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BMJ Open

Implementation strategies to support evidence-informed symptom management among outpatient oncology nurses: A scoping review protocol

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ABSTRACT

Introduction: Despite the availability of clinical practice guidelines for cancer symptom management, cancer care providers do not consistently utilize them in practice. Oncology nurses in outpatient settings are well-positioned to use established guidelines to inform symptom assessment and management; however, issues concerning inconsistent implementation persist. This scoping review aims to identify and describe the components of implementation strategies that have been used to enhance the adoption, implementation, and sustainability of symptom management guidelines among specialized and advanced oncology nurses in cancer-specific outpatient settings. Factors influencing guideline implementation will also be identified.

Methods and analysis: This scoping review will follow Joanna Briggs Institute methodology. Electronic databases CINAHL, Embase, Emcare, MEDLINE(R), and grey literature sources will be searched for studies published in English since the year 2000. Primary studies and grey literature reports of any design that include specialized or advanced oncology nurses practicing in cancer-specific outpatient settings will be eligible. Sources describing implementation strategies to enhance the adoption, implementation, and sustainability of cancer symptom management guidelines and/or factors influencing implementation will be included. Two reviewers will independently screen for eligibility and extract data. Data extraction will be guided by the Consolidated Framework for Implementation Research (CFIR). Data will be analyzed descriptively and synthesized according to CFIR constructs. Results will be presented through tabular/diagrammatic formats and narrative summary.

Ethics and dissemination: Ethics approval is not required for this scoping review. Planned knowledge translation activities include a national conference presentation, peer-reviewed publication, academic social media channels, and dissemination within local oncology nursing and patient networks.

Keywords: Evidence-based practice; implementation science; knowledge translation; oncology nursing; symptom management

INTRODUCTION

Cancer incidence rates are steadily increasing worldwide, in part due to rapidly aging populations, population growth, and lifestyle/environmental risk factors.¹ Cancer symptom burden, which is a result of both the disease and its intensive treatments, can be severe and distressing.²⁻⁴ Across the cancer continuum, patients may experience multiple, concurrent symptoms including pain, fatigue, nausea, vomiting, anxiety, depression, and more.^{2 5 6} Left unmanaged, these symptoms can negatively impact patient quality of life^{6 7} and functional ability,⁸ and contribute to potentially avoidable emergency department visits and hospitalizations.⁹⁻¹¹

In response to this significant burden, efforts by cancer care institutions, professional associations, and researchers worldwide have resulted in multiple repositories collating evidence-based cancer symptom management guidelines (SMG) to inform high-quality patient care.¹²⁻¹⁹ Although health professionals have the best of intentions to provide evidence-informed care, their overall uptake of research evidence into clinical practice and policy decision making is inconsistent and often delayed for many years.²⁰ Despite increasing awareness and availability of SMG over the last decade, interdisciplinary cancer care providers do not consistently utilize these guidelines in practice, citing barriers such as lack of knowledge, time, buy-in, resources, and enforcement.^{21 22} Recent empirical evidence suggests SMG adherence remains low; for example, it is estimated that oncologists provide recommended antiemetic prescriptions to only 15% of European patients,²³ and only 33% of outpatient oncology nurses in one Canadian setting were found to document symptom management according to established guidelines.²⁴ Subsequently, cancer-related symptoms are often unmanaged.²⁵⁻²⁷

Global efforts to meet rising demands for cancer care have resulted in a shift in cancer service delivery from traditional inpatient models to novel outpatient approaches.^{28 29} Cancer-specific outpatient settings range from day hospitals, where intensive therapies and supportive care services are delivered, to outpatient clinics, which provide consultation and follow-up support.²⁸ Given their unique role as the regular point of contact for patients and families living with cancer, specialized and advanced oncology nurses in outpatient settings are well-positioned to provide evidence-informed symptom assessment and management in line with SMG. Specialized oncology nurses are defined as nurses with knowledge and experience in cancer care, and whose primary focus is the care of patients and families throughout the cancer continuum.³⁰ Advanced oncology nurses include those with a master's degree, advanced clinical reasoning and practice knowledge, and enhanced leadership abilities in order to practice in an expanded role.^{30 31} Thus, specialized and advanced oncology nurses in cancer-specific outpatient settings are relevant targets for SMG implementation.

