharmacological interventions (Government of BC, 2011; Cancer Care Ontario, 2010; World Health Organization [WHO], 2016). Effective communication skills are essential for nurses to present pain management assessment findings and recommendations in an acceptable manner for patients, caregivers and other members of the healthcare team (Vallerand, Collins- Bohler, Templin, & Hasenau, 2007). Nurses need to understand how concerns related to opioid abuse and misuse may present as barriers for prescribers and ensure they have the knowledge and communication skills necessary to objectively advocate in an effort to improve pain management outcomes (Vallerand et al., 2007; Srivastava et al., 2012).

Summary of Consultations

Extensive colleague consultations were completed during the first half of the practicum to gather data related to learning module content and barriers for provider cancer pain management in a community setting (see Appendix B).

Methods

As per the RQHR Research Ethics Board Chair, ethical approval was required prior to completing colleague consultations because findings from the consultation process are documented in the final practicum report, which will be available online.

Furthermore, ethical approval was also required in order to share practicum findings with outside agencies or affiliates. Clients receiving Palliative Home Care services also receive care at the Saskatchewan Cancer Agency and in hospice environments; therefore, it was a priority to ensure the proposed educational program would meet these requirements.

Consultation participants were recruited based on their knowledge and experience in palliative care. In total, two in-person interviews were conducted with the Medical Director and Clinical Nurse Specialist (CNS) and one focus group was facilitated with two novice and two experienced Palliative Home Care RNs. The Program Development Educator was invited to participate via an email questionnaire; however, she declined to participate. All individuals provided written informed consent prior to participating in the consultation process. Field notes were used as the primary source of data collection and results were analyzed using constant comparative analysis. Findings were validated with participants by summarizing themes and seeking clarification during the interviews and focus group conversation.

Findings

All nursing participants relayed they acquired knowledge related to cancer pain management after completing foundational nursing education requirements. Sources of information included: attending national and international conferences, presentations by pharmaceutical representatives and nursing education days in oncology and palliative care. The CNS also completed advanced certification as recognized by the Canadian Hospice Palliative Care Association. Participants relayed nurses and physicians experience knowledge deficits related to cancer pain management and suggested the following content should be included for a comprehensive pain assessment: pain etiology,

implications for functional status, distinguishing between the patient's pain and the family's perception of the patient's pain, and recognizing total suffering.

A challenge identified by participants was family physicians under medicating patients experiencing cancer pain. Other challenges include clients receiving multiple prescriptions from different physicians (e.g. oncologist, family physician and palliative care physician.) Participants used the term "not following directions" to describe issues associated with clients or families not taking medications as directed. These behaviors may be related to medication side effects or client and/or family's perceptions regarding opioids and pain management. Nursing participants identified concerns related to medication errors, client and family teaching, and Medical Assistance in Dying (MAID). These issues were labeled by nursing participants as "fears of the nurse."

Based on colleague consultations and findings from the literature review, the following content was included in the cancer pain management learning module: pain assessment, opioid medications, adjuvant medications and non-pharmacological interventions. Participants also suggested including the following content: how to complete an independent double check when administering medications in a community setting, a link to the Saskatchewan Drug Plan to verify prescription coverage, additional resources for continuing competency requirements and a contact person for additional learning needs.

In conclusion, the colleague consultation process was integral for the development of the cancer pain management learning module. Additional content was included based on findings from the colleague consultations to ensure the learning module would provide

a comprehensive overview of cancer pain management principles for new RNs to the Palliative Home Care department.

Summary of the Resource

The cancer pain management learning module (Appendix C) was developed during the first part of N6661. The decision was made to develop an introductory learning module for new RNs to Palliative Home Care to provide a foundational knowledge of cancer pain management principles. Further discussions with the Medical Director and CNS have suggested future collaboration, focusing on a partnership with medicine and nursing to develop supporting resources such as physician pre-printed orders for palliative care, which is beyond the scope of this practicum project.

The cancer pain management learning module consists of evidence based practice recommendations for the following areas: pain assessment, opioid medications, equianalgesic dosing principles, breakthrough cancer pain management, management of adverse effects, adjuvant medications, non pharmacological interventions, communications and teaching strategies, medication administration and the Saskatchewan Drug Plan. Additional references have also been provided to facilitate nurses' self directed learning.

Pain Assessment

The content presented in the learning module focuses on conducting a comprehensive pain assessment, distinguishing between pain etiologies, adopting tools to facilitate client self reporting and acknowledging that the client should be the primary assessor of his or her pain. These principles also align with HNT, which encourages nurses to recognize each individual's unique perspective and consider how each person

may respond differently to the same situation. Nurses who engage in HNT are better equipped to understand how pain affects an individual's life from a holistic perspective, which is essential to understand and recognize the burden of total pain and implications for clients and families.

Opioid medications remain the cornerstone of cancer pain management; therefore, there is considerable emphasis placed on opioid medications, equianalgesic dosing principles and breakthrough cancer pain management in the learning module. Findings from the literature review suggest nurses are ill equipped to provide cancer pain management care in a community setting due to knowledge deficits and challenges associated with the practice environment. Nursing participants also echoed these sentiments during the focus group. Content presented in the learning module reviews principles of opioid medication management, including baseline pain control, route of administration and titrating doses to achieve optimal pain management.

Equianalgesic dosing principles are reviewed in the learning module as findings from the literature review and consultations suggest new staff may be unfamiliar with this content. Nurses should also be knowledgeable of breakthrough cancer pain (BTCP) management, specifically how to distinguish between BTCP and end of dose (EOD) failure. End of dose failure suggests a medication review, while frequent exacerbations of BTCP may suggest an underlying condition, disease progression or the need for opioid rotation.

Clients using opioid medications experience three common side effects: nausea and vomiting, sedation and opioid inducted constipation (Cancer Care Ontario, 2010; Fraser Health, 2006). Nurses need to conduct comprehensive client and family teaching

regarding the management of such side effects in an effort to promote medication compliance and optimize patient outcomes related to pain management. The learning module focuses on the treatment and management of these three primary side effects, specifically opioid-induced constipation, which requires the prophylactic use of stimulant and osmotic laxatives.

