Ambulatory Oncology Nurses Perspectives of Patient-Reported Outcomes

by

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Abstract

Background

Patients in Alberta report significantly lower levels of satisfaction than the national average in terms of physical comfort, coordination and integration of care, information, communication and education. As a result, patient-reported outcome measures (PROM) were developed into a tool called, “Putting Patients First” (PPF) and has been introduced to select CancerControl Alberta (CCA) sites as a potential improvement strategy. Patient-reported outcomes offer the health care provider a window into the unique experience of each patient and can be used as a communication tool to understand the patient’s care needs. Nurses are commonly the first-line health care provider in the outpatient oncology setting, and their clinical judgement and decision making are essential for high-quality, safe patient-centred care. Much research exists surrounding patient and physician perspectives of PRO’s but little is known regarding nursing perspectives on the topic.

Objectives

The aims of this comprehensive review were to synthesize the current literature from 2008 to 2018, on the use of PROs/PROMs by ambulatory oncology nurses and describe their perspectives on, attitudes about, and experiences using PROs/PROMs, and to determine valuable characteristics and projected outcomes.

Methods

A comprehensive mixed methods literature review was conducted from September 2018 to April 2019 to understand nursing perspectives and experiences with PRO’s in the ambulatory oncology setting. Multiple databases were searched including, Academic Search Complete, CINAHL,

Ovid and Ebsco Medline, and PubMed, revealing only 7 articles that fully met the inclusion criteria.

Results

Three general themes emerged discussing accuracy of PROMs, multidisciplinary acceptability of PROMs in the ambulatory oncology setting, and nursing perspectives of PROMs. Analysis of perceived limitations of PROMs revealed that they do not effectively distinguish symptoms or are not disease-specific. It also revealed difficulties experienced while using PROMs such as disruption to workflow and additional workload. These perceived limitations could provide nurse educators and administrators with initial actionable approaches for nurse education and resource planning.

Conclusion

This comprehensive review identified themes and potential opportunities to assist ambulatory oncology nurses in their practise of PROM utilization. Further research is required to identify center-specific needs, inform future nursing practice standards and to promote the adoption of true patient-centred care.

Keywords: *patient-reported outcomes, ambulatory oncology, nurses perspectives.*

Preface

This thesis is a publication based thesis and the original work by Danielle Moch. Chapter One includes the background information to the thesis. Chapter Two will be a publishable manuscript which contains the literature review. The abstract of the thesis proposal has been published in the final program of the 31st Annual Canadian Association of Nurses in Oncology Annual Conference (2019) III-04-A, authors Danielle Moch & Edith Pituskin.

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Chapter One: Understanding Patient-Reported Outcomes in Oncology

Introduction

With greater value placed on evidenced-based practice and the standardization of care, there is an ever-growing risk of patient choices and participation being *diluted* in the practice setting (Sanders, Harrison, & Checkland, 2010). Unfortunately, this dilution effect has impacted cancer patients in Alberta, many of whom are reporting significantly lower levels of satisfaction than the national average, according to the Ambulatory Oncology Patient Satisfaction Survey (Watson & Tamagawa, 2015). With rising health care costs and decreased patient satisfaction within CancerControl Alberta (CCA), it is obvious that a systematic change must occur.

Background

Nearly half of all Canadians are expected to be diagnosed with cancer in their lifetime (Canadian Cancer Statistics, 2018). As more people are diagnosed and living longer with cancer, the role and scope of nursing practise has evolved to meet the rapidly increasing needs of individuals, communities, and healthcare services (Randall et al, 2017). CCA is comprised of 17 ambulatory cancer centres within the province. Within these 17 sites, it can be broken down further into two health authorities, Alberta Health Services (AHS) and Covenant Health. AHS consists of 15 cancer centres; two tertiary, Cross Cancer Institute and Tom Baker Cancer Centre; four regional, Central Alberta Cancer Centre, Jack Ady Cancer Centre, Margery E. Yuill Cancer Centre, and the Grande Prairie Cancer Centre; nine community cancer centres, Barrhead, Bow Valley, Drayton Valley, Drumheller, High River, Hinton, Lloydminster, Fort McMurray and Peace River. Covenant Health sites consist of two community cancer centres, Camrose and Bonnyville. Patient-reported outcome measures (PROM) have been developed within CCA as a quality improvement strategy to enhance patient-centred (PC) care.

What is Patient-Centred Care?

According to the World Health Organization (WHO), PC health services put people and communities, not diseases, at the centre of health systems and empower people to take charge of their own health rather than being passive recipients of services. This requires that people have the education and support they need to make decisions and to participate in their own care (WHO, 2015). While the concept of PC care has been around for several decades already, little in the way of PC initiatives has come to fruition because efforts to shift the mind and organizational standpoint away from the medical and managerial model of care, is in reality, extremely challenging (Ross, Tod, & Clark, 2015). Health care providers can enable a PC experience by having a PC clinician, informed and activated patient and family and by having an accessible, well organized healthcare system (Epstein & Street, 2007). As nurses comprise the largest section of the health profession, they have a critical role to play in advancing healthcare processes to provide the highest levels of safety, quality and patient satisfaction (Haddad & Toney-Butler, 2019).

What are Patient-Reported Outcomes?

PROs are outcome measures meeting the following criteria: (a) are reported by the patient, (b) matter to the patient, and (c) are distinct from disease-focused outcomes (Watson & Tamagawa, 2015). PROs offer the health care provider a window into the unique experience of each patient and can be used as a communication tool to understand the patient's care needs (Watson & Tamagawa, 2015). Therefore, PROs aim to capture all six dimensions of PC care: 1. emotional support, 2. information communication and education, 3. coordination and continuity of care, 4. access to care, 5. respect for patient preferences and, 6. physical comfort (Tzelepis et al., 2014). Multiple studies have demonstrated that PROs make a positive contribution to the

quality of the health care system (Basch, Barbera, Kerrigan, & Velikova, 2018; LeBlanc & Abernethy, 2017). Moreover, studies have shown that monitoring patients using PROs not only improves patient–clinician communication and the clinician's awareness of symptoms, but also improves symptom management, patient satisfaction, quality of life and overall survival (Basch et al., 2015). In one study, for adults receiving outpatient chemotherapy for advanced cancer at a large specialty cancer centre, the use of PROs resulted in better health-related quality of life, fewer emergency room visits, fewer hospitalizations, a longer duration of palliative chemotherapy, and superior quality-adjusted survival in comparison to routine care (Basch et al., 2015; Moch, 2020a).

Within Alberta, PROMs have been developed into a tool called, "Putting Patients First" (PPF) utilized at the majority of CCA sites for patients to report their symptoms, and used as an assessment guide for clinicians (Watson & Tamagawa, 2015). The PPF includes the Edmonton Symptom Assessment System (ESAS) and the Canadian Problem Check-List (CPC). Each time a patient attends an ambulatory (outpatient) clinic visit, they are asked to complete the form. Currently, the PPF is collected and the form inserted into the paper chart or inputted into a CCA data warehouse where the electronic data is stored.