Eligibility criteria

Participants

Due to the highly specialized area of practice in which cancer SMG are implemented, eligible studies will be limited to those in which the implementation strategies target specialized and/or advanced practice oncology nurses, as defined above. Nursing designations for specialized and advanced oncology nurses will include registered nurses (RNs), licensed practical nurses (LPNs), registered practical nurses (RPNs), or advanced practice nurses (APNs). APNs will be considered an umbrella term that includes clinical nurse specialists (CNS), nurse practitioners (NPs), and those working in generically titled advanced practice nursing roles.^{31 45} Studies involving other oncology care providers will be considered if specialized or advanced oncology nurses are included within the population and findings for nurses are reported separately. Studies involving nursing students or unregulated care providers alone will be excluded. Given that SMG and implementation strategies are likely to differ between adult and pediatric patients, this review will consider studies involving adult oncology populations only.

Concept

Eligible studies must report one or both of the following concepts: 1) implementation strategies and strategy components that have been used to enhance the adoption, implementation, and/or sustainability of cancer SMG, and/or 2) factors influencing the implementation of cancer SMG, understood broadly as the influences on specialized and advanced oncology nurses' behaviour³² related to the adoption, implementation, and sustainability of SMG. These complex factors may act as enablers or barriers to implementation.⁴⁶

Studies involving the implementation of SMG for the management of any cancer-related symptom will be included, such as: anxiety, depression, constipation, diarrhea, dyspnea, fatigue, fever, hand-foot syndrome, loss of appetite, nausea, vomiting, oral mucositis, pain, sexual and sleep disturbances, urinary symptoms, neuropathy, skin reactions, lymphedema, and more.¹²⁻¹⁴ For the purpose of this review, the definition of SMG will include both explicit clinical practice guidelines providing patient care recommendations based on a systematic evidence synthesis and assessment of benefits/harms,⁴⁷ and evidence-based care protocols, bundles, pathways, and/or checklists. These terms, which are often used interchangeably in the literature,⁴⁸ describe local approaches to evidence-informed care delivery through the translation of general guideline recommendations into a specific care plan or set of procedures followed by healthcare providers.^{49 50}

Context

	(adopt* OR uptake OR implement* OR utiliz* OR integrat* OR sustain*) OR TX (barrier* OR facilitat*)
#3	(MH “Practice Guidelines”) OR (MH “Guideline Adherence”) OR (MH “Nursing Practice, Evidence-Based+”) OR (MH Nursing Protocols+) OR TX (guideline*) OR TX (evidence-informed practice OR evidence-informed nursing) OR TX [(evidence based OR evidence informed) N2 (protocol* OR bundle* OR pathway* OR checklist* OR guideline*)]
#4	#1 AND #2 AND #3
Limits: Publication date 2000 to present; English language	

Due to resource limitations, only articles published in English will be considered for inclusion. Given that efforts to promote comprehensive cancer symptom management through standardized screening tools, patient-reported outcome measures, and the establishment of evidence-based guidelines have primarily occurred within the last 15 years,²⁵ limits will also be placed on the year of publication. Only articles published from the year 2000 to present will be included, as relevant studies are unlikely to exist before this time.

The OpenGrey and ProQuest Dissertations and Theses Global (ProQuest) databases will be used to locate grey literature sources, including theses, dissertations, reports, and quality improvement articles. Websites of relevant nursing organizations and publications, including the Canadian Association of Nurses in Oncology (CANO), Oncology Nursing Society (ONS), and International Society of Nurses in Cancer Care will be searched. Conference proceedings for the CANO Annual Conference, ONS Congress, and International Conference on Cancer Nursing will be screened. Given resource limitations, this targeted screening will be limited to conference proceedings from the last five years. Authors of potentially relevant conference abstracts will be contacted in an attempt to locate full published or unpublished reports, as available.