Adjuvant medications are typically used in conjunction with opioids for cancer pain management. The learning module reviews five common adjuvants: acetaminophen and non steroid anti-inflammatories (NSAIDs), biphosphonates, cannabinoids, corticosteroids, antidepressants/anticonvulsants and implications for cancer pain management treatment. Non-pharmacological interventions are also addressed in this resource, including radiation, surgery, anesthetic interventions and complementary alternative practices.

Communication and teaching strategies are explored in the learning module. Clients and families are more likely to comply with prescribed opioid medication regimes if healthcare providers acknowledge concerns related to opioids and address management of adverse effects (Cancer Care Ontario, 2010.) Palliative Home Care RNs also practice with a high degree of autonomy; therefore, they must possess strong communication skills in order to effectively relay assessment findings and collaborate with other healthcare providers. Additional content included in the cancer pain management learning module relates to medication administration, the Saskatchewan Drug Plan and supplementary resources for further reference. These elements were included based on feedback from the colleague consultation process in order to address nurses' concerns related to dosage calculation errors and promote medication compliance by decreasing the

financial burden associated with prescription drug coverage. Participants requested the inclusion of additional resources because nurses may struggle to identify and access scholarly sources necessary for self directed learning.

Discussion of Advanced Nursing Competencies

The Canadian Nurses Association has developed a framework to outline the expectations associated with advanced nursing practice. Competencies are defined as "the specific knowledge, skills, judgments and personal attributes required for registered nurses to practice safely and ethically in a designated role and setting" (Canadian Nurses Association [CNA], 2008a, p.22). Advanced nursing competencies demand extensive nursing knowledge, theory and research as influenced by clinical experience (CNA, 2008a). Throughout N6660 and N6661, I have had the opportunity to develop and demonstrate advanced nursing competencies in the following areas: clinical, research, leadership, and consultation and collaboration.

Clinical competency relates to extensive knowledge regarding within a specialized area of nursing. Advanced practice nurses are challenged to integrate nursing practice with theory and in-depth knowledge to "…use quantitative and qualitative data from multiple sources when making clinical decisions and initiating and managing change… plan, initiate, coordinate and conduct educational programs based on needs, priorities and organizational resources" (CNA, 2008a, p. 22-23). I have developed clinical competency by conducting a comprehensive literature review to examine relevant content for cancer pain management nursing education. Data collected during the colleague consultation phase provided valuable insight regarding nurses' needs and content was included in learning module to ensure these issues were addressed. The future vision for this project

is to post this learning module to the RQHR intranet as an online resource as this method of delivery will maximize the organization's resources by reaching the greatest number of participants.

Advanced nursing practice requires nurses to "generate, synthesize and use evidence for nursing practice" (CNA, 2008a p. 23). Over the course of N6660 and N6661, I have examined nursing literature including research studies and clinical practice guidelines to develop an integrated literature review on cancer pain management. The REB application process also enabled me to develop research competencies necessary for advanced nursing practice. Developing a cancer pain management learning module for new RNs to the palliative home care program also presents an opportunity to integrate evidence based practice into clinical practice.

Leadership and collaboration are essential elements of advanced nursing practice. I have developed nursing leadership by identifying learning needs associated with cancer pain management and collaborating with colleagues and stakeholders to develop an educational program targeting these needs. Nursing leaders promote an organizational culture that supports professional development, continuing education and collaborative practices (Canadian Nurses Association [CNA], 2008b). I shared articles of interest with my nursing colleagues while completing the literature review and developing the learning module. It became evident during the consultation process that many nurses are committed to lifelong learning, but they may not have the skills or access to identify and retrieve scholarly sources of information. Based on colleague consultation feedback, I included additional resources to facilitate nurses' self-directed learning. Strengthening nurses' knowledge regarding cancer pain management reflects a

commitment for professional development, continuing education, and enables nurses to provide valuable input as members of the interprofessional team.

Advanced practice nurses "…consult and collaborate with members of the healthcare team to develop quality improvement and risk management strategies; …practice collaboratively and build effective coalitions…" (CNA, 2008a, p. 26). I conducted consultations during the development of the cancer pain management learning module by facilitating one focus group conversation and conducting two in-person interviews. I sought feedback regarding the resource and approached key stakeholders for input. Senior leaders were also consulted prior to commencing this project and during the development of the learning module.

Next Steps

The learning module has been shared with the Medical Director and will be shared with the Program Director for final approval. The Program Director will submit the learning module to the Program Development Educator (PDE) to be included in new hire RN orientation for Palliative Home Care with a target date of May 2016. A presentation has also been scheduled for April to share practicum findings during the Palliative Care Interdisciplinary rounds. This presentation was initially scheduled for March; however, it had to be rescheduled to due staffing demands. There has also been discussion to form a Palliative Care Community of Practice, which would consist of collaboration between members of the Palliative Care interdisciplinary team to share knowledge and continue developing learning resources and supporting documents (i.e. pre-printed orders) to support excellence in palliative care practice.

Since starting this practicum in September 2016, there have been significant staffing changes to the Palliative Home Care Program. The program manager is leaving her position, the Palliative Care portfolio has been reassigned to a new PDE and two of the four focus group participants have left their positions. The CNS position has also been reclassified as a Nurse Practitioner (NP.) In addition, the Palliative Home Care program is now being integrated into the Primary Health Care Networks, which has resulted in significant organizational change. At times, it has been challenging to obtain staff involvement. The vision for this practicum project was to utilize online learning as a method to share the learning module with nursing staff from other practice areas. Moving forward, the learning module will be introduced in Palliative Home Care nursing orientation and an electronic version of the learning module will be provided to the Program Director to be uploaded to the Intranet by IT in the future.