Table 1: Examples of PRO/PROM tools listed in the literature.

EORTC QLQ-CIPN20, EORTC QLQ-LC13, EORTC QLQ-C30, QLQ-LC13, & QLQ- BR23, EORTC H&N35, EORTC CX25
Modified CTCAE, ESAS, ESAS-r, CPC
STAR EuroQol EQ-5D
Patient Neurotoxicity Questionnaire
Patient-adapted CTCAE, EORTC QLQ-C30, QLQ-LC13, HADS, SF-36

FACT/GOG-Ntx FACT-Taxane FACT/GOG-Ntx
VAS
TSSAT
Skindex-16 Skindex-16, STAT
Bowel Problem Scale Anti-Emetic Survey IPSS, OABSS, Bowel Problem Scale

ESAS

The ESAS was developed over 25 years and translated in over 20 different languages since its debut in 1991 (Hui & Bruera, 2017). The ESAS was originally developed as a clinical tool to document the symptom burden in patients with advanced cancer admitted to a palliative care unit in Edmonton, Alberta (Bruera, Kuehn, Miller, Selmser & Macmillan, 1991). It is commonly used as a symptom screening tool in the cancer patient population (Zeng et al., 2011). This validated and reliable assessment tool can assist in the assessment of nine common symptoms experienced by cancer patients. The nine areas of assessment include pain, tiredness, nausea, depression, anxiety, drowsiness, appetite, wellbeing, and shortness of breath. One blank scale is available for patients to assess an *'other problem'* as needed (Hui & Bruera, 2017). The patient will circle the most appropriate number on a scale of 0 to 10 (10 being the worst). Many versions of the ESAS exist throughout the world indicating the use of the ESAS-r (ESAS revised). The ESAS has been adopted in both clinical and research activities for outcome assessments and symptom screening (Hui & Bruera, 2017).

Problem

Accurate patient assessment is the cornerstone of clinical judgement and decision-making, and is crucial for the provision of high quality, safe, PC care (Bloomfield & Tanay, 2012). A

systematic review completed in 2014 indicated that staff motivation to adopt PROMs is influenced by their attitudes about whether PROMs bring value over and above clinical evaluation and patient observation (Antunes, Harding, & Higginson, 2014; Roberts, Alexander, Wyld, & Janda, 2019). An extensive body of evidence exists regarding the utility of PROs in clinical care, however many barriers remain in the effective implementation of PROs in practice. Such barriers include lack of staff and patient engagement; lack of accessibility; disruption to patient flow; length and complexity of PROMs; PROM completion time (~30 minutes); education of site personnel, patients, providers, and clinicians; and real-time monitoring adherence (Roberts, Alexander, Wyld, & Janda, 2019; Boyce, Browne, & Greenhalgh, 2014; Howell et al., 2015; Brant, Hirschman, Keckler, Dudley, & Stricker, 2019; Moch, 2020a). Nurse's voices however, have been under represented in the literature.

Misunderstandings remain amongst nurses about how screening with a standardized-tool could contribute to their nursing practice (Fitch, Howell, McLeod, & Green, 2012). Wei et al. (2017) described a discordance between what health care professionals report in a needs assessment and what needs the patient reports. If the patient and nurse are speaking different languages regarding symptom burden, or if the nurse's philosophical assumptions and biases result in disregarding the patient's report, this mismatch needs to be urgently addressed. If nurses lack adequate training for utilizing PROs and/or how such tools contribute to high-quality PC care, then patient safety and satisfaction may be compromised.

Purpose

Currently, some nurses are reluctant to utilize PROs but it is unclear as to why. Wei, Nengliang, Yan, Qiong, and Yuan (2017) argue that significant improvements in care are unlikely without a comprehensive understanding of patient and caregiver needs. Understanding

the complexities associated with the barriers perceived by oncology nurses will allow for meaningful and effective future planning of PROs in the CCA community. The intent of this study, therefore, was to understand whether nurses assume similar beliefs and values regarding PROs, and to examine whether nursing perspectives regarding PROs in routine cancer care. As nurses are commonly the first-line providers assessing the cancer patient and their reported symptoms, understanding their views of PROs was critically important.

Objectives & Research Questions

The aims of this comprehensive review were to synthesize the current literature from 2008 to 2018, on the use of PROs/PROMs by ambulatory oncology nurses and describe their perspectives on, attitudes about, and experiences using PROs/PROMs, and to determine valuable characteristics and projected outcomes. By acknowledging existing literature to answer the research questions listed below, the use of PROs/PROMs in the field of cancer care can be further improved. The primary research questions are: How do ambulatory oncology nurses use PROs/PROMs, and what are their perspectives on, attitudes about, and experiences with PROs/PROMs? The Populations, Interventions, Comparators, and Outcomes (PICO) framework was used to define the review question. The population consisted of oncology nurses (licensed practical nurses, registered nurses, advanced practice nurses, clinical nurse specialists, and nurse practitioners). The intervention was the use of PROs/PROMs. There was no comparator. The outcomes were nurse's perspectives, experience, attitudes, use, and satisfaction.

Methods

A mixed method review design was selected to add further depth and breadth to the analysis. In this mixed methods review, both qualitative and quantitative data will be analyzed for additional coverage to the research questions. The *P*referred *R*eporting *I*tems for *S*ystematic

Reviews and *M*eta-*A*nalyses (PRISMA) guidelines was used to organize the selected articles. Reference and data management of the results were stored using Microsoft Excel 2013 and exported to Covidence software for further review.

Significance

Understanding how nurses' view and use PROs is a priority in nursing research given the need to ensure evidence-based, PC care (Ferrell et al., 2013). The better the benefits, facilitators, and barriers to using PRO tools in clinical practice are understood, the more the use of those tools can be optimized to improve the quality of patient care (Green et al, 2017). Strategies to integrate PROs with nursing assessments, care planning and evaluation will contribute to high-quality, measurable PC care. This review is essential as CCA aims to implement PROs province-wide in the coming years. Understanding the complexities associated with barriers perceived by oncology nurses will allow for meaningful and effective continuing education initiatives. It is also expected that this work will contribute to important future quality initiatives within CCA, potentially utilizing the number and severity of symptoms reported on the PPF tool to assign the optimal oncology care provider.

Conclusion

This review will identify key perceptions amongst ambulatory oncology nurses that might present a barrier to the adoption of PROs, and as such, will give a voice to oncology nurses so that they might contribute to the development of knowledge regarding PROs. It is imperative that such challenges are identified early as they can impact patient safety and satisfaction. Further research on PROs from the perspectives of nurses is needed to inform future nursing practice standards.