Study selection

All citations identified in the search will be imported into Covidence (Veritas Health Innovation, Melbourne, Australia) and duplicates will be removed. Two independent reviewers will perform all levels of screening, with any conflicts resolved through discussion or with the input of a third reviewer. Following a pilot test, titles and abstracts of imported citations will be screened against eligibility criteria. Potentially relevant papers will then be retrieved in full and assessed in detail according to established inclusion criteria. Reasons for exclusion of full-text papers will be recorded and reported in the scoping review. The results of the search will be reported in full and presented in a

Part D: Description of Evidence for Implementation		
Type and source of evidence for implementation (e.g., guideline, pathway)		
Symptom(s) targeted		
Part E: Implementation Strategies & Outcomes		
Name of implementation strategy or combination of strategies used		
Actor(s): Who delivered the strategy?		
Action(s): Steps and processes used		
Target(s): To whom and what were the actions directed toward?		
Temporality: Phase or timing of the intervention		
Dose: Frequency and intensity		
Justification: Implementation model, theory, or framework		
Types of outcomes reported (i.e., implementation, service, client)		
Measurement tools and methods of data analysis		
Part F: Factors Influencing Implementation		
CFIR Domain	Facilitators	Barriers
Intervention characteristics		
Inner setting		
Outer setting		
Characteristics of individuals		
Implementation process		
Additional notes:		

Proctor and colleagues³⁴ propose seven components of implementation strategies, namely actors, actions, targets, temporality, dose, justifications, and outcomes, that should be specified within an implementation research study or practice initiative. These categories will therefore be used to extract implementation strategy components. The actor refers to the individual(s) responsible for delivering the strategy, while actions are the steps or processes of implementation. Targets describe who and/or what the actions are directed toward (e.g., known evidence gap or barrier to implementation). Temporality relates to intervention timing, while dose considers intervention frequency and intensity. Justification refers to the theoretical rationale and/or research evidence supporting an implementation initiative. In line with a scoping review approach,⁴⁴ outcome data will not be collected. However, the types of implementation outcomes (e.g., acceptability, feasibility, cost), service outcomes (e.g., effectiveness, patient-centredness), and client outcomes (e.g.,

1
2 276 symptomatology)³³ reported will be extracted alongside the measurement tools and methods of data
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4 277 analysis used within each of the included studies.

5 278 A variety of determinant frameworks exist to identify facilitators and barriers to implementation
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7 279 of an evidence-informed intervention or practice.⁴⁶ The Consolidated Framework for Implementation
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9 280 Research (CFIR) by Damschroder and colleagues is a comprehensive determinants framework that
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11 281 supports exploration of complex factors influencing implementation. CFIR contains 39 constructs
12 282 within five domains: intervention characteristics (e.g., complexity, adaptability), outer setting (e.g.,
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14 283 patient needs), inner setting (e.g., culture, resources), characteristics of individuals (e.g., knowledge,
15
16 284 beliefs), and implementation process (e.g., planning, engaging).⁴² These domains will be used to guide
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18 285 data extraction of reported facilitators and barriers to SMG adoption, implementation, and
19
20 286 sustainability among outpatient oncology nurses. Authors will be contacted to request missing or
21
22 287 additional data, where required.

23 288 **Data analysis and presentation**

24 289 A descriptive approach to data analysis will be taken, with results presented using diagrams,
25
26 290 tables, and narrative summary. A table of included studies will be provided to display study
27
28 291 characteristics, as described above. Implementation strategies will be categorized using the ERIC
29
30 292 taxonomy³⁵ and frequency counts will be presented to illustrate which implementation strategies or
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32 293 combinations of strategies have been used to enhance the adoption, implementation, and sustainability
33 294 of cancer SMG. Implementation strategies used in more than one source will be mapped according to
34
35 295 their corresponding study designs, settings, and outcome measurements to inform future research in
36
37 296 this area, including whether there is sufficient evidence to conduct a systematic review of intervention
38
39 297 effectiveness. Barriers and facilitators to SMG adoption, implementation, and sustainability will be
40 298 analyzed and described according to the CFIR domains and constructs, as applicable.⁴² Factors
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42 299 influencing SMG implementation will be summarized and presented in a conceptual model consistent
43
44 300 with the CFIR structure.