Conclusion

This project has highlighted the importance of cancer pain management as an essential aspect of palliative care nursing. In order to optimize patient outcomes, nurses need to have a strong foundational understanding of evidence based cancer pain management principles. Findings from the literature and colleague consultations support the need for a comprehensive learning module aimed to support new Palliative Home Care RNs acquire specialized knowledge associated with this practice environment.

Since the development of this learning module, Palliative Home Care staff members have faced staffing and organizational change, which has presented a challenge for recruiting staff involvement. Despite such issues, there is overwhelming support for this initiative amongst senior leadership and this project has stimulated information

sharing amongst nursing staff and collaboration between nursing, medicine and members of the Palliative Home Care interdisciplinary team. The initial goal of this practicum project was to increase new nurses' knowledge and understanding of cancer pain management; however, it has also served to promote evidence-based nursing practice in a collaborative team setting.

References

Aiello-Laws, L., Reynolds, J., Deizer, N., Peterson, M & Bakitas, M. (2009). Putting evidence into practice: What are the pharmacologic interventions for nociceptive and neuropathic cancer pain in adults? *Clinical Journal of Oncology Nursing, 13*(6), 649-655. doi: 10.1188/09.CJON.649-655.

Cancer Care Ontario. (2010). Cancer Care Ontario's symptom management guides-to-practice: Pain. Retrieved from: https://www.cancercare.on.ca/CCO_DrugFormulary/Pages/FileContent.aspx?fileId=97481

Canadian Cancer Society's Advisory Committee on Cancer Statistics (2015). *Canadian Cancer Statistics 2015*. Retrieved from: http://www.cancer.ca/~/media/cancer.ca/CW/cancer%20information/cancer%20101/Canadian%20cancer%20statistics/Canadian-Cancer-Statistics-2015-EN.pdf?la=en

Canadian Nurses Association (CNA), (2008a). *Advanced nursing practice: A national framework.* Retrieved from: https://www.cna-aiic.ca/~/media/cna/page-content/pdf-en/anp_national_framework_e.pdf

Canadian Nurses Association (CNA), (2008b). *Code of ethics for registered nurses*. Retrieved from: https://www.cna-aiic.ca/~/media/cna/files/en/codeofethics.pdf

Deandrea, S., Montanari, M., Moja, L. & Apolone, G. (2008). Prevalence of undertreatment in cancer pain. A review of published literature. *Annals of Oncology, 19,* 1985-1991. doi: 10.1093/annonc/mdn419

Fraser Health. (2006). Hospice palliative care symptom guidelines: Principles of opioid management. Retrieved from: http://www.fraserhealth.ca/media/HPC_SymptomGuidelines_Opioid.pdf

Gaguski, M. E. & Karcheski, T. (2013). Equianalgesic dosing: Principles of practice for the care team. *Clinical Journal of Oncology Nursing, 17*(1), 80-83. doi: 10.1188/13.CJON.80-83.

Government of British Columbia. (2011). *Palliative Care for the Patient with Incurable Cancer or Advanced Disease - Part 2: Pain and Symptom Management*. Retrieved from the Government of British Columbia website: http://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/palliative-pain-management#part2-pain

Keefe, G. & Wharrad, H. (2012). Using e-learning to enhance nursing student's pain management education. *Nursing Education Today, 32*(2012), 66-72. doi: 10.1016/j.nedt.2012.03.018

McClement, S., Care, D. & Dean, R. (2005). Evaluation of education in palliative care: Determining the effects on nurses' knowledge and attitudes. *Journal of Palliative Care, 21*(1), 44-48. Retrieved from: http://search.proquest.com.qe2a-proxy.mun.ca/docview/214201279?OpenUrlRefId=info:xri/sid:primo&accountid=12378

Prem, V., Karvannan, H., Charkravarthy, R., Binukumar, B., Jaykumar, S. & Kumar, S.P. (2011). Attitudes and beliefs about chronic pain among nurses- biomedical or behavioral? A cross-sectional survey. *Indian Journal of Palliative Care, 17*(3). 227-234. doi: 10.4103/0973-1075.92341

Song, W., Eaton, L.H., Gordon, D. B., Hoyle, C. & Doorenbos, A.Z. (2015). Evaluation of evidence-based nursing pain management practice. *Pain Management Nursing, 26*(4), 456-463. doi:10.1016/j.pmn.2014.09.001

Srivastava, A., Kahan, M. & Jiwa, A. (2012). Prescription opioid use and misuse: Piloting an educational strategy for rural primary care physicians. *Canadian Family Physician, 58*(4), 210-216. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3325473/

Statistics Canada. (2015). *The 10 leading causes of death, 2011.* Retrieved from the Statistics Canada website http://www.statcan.gc.ca/pub/82-625-x/2014001/article/11896-eng.htm

Vallerand, A.H., Collins- Bohler, D., Templin, T. & Hasenau, S.M. (2007). Knowledge of and barriers to pain management in caregivers of cancer patients receiving homecare. *Cancer Nursing, 30*(1), 31-37. Retrieved from: https://www.ncbi.nlm.nih.gov/pubmed/17235217

Vallerand, A.H., Musto, S. & Polomano, R.C. (2011). Nursing's role in cancer pain management. *Current Pain and Headache Reports, 15*(4), 250-262. doi: 10.1007/s11916-011-0203-5.

World Health Organization (2016). *WHO's cancer pain ladder for adults.* Retrieved from: http://www.who.int/cancer/palliative/painladder/en/

Wu, H.L & Volker, D. L. (2011). Humanistic nursing theory: Application to hospice and palliative care. *Journal of Advanced Nursing, 68*(2), 471-479. doi: 10.1111/j.1365-2648.2011.05770.x

Cancer pain management and implications for nursing practice: An integrative literature review

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At the beginning of the twentieth century people were more likely to die from sudden events such as infection, childbirth and accidents (Murray, Kendall, Boyd & Sheikh, 2005). Today, most people in developed countries will die over an extended period of time from conditions such as cancer, end stage organ failure and frailty associated with advanced age (Statistics Canada, 2015). Such changes have resulted in an increased demand for palliative care services to address pain and symptom management concerns. Pain management is an important element of comprehensive cancer care throughout all phases of the illness trajectory, with specific implications for end of life care (Vallerand, Collins-Bohler, Templin & Hasenau, 2007). Throughout the following paper, I will discuss relevant findings from nursing literature and clinical practice guidelines outlining evidence based practice recommendations for cancer pain management. I will also outline my proposed practicum project of a learning module to enhance nurses' knowledge of cancer pain and treatment options to improve palliative cancer patient outcomes in a community setting.