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Chapter Two: Oncology Nurses Perspectives of Patient-Reported Outcomes: A Comprehensive Literature Review

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Abstract

Nurses are commonly the first-line health care provider in the outpatient oncology setting, and their clinical judgement and decision making are essential for high-quality, safe patient-centred care. Patient-reported outcomes (PRO) offer the health care provider a window into the unique experience of each patient and can be used as a communication tool to understand the patient's care needs. Much research exists surrounding patient and physician perspectives of patient-reported outcomes measures (PROMs) but scant work has been done specifically examining nurses' perspectives on the topic. A comprehensive literature review was conducted from September 2018 to April 2019 aiming to summarize nursing perspectives and experiences with PRO's in the ambulatory oncology setting. Multiple databases were searched including Academic Search Complete, CINAHL, Ovid and Ebsco Medline, and PubMed, revealing only 7 articles that fully met the inclusion criteria. Three general themes emerged discussing accuracy of PROMs, multidisciplinary acceptability of PROMs in the ambulatory oncology setting, and nursing perspectives of PROMs. Analysis of perceived limitations of PROMs revealed that they do not effectively distinguish symptoms or are not disease-specific. It also revealed difficulties that are experienced while using PROMs such as disruption to workflow and additional workload. These perceived limitations could provide nurse educators and administrators with initial actionable approaches for nurse education and resource planning. This comprehensive review identified themes and potential opportunities to assist ambulatory oncology nurses in their practice of PROM utilization. Further research is required from oncology nurses regarding PRO's to inform future nursing practice standards and to promote the adoption of true patient-centred care.

Keywords: *patient-reported outcomes, ambulatory oncology, nurses perspectives.*

Chapter Two: Oncology Nurses Perspectives of Patient-Reported Outcomes: A Comprehensive Literature Review

Background

Oncology nurses are an integral component of the cancer care team, and collaboration among clinicians, educators, and researchers is essential to ensure evidence-based oncology nursing practice (Mick, 2008). The Oncology Nursing Society (ONS) priority research agenda items for 2014-2018, include, improving health systems through expanding patient-centred (PC) cancer nursing and evaluate the effect of nursing care on promoting and maintaining treatment quality and safety (Knobf et al., 2015). This literature review includes both of these aspects.

> PROs have long been established as the most valid and reliable method of assessing subjective toxicities, symptoms, quality of life, and patient preferences. (Sherner, 2016, p. 16)

Objectives & Research Questions

The aims of this comprehensive review were to synthesize the current literature from 2008 to 2018, on the use of PROs/PROMs by ambulatory oncology nurses and describe their perspectives on, attitudes about, and experiences using PROs/PROMs, and to determine valuable characteristics and projected outcomes. By acknowledging existing literature to answer the research questions listed below, the use of PROs/PROMs in the field of cancer care can be further improved.

The primary research questions are: How do ambulatory oncology nurses use PROs/PROMs, and what are their perspectives on, attitudes about, and experiences with PROs/PROMs? The Populations, Interventions, Comparators, and Outcomes (PICO) framework was used to define the review question. The population consisted of oncology nurses (licensed

practical nurses (LPN), registered nurses (RN), advanced practice nurses (APN), clinical nurse specialists (CNS), and nurse practitioners (NP)). The intervention was the use of PROs/PROMs. There is no comparator.

Methods

A mixed method review design was selected to add further depth and breadth to the analysis. In this mixed methods review, both qualitative and quantitative data were analyzed for additional coverage to the research questions. This provided a certain level of flexibility to utilize the strengths of different methods to achieve different goals within this review (Morgan, 2014). Research typologies were weighted equally, and instead of undertaking a solely quantitative or qualitative review, the appropriate type of research to answer each question was be selected. Of note, Harden and Thomas describe the terms 'qualitative' and 'quantitative' as imprecise when describing research as a whole (2005). The choice of a mixed methods review would avoid this issue. The *P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses (PRISMA) guidelines was used to organize the selected articles. Reference and data management of the results were stored using Microsoft Excel 2013 and exported to Covidence software for further review. Further, the search protocol, inclusion and exclusion criteria and results are outlined. Lastly, limitations, implications for nurses and future areas of research are offered.

Search Protocol

A comprehensive literature review was conducted focusing on ambulatory oncology nurses opinions of PRO's. With assistance from two independent librarians from the University of Alberta and AHS Knowledge Resource Centre, a literature search was conducted using multiple databases, including: Academic Search Complete, CINAHL, Ovid and Ebsco Medline, PubMed and TRIP Database (tripdatabase.com). A search of the grey literature included the

following databases: Google (up to page 20), Google Scholar (up to page 20), and OAISter (oaister.worldcat.org). The limitations placed on the searches from Google and Google Scholar aimed for accuracy of searches, feasibility and to improve the timely completion of this comprehensive review.

Main Search Terms and Concepts

The main concepts used in this search protocol were nurse or nursing, treatment assessment, ambulatory or outpatient, cancer, patient-reported outcomes or patient reported outcome measures or PRO or PROM, and experience or attitude. Please see Appendix A for a comprehensive list of keywords associated with these concepts and search strategies. The delimiters of this search strategy included articles published in the English language and adults aged 18 years and older for reasons specified in inclusion and exclusion criteria. See Appendix B for a copy of the search strategy for CINHAL, Academic Search Completed and Medline (Ebsco). See Appendix C for a copy of the search strategy for MEDLINE via Ovid. See Appendix D for a copy of the search strategy for Trip Database.

Inclusion and Exclusion Criteria

Research Standard Criteria

This review considered the following types of original research: (1) randomized controlled trials (RCTs and CTs), non-randomized controlled trials (prospective and retrospective cohort, case-control, cross-sectional, and before-and-after comparison studies); (2) observational, survey, and Delphi studies; and (3) qualitative and mixed-method studies. This review excluded reviews, editorials, commentaries, letters to the editor, theoretical papers, studies without abstracts, and/or full text not available etc. The reason for excluding such articles is that they introduce bias knowingly or unknowingly into the review (Forsyth, Odierna, Krauth,

& Bero, 2014). Conflict of interest disclosures are often inadequate, particularly for editorials, comments, letters, and perspectives which may mislead readers if cited as evidence in academic literature (Forsyth et al., 2014).

Inclusion Criteria

The setting included ambulatory, outpatient, or community cancer care published in English. Further, all PRO/PROM tools and samples specified and described as use in routine cancer care. As long as the assessment tool was described as either a *'PRO' or 'PROM'* and met the other inclusion criteria, those articles were included. Last, data must be based on the perspectives and experiences from nurses working with adult only patients (aged 18 years or older). The types of nurses included LPNs, RNs, APNs, CNS, and NPs. The publication time frame was restricted from 2008 to 2018 to gain the most recent evidence on this topic. See Appendix E for the Abstract Review Form.

Exclusion Criteria

A recent systematic review was completed on implementing PROs in the palliative care setting (Antunes, Harding, & Higginson, 2014), and thus, this setting was excluded. Studies that focus on the inpatient setting were also excluded because there is a different type of care provided in this setting due to patient complexity versus routine ambulatory cancer care. Cancer admission has decreased significantly over the last two decades and the majority of patients are now being treated on an outpatient basis (Williamson, 2008). Although it may be ideal to include non-English articles to avoid language bias, the practicality of locating and assessing these articles along with the feasibility of translating these articles is not possible without grant funding.

Clinical trials and programs using PRO/PROM tools offered externally to the ambulatory oncology setting were excluded as they do not qualify as routine cancer care. Studies that do not disclose PRO/PROM intervention or specify the nursing discipline were excluded. Studies that discuss PRO/PROM use in patients less than 18 years of age in any cancer setting as childhood cancers differ in many ways from those occurring at older ages even when they are apparently similar tumours (Murphy, Bithell, Stiller, Kendall, & O'Neill, 2013). This includes different treatment options, side effects, and management (Murphy et al., 2013). Patient, relative, or caregiver perspectives and/or experiences were also excluded as another systematic review has already focused on patient perspectives and experiences (Chen, Ou, & Hollis, 2013). Due to the potentially considerable amount of literature and our key areas of research interest, inclusion and exclusion criteria were restricted specifically to oncology nursing perspectives regarding PROs. Inclusion and exclusion criteria is summarized in Appendix F.

Results

The database search strategy yielded 1068 articles for title and abstract review. Further, 52 articles were selected for full-text review. Of those, 45 were excluded with reasons. Finally, 7 articles were included in the review that met the inclusion criteria. See Figure 1 for the PRISMA breakdown.

Figure 1: PRISMA Flow Diagram 2.0.

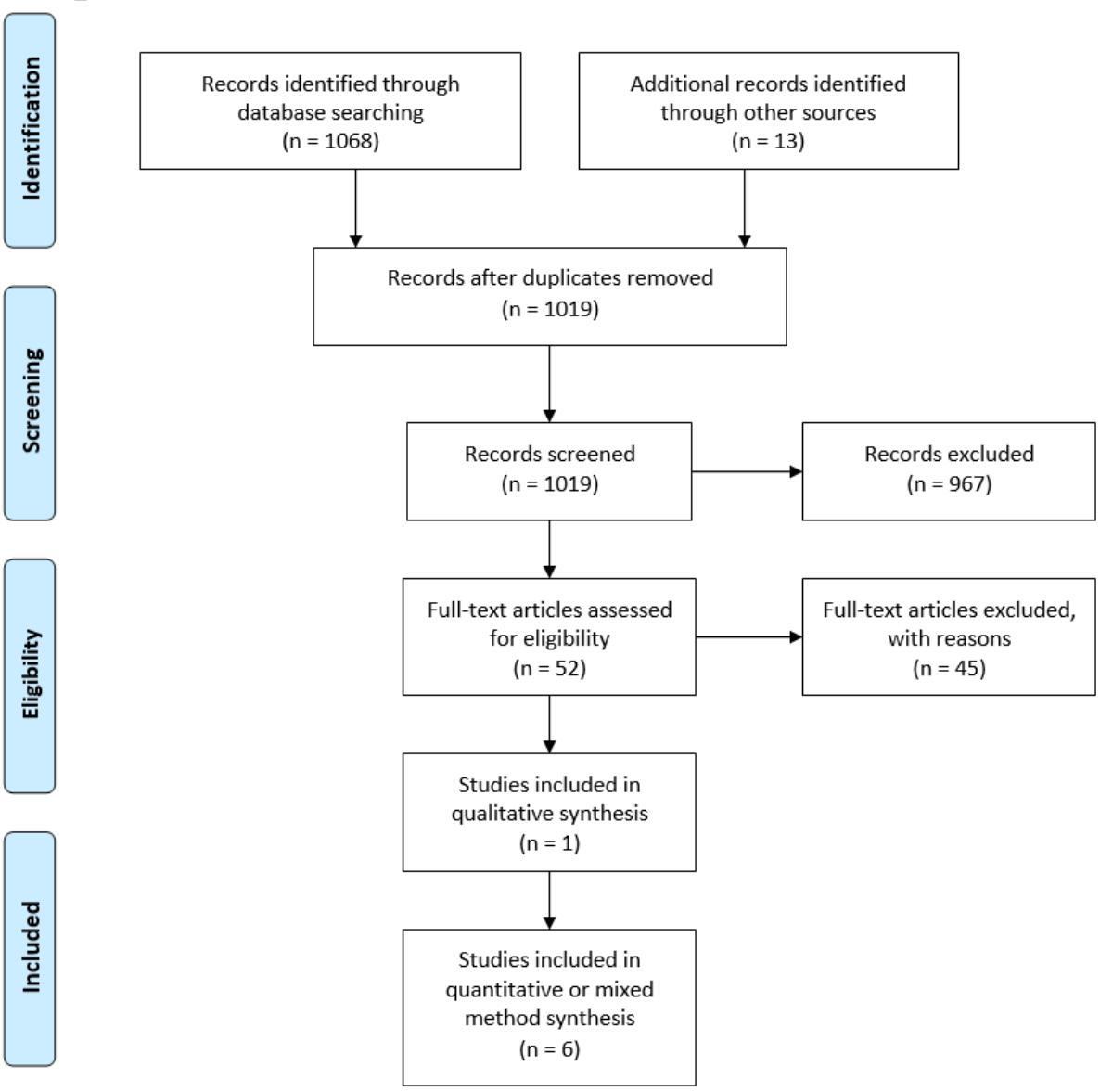

Table 2: Summary of articles included in the literature review.

Author/ Year	Title	Design and Number of Participants	Key Findings about Nurse Perspectives	Considerations
Bainbridge et al., 2011 ***Canada***	Multidisciplinary health care professionals' perceptions of the use and utility of a symptom assessment system for oncology patients.	Quantitative N=128	• The majority of nurses (89%), physicians (55%), and other providers (57%) reported referring to the ESAS in clinic either "always" or "most of the time." • Many of those who either "never" or "rarely" looked at ESAS scores reported finding it more efficient to talk to the patient or do their own assessment to determine symptom issues. • Among nursing responses, one third stated that patients need more initial instruction on how to properly complete the ESAS tool.	Non-respondents might have different perspectives, possibly more negative, the exclusion of which could have led to an overestimate of ESAS use.
Coolbrandt et al., 2017 ***Belgium***	Implementation and use of a patient symptom diary during chemotherapy: A mixed-methods evaluation of the nurse perspective.	Mixed Methods N= 79 completed surveys N=14 participated in interviews	• Most nurses reported performing diary-related behavior to some extent. The survey and focus groups indicated that	Although a positive trend was noted, nurses' use of the symptom diary was suboptimal six months after its implementation.