Practicum Project

My practicum project for N6660 is to develop and deliver a cancer pain management education program intended for new Registered Nurses (RNs) working in a palliative home care environment. The purpose of this practicum project is to increases nurses' knowledge and communication skills related to cancer pain management in an effort to improve patient pain management outcomes in the community setting.

Rationale for Practicum Project

An estimated 51% of Canadians will be diagnosed with cancer at some point in their lifetime and 25% of diagnosed individuals will die from the disease (Canadian

Cancer Society, 2015; Statistics Canada, 2015). Cancer treatment is now provided in outpatient community settings, which presents new challenges related to cancer pain management for healthcare providers, patients and families. This shift has resulted in a greater demand for cancer pain management education amongst nurses working in a palliative community environment because these patients are living longer with a high probability of experiencing cancer related patient throughout the course of their illness (Canadian Cancer Society, 2015; Cancer Care Ontario, 2010). The rationale for this practicum project is that improving nurses' knowledge and understanding of cancer pain management will enable nurses to optimize cancer patients' pain management in the community setting.

Nurses receive pain management education throughout the course of their foundational education program; however, this content is typically presented through lecture format, which increases knowledge, but has limited effectiveness in changing practitioners' behaviors related to clinical practice (Briggs, Carr & Whittaker, 2011). I selected e-learning as the method of delivery for this educational content because this strategy challenges nurses to be more interactive with the subject matter, improves knowledge and encourages nurses to strengthen their computer literary skills (Keefe & Wharrad, 2012). E-learning initiatives are also a cost effective method for delivering educational content and promote nurses to engage in self-directed learning.

The practicum project content will focus on improving nurses' pain assessment and reassessment skills because findings are significantly based on the patient's subjective experience. Healthcare providers often underestimate the severity of the patient's pain, and this discrepancy widens as the patient's pain intensifies (Cancer Care

Ontario, 2010). A second area of focus for this practicum project is improving nurses' knowledge of cancer pain treatment options, specifically the use of opioid medications for cancer pain management. Opioids are widely recognized as the cornerstone for cancer pain management; however, prescribers and other healthcare providers can have reservations about prescribing the high doses necessary for cancer patients to achieve tolerable pain control (World Health Organization [WHO], 2016; Srivastava, Kahan & Jiwa, 2012). The education program will address opioid equianalgesic dosing principles because nurses who provide care for cancer patients need to conduct initial and ongoing pain assessments to determine the effectiveness of the patient's current pain management treatments. An understanding of equianalgesic dosing principles enables nurses to provide valuable feedback and input regarding treatment options and collaborate with members of the healthcare team to establish a successful plan for cancer pain management. The intention for this practicum project is that by delivering educational content through e-learning initiatives, nurses working with cancer patients will be more knowledgeable and better equipped to collaborative with other healthcare providers to optimize the patient's pain control. Nurses are uniquely situated to assess the patient's pain from a holistic perspective and are often the most accessible healthcare providers for patients and families; therefore, improving nurses' knowledge and assessment skills related to cancer pain management has the potential to greatly benefit patients and families coping with a cancer diagnoses and related cancer pain.

Nursing Theory

I selected Humanistic Nursing Theory (HNT) as the theoretical framework of my practicum project. HNT is a meta-theory conceptualized by Paterson and Zderad that

views nursing as a course of actions designed to promote patient growth and wellbeing (as cited in Wu & Volker, 2011). I selected HNT for developing my practicum project because its core concepts are intuitive for palliative care and effective pain management. Each person is regarded as a unique individual with a distinct perspective and will respond differently to the same situation. Nurses' attitudes and beliefs surrounding pain management can present as barriers for effective pain management; therefore, accepting each person's unique experience is an important foundational requirement for providing optimal patient care (Deandrea, Montanari, Moja & Apolone, 2008).

A key feature of HNT is that people have the freedom to choose how they respond to a situation. HNT views nursing as goal directed activities that promote a person's human potential. Potential is comprised of "well-being" and "more being," or surpassing the limits of the disease process (Wu & Volker, 2011). Humanistic nursing is characterized by the nurse's commitment to promoting human potential by adopting a genuine presence, which is characterized by being open and available. Nurses who engage in HNT are better equipped to understand how pain affects a cancer patient's life from a holistic perspective and can appreciate how suboptimal pain management influences a person's quality of life and presents an obstacle for engaging in routine activities of daily living. Healthcare providers are often challenged to conduct pain assessments because findings are significantly based on the patient's subjective experience (Cancer Care Ontario, 2010; Song, Eaton, Gordon, Hoyle & Doorenbos, 2015). Engaging in HNT encourages nurses to develop a unique appreciation for the patient's perspective, and enables the nurse to act as a facilitator charged with assisting the patient to reach an optimal state of well being.

Literature Search

A literature search was conducted using the OneSearch feature of the Memorial University library website which reviews multiple databases simultaneously. The following search terms were used: “cancer pain” and “nursing” and “home care”. Other search terms including “ cancer pain” and “nursing” and “community. In total, 15 journal articles were selected, consisting of quantitative research studies and integrative literature reviews. I also included Canadian clinical practice guidelines from Cancer Care Ontario (2010) and the Government of British Columbia (2011) as these publications provide national evidence based practice recommendations for cancer pain and symptom management. Additional sources were identified through the Google Scholar search feature, as well as supplemental information from relevant agencies and government websites.