Author/ Year	Title	Design and Number of Participants	Key Findings about Nurse Perspectives	Considerations
			many nurses strongly believed in the value of the diary, but some were still hesitant or had concerns about patients' perceptions of the diary.	
Green et al., 2017 ***Canada***	Oncology nurses' attitudes toward the Edmonton symptom assessment system: Results from a large cancer care Ontario study.	Mixed Methods N=353	• 81% of nurses agreed or strongly agreed with the statement: "Generally, in everyday practice, the regular use of standardized, valid instruments to screen for and assess symptoms should be considered best practice." • More than half of the nursing participants agreed that the ESAS enables them to better manage patients' symptoms.	Low response rate (36%). Response bias is also possible because the non-responders may, in general, have different attitudes toward symptom screening.
Groff et al., 2018 ***Canada***	Examining the sustainability of Screening for Distress, the sixth vital sign, in two outpatient oncology clinics: A mixed-methods study.	Mixed Methods Cross Sectional Design N=16	• Most participants held positive attitudes and beliefs about Screening for Distress and described it as helping to "give	Nursing perspectives were grouped with oncologists and administrators, making it challenging to

Author/ Year	Title	Design and Number of Participants	Key Findings about Nurse Perspectives	Considerations
			the best quality, all inclusive, well-rounded care that we can to patients and their families." • Lack of role clarity found regarding the screening tool. Some participants felt that this was the sole responsibility of the nurse, while others felt this was a joint responsibility. • Participants felt that this intervention is timely and requires dedicated program staff with the time to respond to issues.	detangle nursing perspectives.
Kotronoulas et al., 2017 ***Europe***	Feasibility and acceptability of the use of patient-reported outcome measures (PROMs) in the delivery of nurse-led supportive care to people with colorectal cancer (CRC).	2 Phase Approach: 1: Systematic Review & Focus Groups 2: Qualitative Study N=6	• Clinical nurse specialists (CNS) stressed how the PROM helped them tease out more issues with patients than they would normally. • Participating CNS perceived engagement in the collection	CNS-led consultations used to enhance delivery of supportive care to people with CRC completing adjuvant chemotherapy. Consultations ranged from 30-40 minutes approximately to go over the

Author/ Year	Title	Design and Number of Participants	Key Findings about Nurse Perspectives	Considerations
			and use of patient-reported data as an enlightening and educative activity, enabling them to see beyond just side-effects, assess over time, and investigate issues deeper. • Consecutive needs assessments were however perceived as repetitive.	PROM. Supplying CNS with additional information on available resources as well as training in focused problem-solving techniques could increase applicability and acceptability, also allowing for smoother involvement of the more junior members of staff.
Nakaguchi et al., 2013 ***Japan***	Oncology nurses' recognition of supportive care needs and symptoms of their patients undergoing chemotherapy.	Comparative N=17	• Nurses' awareness of their patients' supportive care needs and physical and psychological symptoms were less than optimal in routine care. In particular, psychological symptoms and support needs for these symptoms were markedly under-recognized. • Oncology nurses' recognition may not accurately reflect their	Factors relating to the nurses' workload pressure and rapport were not investigated comprehensivel y; however, may have impacted accuracy of needs/symptoms recognition.

Author/ Year	Title	Design and Number of Participants	Key Findings about Nurse Perspectives	Considerations
			patients' supportive care needs and symptoms in routine practice	
Pereira et al., 2016 ***Canada***	Cancer care professionals' attitudes toward systematic standardized symptom assessment and the Edmonton Symptom Assessment System after large-scale population-based implementation in Ontario, Canada.	Mixed Methods N=960	• 88% of the participants "strongly agreed or agreed that symptom management is within their scope responsibilities. • 75% of the participants strongly agreed or agreed that the ESAS helps patients report their symptoms. • 69% of the participants indicated that they always or often look at their patients ESAS scores. • 54% of the participants strongly agreed or agreed that the ESAS improves the efficiency of the meeting with the patient.	Study included physicians, nurses, radiation therapists and psychosocial oncology staff. Findings suggest significant albeit variable uptake across disciplines.

General Findings

Accuracy of PROMs: One theme that emerged was accuracy from providers compared to patient-self reported measures on the same criteria. A 2013 study compared self-administered

questionnaires that both the patients and nurses completed to assess the patients' supportive care needs and symptoms (Nakaguchi, Okuyama, Uchida, Ito, Komatsu, Wada, & Akechi, 2013). The authors concluded that nurses' awareness of their patients' physical and psychological symptoms were less than optimal in routine care. Specifically, psychological symptoms and subsequent supportive interventions to address these were markedly under-recognized. Physical symptoms associated with chemotherapy, such as hair loss, appetite loss and fatigue were better recognized than symptoms not specific to chemotherapy, such as constipation, insomnia, dyspnea and pain. Factors relating to the nurses' workload pressure and rapport were not investigated comprehensively however, may have impacted the accuracy of needs/symptoms recognition (Nakaguchi et al, 2013). Coolbrandt et al., 2011, evaluated nurses' experience with a paper diary completed by patients receiving chemotherapy. Similarly, they reported that not all nurses were convinced of using a symptom diary, and some were still weighing the benefits and disadvantages of the diary six months after implementation. Some were convinced that their old practice of asking about symptoms was equally effective (Coolbrandt et al., 2011).

PROMs and the Multidisciplinary Team: A second theme emerged regarding use of PROMs by multiple members of the multidisciplinary oncology care team including nurses. This survey conducted across Ontario consisted of 17 closed-ended and 4 open-ended questions and invited all oncology multidisciplinary health professionals. Of the 960 respondents, the Edmonton Symptom Assessment System (ESAS) PROM was perceived as a useful starting point to assess patients' symptoms (response rate 38%) with the majority of physicians (67%) and nurses (85%) agreeing with this statement (Pereira, 2016). It has consistently been found that nurses tend to review and use patient-reported information more commonly than physicians, as reported by Bainbridge et al., 2011. Nurses in this study reported high levels of PRO use but that they did not

use them all the time. Many of those who either "never" or "rarely" looked at ESAS scores reported finding it more efficient to talk to the patient and/or do their own assessment to determine symptom issues (Bainbridge et al, 2011). Although most of the nurses and allied health professions found the ESAS to enhance patient care (85% and 80%, respectively), help patients articulate their symptom issues (70% and 87%), and aid in following up with patients with past symptom issues (80% and 68%), only approximately half of the physicians agreed with these statements.

Finally, an Alberta study examined the sustainability of a Screening of Distress PROM program in two cancer clinics (head and neck and neuro-oncology) six months post implementation in routine cancer care (Groff, Holroyd-Leduc, White, & Bultz, 2018). This mixed methods study included administrators (n=3), physicians (n=6), and nurses (n=7) and found that Screening for Distress was largely sustained, however, gaps in knowledge and lack of stakeholder engagement were considered barriers in the utilization of the PROM (Groff et al., 2018).