Prevalence of Cancer

Cancer accounts for approximately 30% of deaths in Canada as the national leading cause of mortality (Canadian Cancer Society, 2015; Statistics Canada, 2015). Cancer is the most significant cause of premature death in Canada as measured by potential years of life lost (PYLL), accounting for an estimated 40% of PYLL when compared to other leading causes of deaths (Canadian Cancer Society, 2015). In Saskatchewan, an estimated 5500 people were diagnosed with cancer in 2015 and lung, breast and prostate cancer were the most prevalent. Approximately 2400 people died from cancer in Saskatchewan in 2015 (Saskatchewan Cancer Agency, 2016). Given the prevalence cancer at the national and provincial level, there is a growing need for comprehensive cancer pain management care for patients in the community environment.

Cancer Pain Management

Cancer patients experience pain related to cancer treatment and disease progression (Song et al., 2015). Patients often seek healthcare services for pain management, but it is widely acknowledged that the healthcare providers undervalue the importance of pain management as an integral aspect of patient care (Keefe & Wharrad, 2012; Aiello-Laws, Reynolds, Deizer, Peterson & Bakitas, 2009). Pain is the most feared symptom of newly diagnosed cancer patients and it is the most common symptom experienced by patients with advanced cancer (Aiello-Laws et al., 2009). Despite extensive research and numerous advancements in pain treatment, pain is typically undertreated in cancer patients. Recent research findings suggest approximately 64% of patients with advanced cancer will experience pain and an estimated 40% of these patients will not be medicated for pain or will not be sufficiently medicated to relieve pain (Deandrea et al., 2008; Keefe & Wharrad, 2012). The following section will outline evidence based practice recommendations essential for optimal pain management.

Assessment

Healthcare providers need to conduct a comprehensive pain assessment and reassessment throughout the course of the patient's treatment in order to provide effective pain management care. A fundamental principle of pain assessment is that the patient should be the primary assessor of his or her level of pain. It is essential that healthcare providers defer to the patient whenever possible as the primary source of information regarding his or her pain experience in order to accurately assess and optimize pain management (Cancer Care Ontario, 2010; Song et al., 2015). Nurses and other healthcare providers should be aware of potential apprehensions experienced by patients and

caregivers surrounding pain management. Study findings suggest that older patients with less education are more likely to underreport pain due to fears related to analgesia and concerns that physicians will not consider curative treatment options (Closs, Chatwin & Bennett, 2009; Vallerand et al., 2007.)

Nurses often have the most direct patient contact and are uniquely situated to understand how pain directly impacts the patient's daily life (Prem et al., 2011; Vallerand, Musto & Polomano, 2011). A comprehensive pain assessment enables healthcare providers to implement early interventions to decrease the severity of acute pain and prevent patients from progressing to chronic pain (Vallerand et al., 2011). A complete pain assessment considers the following criteria: physical effects of pain, functional effects and implications for activities of daily living, spiritual implications and psychological factors (i.e. anxiety, mood, implications for interpersonal relationships) (Cancer Care Ontario, 2010). Healthcare providers should focus on the origin of pain, success of treatment and impact on the patient's and family's quality of life. Nurses can improve patient outcomes related to pain management by completing and documenting a comprehensive pain assessment, addressing inadequate pain control, and engaging members of the healthcare team in a collaborative approach to improve pain management (Vallerand et al., 2011).

Standardized pain assessment tools, such as the 0-10 verbal or visual analog scale are easy to administer in a clinical setting and have been validated for use in clinical practice (Cancer Care Ontario, 2010). These tools facilitate self-reporting, which is the most reliable method to collect pain assessment data. Reassessment is necessary to determine the effectiveness of treatment options and patients should be reassessed more

frequently based on the severity of pain and experienced distress. Cancer patients receiving care in a community setting should be reassessed at regular intervals when pain is well controlled and require at minimum daily reassessment when pain is not effectively managed (Government of British Columbia [BC], 2011; Cancer Care Ontario, 2010). Healthcare providers should also understand how to interpret pain assessment findings. Pain experienced by cancer patients is not always related to cancer and may result from an underlying chronic condition, while a sudden onset of new pain can suggest cancer progression or reoccurrence (Government of BC, 2011; Cancer Care Ontario, 2010). Nurse need to communicate pain assessment findings with other members of the healthcare team to collaborate on an appropriate course of action to address pain management concerns.

Treatments

Cancer pain treatment options are classified into two major categories: pharmacological and non-pharmacological interventions. In order to implement effective pharmacological measures to control cancer related pain, healthcare providers must determine pain etiology: nociceptive, neuropathic or mixed pain etiology. Nociceptive pain is the most common and occurs due to damage to somatic and visceral structures, which results in the transmission of a pain message by activating nociceptors (pain receptors) in the skin, viscera, muscles or connective tissues. Neuropathic pain results from damage to the nerve fibers of the central or peripheral nervous system and treatment choices may vary depending on the underlying cause of pain (Aiello-Laws el al., 2009).

Opioid drugs

The World Health Organization (WHO) analgesic ladder is often used to determine appropriate pharmacological measures to address cancer related pain (Government of BC, 2011; Cancer Care Ontario, 2010; Aiello-Laws et al., 2009). This three-step ladder divides treatment according to drug classification and encourages clinicians to use appropriate medications based on the reported severity of the patient's pain. Patients experiencing pain move up the ladder from non-opioids to strong opioids for severe pain with the addition of adjuvant therapies as needed (WHO, 2016). The WHO analgesic ladder provides a comprehensive framework to support the use of opioids for cancer pain management; these medications were often under prescribed due to practitioners' concerns related to addition, tolerance and abuse (Cancer Care Ontario, 2010; Srivastava et al., 2012). Commonly used opioids for cancer pain treatment include: morphine, hydromorphone, fentanyl and methadone. Patients should be prescribed a scheduled dose around the clock and breakthrough doses as needed to achieve optimal pain management (Aiello-Laws et al., 2009). The oral route is considered the first choice because it is the easiest, least invasive and safest route for medication administration (Aiello-Laws et al., 2009; Cancer Care Ontario, 2010). Application of an analgesic regimen using the WHO analgesic ladder is useful for treating cancer pain amongst most patients and treatment options should be based on the step of the ladder that best corresponds with the patient's severity of pain with adjustments as needed if the patient's pain progresses. All patients who experience moderate to severe pain should be started on a trial dose of opioid analgesics. Nurses and other healthcare providers must also conduct comprehensive patient teaching to ensure patients understand the importance of taking

regularly scheduled doses of analgesics to maximize pain relief (Government of BC, 2011; Cancer Care Ontario, 2010; WHO, 2016).