Nursing Perspectives: Three studies specifically examined the views of PROMs in ambulatory oncology nurses. One looked at nurse perspectives of using a symptom diary during chemotherapy (n = 79). The results indicated that the use of the symptom diary by nurses was suboptimal after six months after its implementation (Coolbrandt et al., 2017). This was due to doubts some nurses had about patients' perceptions of the diary. Some felt that the diary was too demanding, and this perception or assumption discouraged some nurses from using the diary (Coolbrandt et al., 2017). In people with colorectal cancer, a second study looked at the acceptability of PROMs in the delivery of nurse-led supportive care (Kotronoulas, Papadopoulou, MacNicol, Simpson, & Maguire, 2017). Overall, nurses' perspectives on PRO's

were positive stressing how PROMs helped them tease out more information from their patients and prioritize their care needs. However, in this setting, nurse consultations with each patient was approximately 30-40 minutes during active transitional periods of time such as completion of adjuvant chemotherapy etc. These nurses requested needing more time to fully discuss patient concerns. Having the intervention towards the end of chemotherapy was seen as useful; during that time the psycho-emotional needs become more evident. A limitation to this study, however, was that the sample size was small (n = 6) and based on one hospital in the United Kingdom.

Green et al., performed a sub study of Pereira et al multidisciplinary work, specifically examining nursing attitudes of PROs. Their primary aim was to assess attitudes of ESAS use amongst oncology nurses and secondarily, to identify if these attitudes were influenced by years of nursing experience or advanced oncology certification (Green et al, 2017). Of the 353 RNs who participated in this study (36% response rate), 41 (12%) were advanced practice nurses with master's-level education (clinical nurse specialists and nurse practitioners), and 178 (50%) were certified with CON(C). Ninety-six nurses (27%) had practiced more than 20 years in an oncology setting at the time of assessment. The results of this study indicated that 81% of nurses agreed or strongly agreed with the statement: "Generally, in everyday practice, the regular use of standardized, valid instruments to screen for and assess symptoms should be considered best practice." However, nearly half of participants disagreed that ESAS enables them to better manage patients' symptoms. Further, 49% of nurses reported that the, "ESAS does not cover all the symptoms that my patients experience," which may be related to the lack of specificity the ESAS tool provides or may not address disease-specific symptoms (Green et al., 2017). Green et al., also reported that the ESAS may provide too many symptom options that patients may

disclose that are not related to their cancer. However, this study also reported that many nurses value a standardized approach to assess and intervene on symptom issues (2017).

All Themes and Limitations of PROMs: We specifically summarized all the limitations that oncology nurses identified regarding PROMs across all three themes. In this way, self-identified concerns could be specifically addressed in multiple actionable educational or management approaches. Multiple reasons presented on the difficulties with engagement of the PROM tool. These difficulties included lack of engagement during implementation (Kotronoulas et al., 2017); disruption to patient flow (Bainbridge et al., 2011); increased workload (Coolbrandt et al., 2017); and lack of staff education on the importance of PROMs (Green et al., 2017).

The perception that PROMs do not effectively distinguish symptoms or are not disease-specific were reported as limitations (Bainbridge et al., 2011; Coolbrandt et al., 2017; & Green et al., 2017). Addressing this notion from a PC care lens, healthcare providers should seek to acknowledge and assist the patient with all symptoms whether relevant to cancer or not (Pereira, 2016). Green et al., reported that some nurses felt that symptoms could be missed by using a standardized screening tool (2017). Therefore, one conclusion could be to modify the ESAS tool to be more inclusive of other commonly experienced symptoms. PROMS have also been reported as not efficient however, with a focus on clinic service design, PROs can integrate data collection and response systems into workflow (Green et al., 2017).

Nurses play an integral role in multidisciplinary cancer care due to the sharing of PROM information from their assessments with other providers on the clinical team, which results in patient interventions, referrals, and/or supportive counseling (Bainbridge et al., 2011). However, Pereira reported that physicians place less value on PROMs, potentially leading to overall devaluing of PROs by the entire oncology team. Interprofessional collaboration amongst

multiple disciplines are required for further PRO utilization and adoption. Green et al., reported, that interdisciplinary communication in the clinic, is a critical success factor in implementing symptom screening and assessment as a programmatic approach.

Limitations

Limitations of the Literature

Many studies reported differences between clinician and patient perceptions of stresses and distress while on anti-cancer treatments but did not meet the inclusion criteria of this review (Kearney et al, 2008; Fallowñeld, Ratcliffe, Jenkins, & Saul, 2001; Mitchell, Hussain, Grainger, & Symonds, 2011; Fitch, Howell, McLeod, & Green, 2012). Several studies reported on accuracy of both clinician and nurse assessments that recognized patient distress through comparative measures of self-reported patient data. This category also included a discordance between what caregivers and nurses report versus clinicians (Mitchell, Hussain, Grainger, & Symonds, 2011; Vodermaier & Linden, 2008; Cirillo, Venturini, Ciccarelli, Coati, Bortolami, & Verlato, 2009; Laugsand et al, 2010; Akin, & Durna, 2013). Relying on clinical judgment alone showed that in 21% of nurse–patient interactions, clinicians were unsure whether or not the patient was distressed (Mitchell, Hussain, Grainger, & Symonds, 2011). In routine practice, some clinicians prefer to use their own (unassisted) clinical skills when evaluating distress and depression (Mitchell, Kaar, Coggan & Herdman, 2008), but at the same time frequently overestimate their own accuracy (Nekolaichuk et al 1999; Veloski, Tai, Evans, Nash, 2005; Davis et al 2006; Mitchell, Hussain, Grainger, & Symonds, 2011).

Other multidisciplinary studies, *Greenhalgh, 2009 and Berry et al, 2011*, included nurses, allied health professionals, social workers, clinical psychologists, psychotherapists, etc. amongst the medical professions *'clinicians'* making it challenging to decipher nursing perspectives.

Although multidisciplinary perspectives are important, these studies are limited by the blending of nurse-specific perspectives of PROs when analyzed from a multidisciplinary approach. With this *'clinician'* view in mind, Greenhalgh, proposed that more qualitative data is needed to explore how clinicians and patients make sense of and act on PRO information. Thus understanding the mechanisms through which proximal outcomes do or do not lead to the achievement of more distal outcomes (Greenhalgh, 2009).

Limitations of the Review

A potential limitation of this comprehensive review was that it was conducted by only one independent reviewer. As such, discrepancies and/or disagreements were not able to be addressed thus increasing the risk of bias. To manage this risk, the search strategy and protocol were developed prior to undertaking the search. Another strategy was assistance from two independent librarians in the development of the search terms and strategies. Search strategies are permanently saved, indicating a high degree of certainty that this literature review could be replicated.

Implications for Nurses

Research has consistently found that when patients with cancer receive a systematic nursing symptom assessment and interventions, they experience better outcomes and increased quality of life (Eaton & Tipton, 2009; Graze, Brady-Copertino, Varner, & Stiver, 2014; Matsuda, Yamaoka, Tango, Matsuda, & Nishimoto, 2014). Finding ways to integrate PROs with nursing assessments, care planning and evaluation will contribute to the further development of high-quality, measureable PC care. Nurses are well placed to offer a whole-person-centred and holistic approach to health care while incorporating patient safety and side effect management (Cooper & de Lord, 2018; Lai et al., 2017; Woodward, 2017). With more people diagnosed with

cancer and people with cancer surviving for years, the role and scope of nursing practice must evolve in response to the dynamic needs of patients and survivors within the health care system (Randall et al., 2017). As Bloomfield and Tanay (2012) stated, nurses play a crucial role in the prompt identification of side effects and toxicities and are in an ideal position to enhance the well-being of patients and maximize treatment outcomes. Educators must foster the growth and development of new oncology staff to enrich them with a PC care philosophy. PROs should be introduced to new staff early on to assist with early buy-in, and a PC care culture across novice to expert nurses fostered. Similarly, a culture across the members of the multidisciplinary oncology care team should be encouraged, with successes in care delivery recognized. Nurse Managers must lead their teams by example with a PC vision and support workflow process for early and sustained adoption of PROMs.

Future Research

Future research should further explore nursing perspectives of PROs in other settings and nursing subgroups as well as the attitudes, perspectives, and experiences of PRO/PROM utilization across multiple disciplines in the oncology setting. This will be crucial for further application of PC care initiatives. However, caution should be exercised as to not group disciplines together under the same terms, such as *'clinician,'* as this provides a significant challenge in disentangling perspectives and may lead to false reporting or introduce unnecessary bias. Understanding interdisciplinary perspectives as they relate to shared care and inter-professional collaboration will be crucial for further application of PC care initiatives.

Knowledge Dissemination

The findings within this thesis have already been shared in multiple settings, and there are several opportunities for dissemination in the future. This thesis was previously presented to

a national audience at the most recent Canadian Association of Nurses in Oncology Annual Conference in Winnipeg, 2019, and will be updated at the next annual meeting in 2020. The final manuscript will be published in the Canadian Oncology Nursing Journal. Findings will also be discussed in patient experience committee groups and further educational venues within CancerControl Alberta.

Conclusion

PROs offer health care providers a window into the unique experience of each patient, yet minimal research has examined nursing perspectives on the topic. A mixed methods review was undertaken to synthesize the current literature on the experiences ambulatory oncology nurses have had with PROs/PROMs. While ambulatory oncology nurses recognize the value of PROs, this review identified key areas of PROM challenges that could provide immediate actionable strategies for nursing leaders. We expect that such strategies seamlessly integrating PROs with nursing assessments, care planning and evaluation will contribute to high-quality, measurable PC care.

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Appendix A

Literature Review Search Strategy

Databases Explored

MEDLINE (Ovid); PubMed; CINAHL; Academic Search Complete; MEDLINE (Ebsco); TRIP Database www.tripdatabase.com

Grey Literature

Insite; Google; Google Scholar; OAISter http://oaister.worldcat.org/

Keywords, Concepts & Search Strings

Table 3

Literature Review Search Strategy

Concept	Synonym
Registered Nurse (RN)	Nurse* [Keyword]; nurses [MeSH]; "registered nurse*" [Keyword]; RN [Keyword]; nurse-led [Keyword]; "oncology nurse*" [Keyword]; "nurse oncologist*" [Keyword]; oncology nursing [MeSH]; "nurse* role*" [Keyword]; nurse's role [MeSH]; "nursing practice pattern*" [Keyword]; practice patterns, nurses [MeSH]; "nursing staff" [Keyword, MesH]; nursing staff, hospital [MeSH]; "nursing experience*" [Keyword]; oncology nursing perspective [MeSH];
Pre-Chemotherapy	Pre-chemotherap* [Keyword]; chemotherap* [Keyword]; drug therapy [MeSH]; "ambulatory chemotherapy" [Keyword];
Treatment Assessment	"treatment assessment" [Keyword]; "treatment outcome" [Keyword, MeSH]; "adverse event*" [Keyword]; toxicity [Keyword]; "toxic* test*" [Keyword]; toxicity tests [MeSH]; "toxic* assessment*" [Keyword]; "chemotherap* assessment*" [Keyword]; "symptom* management" [Keyword]; "symptom* assessment" [Keyword]; ctcae [Keyword]; "common

	terminology criteria for adverse events" [Keyword];
Ambulatory Oncology/Care	"ambulatory oncology" [Keyword]; oncology service, hospital [MeSH]; "ambulatory care" [Keyword, MeSH]; "urgent care" [Keyword]; "emergency department*" [Keyword]; emergency service, hospital [MeSH]; "acute care" [Keyword]; "critical care" [Keyword, MeSH]; outpatient* [Keyword]; outpatients [MeSH]; "outpatient service*" [Keyword];
Cancer	Cancer [Keyword]; neoplasm* [Keyword]; neoplasms [MeSH]; carcinoma [Keyword, MeSH]; tumour* [Keyword]; tumor* [Keyword]; metasta* [Keyword]; malignan* [Keyword]; oncolog* [Keyword]; "cancer care" [Keyword];
Patient-Reported Outcomes	(MM "Patient-Reported Outcomes") or TI ("Patient Reported Outcome*") AND (MM "Patient Care") OR (MM "Nursing Care") OR (MM "Nursing Process+") OR (MM "Nursing Protocols+") OR (MM "Health Care Delivery") OR (MM "Health Care Delivery, Integrated") OR (MH "Nursing Models, Theoretical+") OR (MH "Practice Patterns") OR (MM "Quality of Health Care") OR (MH "Nursing Outcomes") OR (MH "Outcomes (Health Care)") OR (MM "Quality Improvement") OR (MM "Patient Satisfaction") OR (MM "Patient Centred Care") OR (MM "Health Care Costs+") OR (MM "Personnel Staffing and Scheduling+") OR (MM "Workload") Or TI(implement* or design* or "re-design*" or "patient-centred" or "patient-centred" or cost* or budget* or staff* or workload*) or TI(patient* and satisf*) or TI((patient* or model*) and care) OR TI(improv* and (care or healthcare or outcome* or quality))
Efficacy	"quality improvement" [Keyword, MeSH]; "quality assurance" [Keyword]; quality assurance, health care [MeSH]; "total quality management" [Keyword, MeSH]; cost*

	[Keyword]; “cost analysis” [Keyword]; costs and cost analysis [MeSH]; budget* [Keyword]; budgets [MeSH]; “health ca[Keyword]; “outcome assessment” [Keyword]; outcome and process assessment (health care) [MeSH]; outcome assessment (health care) [MeSH];
Patient Satisfaction	“patient satisfaction” [Keyword, MeSH]; patient-centred [Keyword]; patient-centred [Keyword]; “patient-centred care” [Keyword, MeSH]; “patient-centred care” [Keyword]; “patient-reported outcome measures” [Keyword, MesH]; “patient-reported outcomes” [Keyword]

Appendix B

Literature Review Search Strategy: CINAHL, Academic Search Complete and Medline (Ebsco)

Table 4

Database: CINHAL, Academic Search Complete, and Medline Ebsco Search Strategy Run From 2008 to 2018.