Opioids remain the first line of treatment for cancer pain due to their proven effectiveness and predictable adverse outcomes. In order to achieve effective pain management, nurses need to conduct in-depth patient and family teaching. Patients and caregivers may have apprehensions regarding the use of opioids for pain management and nurses must address these concerns to ensure patients understand the effectiveness of such medications for optimizing pain control (Aubin et al., 2006). Patients and families need to be educated about the appropriate use of opioids and anticipated adverse effects, such as constipation, nausea and sedation. Patients and families should be informed most adverse effects such as sedation and nausea will be short-lived; however constipation is a lasting side effect that requires ongoing pharmacological management. Opioid –naïve patients, including the frail and elderly can still benefit from opioid analgesics and practitioners are encouraged to start patients on a low dose and slowly titrate until optimal pain management is achieved (WHO, 2016). In contrast, patients already using opioids for pain management can be titrated fairly quickly to a dose that achieves optimal pain management with acceptable adverse effects. Patients who are undergoing opioid titration require close monitoring, especially in a home care environment and should be advised to contact a member of the healthcare team regarding concerns related to ineffective pain management or side effects (Aubin et al., 2006; Cancer Care Ontario, 2010).

All healthcare providers need to be knowledgeable about equianalgesic dosing principles, including opioid conversions (Gaguski & Karcheski, 2013). Equianalgesic

dosing is based on opioid selection conversion and rotation. Opioid rotation is the practice of switching from one opioid analgesic to another, and is commonly used when patients do not respond well to one opioid (i.e. pain is not well managed, side effects become intolerable) but may have better results with another drug from the same classification. Opioid selection is determined based on the patient's age, renal function, severity and origin of pain, and whether the patient had previously taken opioids for pain management. Opioid equivalency tables provide a useful starting point when switching from one opioid analgesic to another (Gaguski & Karcheski, 2013). If the patient achieved satisfactory pain control prior to conversion, the total new dose should be decreased by 25%- 50% to account for the possibility of incomplete cross-tolerance. If the previously prescribed dose provided ineffective pain relief, patients should be started at 100%- 125% of the original dose (as cited in Gaguski & Karcheski, 2013).

Non- opioid drugs

Analgesics such as acetaminophen and non-steroid anti-inflammatory drugs (NSAIDS) are also used for the treatment of cancer pain. They can be used alone to relieve mild pain or as an adjuvant with opioids to decrease the total dose of opioid needed to relieve moderate cancer pain. NSAIDS should be used with caution due to gastrointestinal, cardiovascular and renal toxicity. Acetaminophen in particular should be used sparingly, with a ceiling dose of 4000mg daily and 3000mg daily for older adults (Aiellow-Laws et al., 2009; Cancer Care Ontario, 2010).

Other medications used as adjuvants for cancer pain management include cannabinoids and bisphosphonates. There is insufficient evidence to conclude the effectiveness of cannabinoids as a first or second line treatment for cancer pain; however,

these medications have proven to be effective in the management of refractory neuropathic pain. Limited evidence suggests bisphosphonates are useful for treating cancer pain related to bone metastases but there is not enough evidence to support using bisphosphonates as a first line treatment. Renal toxicity is a major concern associated with the use of bisphosphonates and use is limited when analgesics or radiation therapy are ineffective for achieving bone pain relief (Cancer Care Ontario, 2010; Vallerand et al., 2011).

Breakthrough Pain

Cancer pain management requires regularly scheduled doses of analgesics and the prescription of breakthrough medication. Breakthrough pain is described as an acute exacerbation of pain that occurs in the presence of well-controlled background pain and is characterized as sudden, intermittent and intense. (Wengström, Geerling, & Rustøen, 2013). Nurses providing care for cancer patients should be knowledgeable about breakthrough cancer pain (BTCP) because it is an important element of a comprehensive cancer pain assessment; it is often under treated amongst cancer patients and significantly impacts a person's quality of life. BTCP can be divided into two major categories: spontaneous pain (idiopathic pain) and incident pain.

Idiopathic pain is irregular with no known cause. In contrast, episodes of incident pain are related to an identifiable cause and are therefore more predictable. Incident pain can be further classified into three subcategories: voluntary incident pain (pain is brought on by a voluntary action), non- volitional incident pain (bought on by a non voluntary act) and procedural pain associated with a therapeutic intervention (Wengström, et al., 2013.) Although clinical presentation and experience varies from patient to patient, BTCP

usually presents with a rapid onset and is characterized as severe to intense in nature. It typically reaches its peak within five minutes and last between 30-60 minutes, and can occur several times throughout the day (Wengström et al., 2013; Cancer Care Ontario, 2010). It is essential to differentiate between BTCP and end of dose failure, which occurs at similar times each day usually a short time before the next dose of scheduled analgesia. End of dose failure can be remedied by increasing the scheduled dose of analgesia, where BTCP is less predictable and often requires a multidisciplinary approach using pharmacological and complementary therapies (Bunn & Griffiths, 2011; Cancer Care Ontario, 2010; Wengström et al., 2013).