Search ID#	Search Terms	Search Options	Last Run Via	Results
S5	S1 AND S2 AND S3 AND S4	Limiters - Published Date: 20080101-20181231 Expanders - Apply equivalent subjects Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text;Academic Search Complete;MEDLINE	854
S4	(nurse* OR nursing*)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text;Academic Search Complete;MEDLINE	2,526,472
S3	(“patient-reported outcome measures” OR “patient-reported outcomes” OR PRO* OR PROM*)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text;Academic	42,719,578

			Search Complete;MEDLINE	
S2	(attitude* OR "nursing experience*" OR "quality improvement" OR perspective* OR workload* OR cost* OR budget* OR approach* OR method* OR outlook* OR view* OR position* OR stance* OR "personal satisfaction" OR satisfaction* OR experience*)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text;Academic Search Complete;MEDLINE	23,072,596
S1	("ambulatory oncology" OR "ambulatory care" OR outpatient*OR "outpatient service*") AND (cancer OR neoplasm* OR carcinoma OR tumour* OR tumor* OR metasta* OR malignan* OR oncolog* OR "cancer care")	Expanders - Apply equivalent subjects Search modes - Find all my search terms	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text;Academic Search Complete;MEDLINE	9,817

Appendix C

Literature Review Search Strategy: Medline

Table 5

Database(s): Ovid MEDLINE(R) ALL 2008 to 2018.

Ovid MEDLINE(R) ALL <2008-2018>			
#	**Search Statement**	**Results**	**Annotation**
1	(nurse* OR nursing*) AND (“treatment assessment” OR “treatment outcome” OR “adverse event*” OR toxicity OR “toxic* test*” OR “toxic* assessment*” OR “chemotherap* assessment*” OR “symptom* management” OR “symptom* assessment” OR ctcae OR “common terminology criteria for adverse events”) AND (“ambulatory oncology” OR “ambulatory care” OR outpatient*OR “outpatient service*”) AND (cancer OR neoplasm* OR carcinoma OR tumour* OR tumor* OR metasta* OR malignan* OR oncolog* OR “cancer care”) AND (“patient-reported outcome measures” OR “patient-reported outcomes”) AND (attitude* OR “nursing experience*” OR “quality improvement” OR perspective* OR workload* OR cost* OR budget* OR approach* OR method* OR outlook* OR view* OR position* OR stance* OR “personal satisfaction” OR satisfaction* OR experience*) {Including Related Terms} {Including Related Terms} {Including Related Terms}	312	
2	limit 1 to (english language and yr="2008 - 2018" and "all adult (19 plus years)")	158	

Appendix D

Literature Review Search Strategy: Trip Database

Table 6

Database(s): Trip Database

#	Search Statement	Results
1	(nurse* OR nursing*) AND (“treatment assessment” OR “treatment outcome” OR “adverse event*” OR toxicity OR “toxic* test*” OR “toxic* assessment*” OR “chemotherap* assessment*” OR “symptom* management” OR “symptom* assessment” OR ctcae OR “common terminology criteria for adverse events”) AND (“ambulatory oncology” OR “ambulatory care” OR outpatient*OR “outpatient service*”) AND (cancer OR neoplasm* OR carcinoma OR tumour* OR tumor* OR metasta* OR malignan* OR oncolog* OR “cancer care”) AND (“patient-reported outcome measures” OR “patient-reported outcomes”) AND (attitude* OR “nursing experience*” OR “quality improvement” OR perspective* OR workload* OR cost* OR budget* OR approach* OR method* OR outlook* OR view* OR position* OR stance* OR “personal satisfaction” OR satisfaction* OR experience*)	69

Appendix E

Ambulatory Oncology Nursing Perspectives of Patient Reported Outcomes
Abstract Review Form

First Author & Year: _____ Reference #: _____ Abstractor Initials: _____

Primary Inclusion & Exclusion Criteria			
1. Original Research (exclude review, editorials, commentaries, letters to the editor, theoretical papers, etc.)	**Yes**	**No**	**Cannot Determine**
2. Study Specified: a. Adult-Only Populations >18 y/o	**Yes**	**No**	**Cannot Determine**
3. Study Specified: b. PRO/PROM Tool	**Yes**	**No**	**Cannot Determine**
4. Study Specified: c. English Language	**Yes**	**No**	**Cannot Determine**
5. Study Size Specified: a. *N* = _____	**Yes**	**No**	**Cannot Determine**
6. Discipline Specified: a. Nurses (LPN, RN, APN, CNS, NP) **(**exclude patient, relative, or caregiver perspectives and/or experiences)	**Yes**	**No**	**Cannot Determine**
7. Setting: a. Ambulatory or outpatient cancer care (exclude inpatient or palliative care settings)	**Yes**	**No**	**Cannot Determine**
8. Cancer Care Program: a. Routine cancer care (exclude cancer screening, surgical programs, clinical trials, or other programs offered externally to ambulatory oncology settings)	**Yes**	**No**	**Cannot Determine**

Retain for:
_____BACKGROUND/DISCUSSION
_____REVIEW OF REFERENCES
_____Other_____

Comments:

Appendix F

Literature Review Inclusion & Exclusion Criteria

Table 7

Literature Review Inclusion & Exclusion Criteria

Inclusion Criteria	**Exclusion Criteria**
Adult Only Studies(18+ years of age) in Ambulatory, Outpatient, or Community Cancer Care	Patients <18 y/o in any Cancer Setting or Inpatient Settings
Articles published between 2008-2018	Articles published prior to 2008
English Articles	Non-English Articles
Oncology Nurse Perspectives OR Oncology Nurse Experiences with PROs	Non-nursing perspectives and experiences with patient-reported outcomes
Number of nurses included in the study must be specified	
Type of nurse is specified	
PROs are collected in a medical oncology, radiation oncology or malignant hematology clinical setting	Studies involving clinical trials (all phases)
All PRO tools included	
Solid tumours (stage 1-4 on tumour, nodes, metastasis 6th edition in all stages of the cancer trajectory and malignant hematology	Patients whom do not have a cancer diagnosis