The goal of BTCP management is to reduce the strength, severity and duration of episodes in an effort to decrease the burden of BTCP on an individual's quality of life. Strategies aimed to address BTCP include addressing reversible conditions, such as avoiding activities that trigger episodes of BTCP and treating the underlying cause of pain (i.e. consider radiation or bisphosphonates for bone metastases related pain). Underlying conditions such as infection also result in increased BTCP episodes, and nurses should routinely assess and address local infections before they become progressively worse (Bunn & Griffiths, 2011; Wengström et al., 2013). Non-pharmacological measures such as massage therapy, distraction, application of heat and ice and relaxation techniques may be beneficial in the treatment of BTCP and should be considered used in conjunction with pharmacological measures (Cancer Care Ontario, 2010).

Neuropathic Pain

Neuropathic pain is a common concern for cancer patients resulting from impairment of the peripheral or central nervous system. A multimodal approach consisting of opioids and co analgesics such as a tricyclic antidepressant or anticonvulsants is necessary to treat severe neuropathic pain as co-analgesics typically have a slower onset for pain relief (Aiello-Laws et al., 2009). There have been few studies that examine the effectiveness of antidepressants for the treatment of neuropathic pain; however, a systematic review concluded there is sufficient evidence to suggest antidepressants provide effective treatment as a co-analgesic (as cited in Vallerand et al., 2011). The dose required for analgesic effect is much lower than the required dose for antidepressant or anticonvulsant effects; however, nurses and other healthcare providers need to monitor patients closely for potential adverse effects such as sedation and hypotension. Healthcare providers are encouraged to adopt a multidisciplinary approach to neuropathic pain management, including appropriate consultation to a pain management specialist if the patient cannot achieve a level of acceptable pain management (Aiello-Laws et al., 2009).

Non-Pharmacological Treatments

Non-pharmacological treatments and complementary therapies have also been used to manage cancer pain with varied results. Radiation therapy involves the use of high energy radiation to shrink or destroy cancer cells. Cancer patients with bones metastases who have difficultly achieving optimal pain management should be consulted to a radiation oncologist. Other options to relieve cancer pain related to bone metastases include tumor removal or other surgical procedures to stabilize joints or bones (Cancer Care Ontario, 2010).

Complementary therapies are supportive methods used to supplement conventional cancer treatment options. There is limited evidence to support the effectiveness of such treatments; however, findings suggest patients found complementary therapies including: massage therapy, aromatherapy, hypnotherapy and Reiki to be beneficial (Cancer Care Ontario, 2010). The most popular choices for complementary pain management practices are deep breathing and relaxation exercises and white, middle –age, well-educated female cancer patients were found to be most likely to engage in these non-pharmacological practices to relieve pain (Vallerand, et al., 2011).

Nursing Implications

Nurses can improve patient outcomes by increasing their knowledge of evidence-informed cancer pain management recommendations while strengthening communication and teaching skills related to pain management (Vallerand et al., 2007; Vallerand et al., 2011). Patients and families also need education to become empowered to self-manage cancer related pain. Education initiatives aimed to improve self-efficacy have been the subject of extensive nursing research in an effort to address barriers related to pain management; however, there are limited findings to suggest which methods are most effective for delivering this content (Vallerand et al., 2011).

Nurses should be aware of racial, ethnic and cultural preferences associated with pain management and consider how these factors may present challenges for members of minority groups who are struggling to achieve optimal pain management (Vallerand et al., 2011). Research indicates that white patients are more likely to try complementary methods for pain control and are typically more proactive in selecting treatment options.

Barriers for achieving pain management amongst minority groups include lower education and language skills. Nurses should be aware of how these factors can potentially affect minority groups' pain management experiences and assess for cultural and religious practices related to pain control during initial and ongoing pain assessments. In such circumstances, some patients may require additional support in the form of advocacy and additional education; however, nurses are also cautioned not to engage in overgeneralizations that can create additional pain management barriers (Vallerand et al., 2011).

Palliative cancer pain management presents a unique challenge because patients receiving palliative care in a community setting can experience pain and other symptoms such as nausea, vomiting or dyspnea simultaneously (Government of BC, 2011). These complex care needs can be challenging in a community environment and patients may require opioid rotation and frequent dose readjustments to manage increasing pain severity and balance adverse effects (Gaguski & Karcheski, 2013). Other concerns experienced by palliative patients include fears related to disease progression, death and dying. It is essential that nurses working in such settings assess and address these concerns by adopting a multidisciplinary approach including psychosocial support services (Cancer Care Ontario, 2010; Prem et al., 2011).

Nurses need effective communication skills to present pain management assessment and recommendations in an acceptable manner for patients, caregivers and other members of the healthcare team (Vallerand et al., 2007). Pain management outcomes are directly related to continuity of care, and developing a therapeutic relationship is essential for patients to build trust and accept suggestions from nurses.

Patients struggling to achieve optimal pain management in a community setting rely on the nurses' ability to effectively communicate assessment findings with other members of the healthcare team, including physicians. Nurses need to understand how concerns related to opioid abuse and misuse may present as barriers for prescribing practitioners and ensure they have the knowledge and communication skills necessary to objectively advocate in an effort to improve pain management outcomes (Vallerand et al., 2007; Srivastava et al., 2012).

Conclusion

Cancer is the leading cause of death amongst Canadians and cancer pain management is an important element of care for palliative and non- palliative cancer patients (Canadian Cancer Society, 2015). Nurses and other healthcare providers are often challenged to provide comprehensive pain management for cancer patients due to barriers including: healthcare providers' attitudes and beliefs, lack of knowledge, and need for communication skills necessary for collaboration (Keefe & Wharrad, 2012). Palliative cancer patients also require close monitoring due to the unique nature of disease progression and pain etiology (Cancer Care Ontario, 2010). Comprehensive pain assessment skills are vital for nurses working with cancer patients; however, nurses and other healthcare providers often struggle to provide effective pain management due to the subjective nature of pain assessment and reassessment. Nurses also require an extensive knowledge of pain management treatment options, specifically opioid management and other pharmacological and non- pharmacological interventions (Government of BC, 2011; Cancer Care Ontario, 2010; WHO, 2016). An e-learning program aimed to strengthen nurses' knowledge of cancer pain management has the potential to improve

nurses' knowledge and which may lead to better patient outcomes related to cancer pain management.

References

Aiello-Laws, L., Reynolds, J., Deizer, N., Peterson, M & Bakitas, M. (2009). Putting evidence into practice: What are the pharmacologic interventions for nociceptive and neuropathic cancer pain in adults? *Clinical Journal of Oncology Nursing, 13*(6), 649-655. doi: 10.1188/09.CJON.649-655.

Aubin, M., Vezina, L., Parent, R., Fillion, L., Allard, P., Bergeron, R. Dumont, S. & Giguere, A. (2006). Impact of an educational program on pain management in patients with cancer living at home. *Oncology Nursing Forum, 33*(6), 1183-1188. doi: 10.1188/06.ONF

Briggs, E.V., Carr, E.C. & Whittaker, M. (2011). Survey of undergraduate pain curricula for healthcare professionals in the United Kingdom. *European Journal of Pain, 15*(8), 789-795. doi: 10.1016/j.ejpain.2011.01.006

Bunn, R.J. & Griffiths, M. (2011). Understanding and managing breakthrough pain. *Journal of Community Nursing, 25*(3), 25-29. Retrieved from: http://search.proquest.com.qe2a-proxy.mun.ca/docview/872360693?rfr_id=info%3Axri%2Fsid%3Aprimo

Cancer Care Ontario. (2010). Cancer Care Ontario's symptom management guides-to-practice: Pain. Retrieved from: https://www.cancercare.on.ca/CCO_DrugFormulary/Pages/FileContent.aspx?fileId=97481

Canadian Cancer Society's Advisory Committee on Cancer Statistics (2015). *Canadian Cancer Statistics 2015*. Retrieved from: http://www.cancer.ca/~/media/cancer.ca/CW/cancer%20information/cancer%201

01/Canadian%20cancer%20statistics/Canadian-Cancer-Statistics-2015-EN.pdf?la=en

Closs, S.J., Chatwin, J. & Bennett, M.I. (2009). Cancer pain management at home (II): Does age influence attitudes towards pain and analgesia? *Support Care Cancer, 17,* 781-786. doi: 10.1007/s00520-008-0548-4

Deandrea, S., Montanari, M., Moja, L. & Apolone, G. (2008). Prevalence of undertreatment in cancer pain. A review of published literature. *Annals of Oncology, 19,* 1985-1991. doi: 10.1093/annonc/mdn419

Gaguski, M. E. & Karcheski, T. (2013). Equianalgesic dosing: Principles of practice for the care team. *Clinical Journal of Oncology Nursing, 17*(1), 80-83. doi: 10.1188/13.CJON.80-83.

Government of British Columbia. (2011). *Palliative Care for the Patient with Incurable Cancer or Advanced Disease - Part 2: Pain and Symptom Management*. Retrieved from the Government of British Columbia website: http://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/palliative-pain-management#part2-pain

Keefe, G. & Wharrad, H. (2012). Using e-learning to enhance nursing student's pain management education. *Nursing Education Today, 32*(2012), 66-72. doi: 10.1016/j.nedt.2012.03.018

Keyte, D. & Richardson, C. (2010). Re-thinking pain strategies: Pain a new model using e-learning and PBL. *Nurses Education Today, 31*(2), 117-121. doi: 10.1016/j.nedt.2010.05.001

Murray, S.A., Kendall, M, Boyd, K. & Sheikh, A. (2005). Illness trajectories and palliative care. *British Medical Journal, 330*, 1007-1011. doi:10.1136/bmj.330.7498.1007

Prem, V., Karvannan, H., Charkravarthy, R., Binukumar, B., Jaykumar, S. & Kumar, S.P. (2011). Attitudes and beliefs about chronic pain among nurses- biomedical or behavioral? A cross-sectional survey. *Indian Journal of Palliative Care, 17*(3). 227-234. doi: 10.4103/0973-1075.92341

Saskatchewan Cancer Agency. (2016). *Cancer Statistics*. Retrieved from http://www.saskcancer.ca/Default.aspx?DN=b6d1ec26-b59d-400a-aa40-0d8c2d3f535e

Song, W., Eaton, L.H., Gordon, D. B., Hoyle, C. & Doorenbos, A.Z. (2015). Evaluation of evidence-based nursing pain management practice. *Pain Management Nursing, 26*(4), 456-463. doi:10.1016/j.pmn.2014.09.001

Srivastava, A., Kahan, M. & Jiwa, A. (2012). Prescription opioid use and misuse. *Canadian Family Physician, 58*(4), 210-216. Retrieved from: http://www.cfp.ca/content/58/4/e210.long

Statistics Canada. (2015). *The 10 leading causes of death, 2011.* Retrieved from the Statistics Canada website http://www.statcan.gc.ca/pub/82-625-x/2014001/article/11896-eng.htm

Vallerand, A.H., Collins- Bohler, D., Templin, T. & Hasenau, S.M. (2007). Knowledge of and barriers to pain management in caregivers of cancer patients receiving homecare. *Cancer Nursing, 30*(1), 31-37. Retrieved from: https://www.ncbi.nlm.nih.gov/pubmed/17235217

Vallerand, A.H., Musto, S. & Polomano, R.C. (2011). Nursing's role in cancer pain management. *Current Pain and Headache Reports, 15*(4), 250-262. doi: 10.1007/s11916-011-0203-5.

Wengström, Y., Geerling, J. & Rustøen, T. (2013). European oncology nursing society breakthrough cancer pain guidelines. *European Journal of Oncology Nursing, 18*(2), 127-131. doi:10.1016/j.ejon.2013.11.009

World Health Organization (2016). *WHO's cancer pain ladder for adults.* Retrieved from: http://www.who.int/cancer/palliative/painladder/en/

Wu, H.L & Volker, D. L. (2011). Humanistic nursing theory: Application to hospice and palliative care. *Journal of Advanced Nursing, 68*(2), 471-479. doi: 10.1111/j.1365-2648.2011.05770.x