45 301 **Patient and public involvement**

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47 302 While patients and the public were not directly involved in the design of this scoping review
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49 303 protocol, patient engagement is a critical feature of provincial and national initiatives to establish
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51 304 improvement priorities for cancer care. Enhancing person-centred care and quality of life through
52 305 evidence-based symptom management is a top priority in the current Ontario Cancer Plan⁵² and
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54 306 Canadian Strategy for Cancer Control.⁵³ As oncology nurses within a regional cancer centre, two
55
56 307 authors provide a contextually relevant perspective regarding local strategic priorities to optimize
57 308 symptom assessment and management through implementation of evidence-informed tools and new
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models of care. The authors plan to engage patients, caregivers, oncology nurses, and organizational leaders within this setting to interpret the findings of this scoping review and co-design a contextually relevant intervention to support SMG implementation in outpatient oncology nursing practice.

Ethics and dissemination

Human participants will not be involved in the proposed scoping review of published and grey literature sources; therefore, research ethics board approval is not required. Planned knowledge translation activities include a presentation at a national conference to a professional oncology nursing audience, a peer-reviewed journal publication, and academic social media platforms. Dissemination of scoping review findings within local oncology nursing and patient networks will also take place to gain input on recommendations for practice, policy, and research.

CONCLUSION

Distressing cancer-related symptoms continue to pose a significant burden for patients living with cancer. Despite the availability of several evidence-based SMG, cancer care providers do not consistently utilize these guidelines to inform best practices in symptom management. This scoping review will identify implementation strategies that have been used to enhance the adoption, implementation, and sustainability of SMG among specialized and advanced oncology nurses in cancer-specific outpatient settings. Synthesizing a range of implementation strategies that have been used across diverse cancer-specific outpatient settings will provide valuable future direction for oncology nursing leaders as they design local implementation strategies to support the adoption, implementation, and sustainability of existing SMG. The systematic mapping of existing implementation strategies and their components is also expected to identify potential knowledge gaps and inform future implementation research priorities in oncology nursing. A theoretically informed synthesis of factors influencing SMG implementation through application of the CFIR is expected to inform the development of contextually relevant strategies to foster implementation success. This is necessary to support the uptake of evidence-informed oncology nursing practices, which will ultimately improve patient health outcomes and quality of life.

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Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	4-5
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	5
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	This is the review protocol
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	6-7
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	7-8
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	7-8
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	8-9
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	9-11
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	9-11
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	N/A



SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	11
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	N/A
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	N/A
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	N/A
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	N/A
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	N/A
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	N/A
Limitations	20	Discuss the limitations of the scoping review process.	3
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	12
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	13

JB1 = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JB1 guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med*. 2018;169:467–473. doi: 10.7326/M18-0850.

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Implementation strategies to address barriers to evidence-informed symptom management among outpatient oncology nurses: A scoping review protocol

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ABSTRACT

Introduction: Despite the availability of clinical practice guidelines for cancer symptom management, cancer care providers do not consistently utilize them in practice. Oncology nurses in outpatient settings are well-positioned to use established guidelines to inform symptom assessment and management; however, issues concerning inconsistent implementation persist. This scoping review aims to 1) identify reported barriers and facilitators influencing symptom management guideline adoption, implementation, and sustainability among specialized and advanced oncology nurses in cancer-specific outpatient settings, and 2) identify and describe the components of strategies that have been used to enhance the implementation of symptom management guidelines.

Methods and analysis: This scoping review will follow Joanna Briggs Institute methodology. Electronic databases CINAHL, Embase, Emcare, MEDLINE(R), and grey literature sources will be searched for studies published in English from January 2000 to March 2022. Primary studies and grey literature reports of any design that include specialized or advanced oncology nurses practicing in cancer-specific outpatient settings will be eligible. Sources describing factors influencing the adoption, implementation, and sustainability of cancer symptom management guidelines and/or strategies to enhance guideline implementation will be included. Two reviewers will independently screen for eligibility and extract data. Data extraction of factors influencing implementation will be guided by the Consolidated Framework for Implementation Research (CFIR), and the seven dimensions of implementation strategies (i.e., actors, actions, targets, temporality, dose, justifications, outcomes) will be used to extract implementation strategy components. Factors influencing implementation will be analyzed descriptively, synthesized according to CFIR constructs, and linked to the Expert Recommendations for Implementation Change (ERIC) strategies. Results will be presented through tabular/diagrammatic formats and narrative summary.

Ethics and dissemination: Ethics approval is not required for this scoping review. Planned knowledge translation activities include a national conference presentation, peer-reviewed publication, academic social media channels, and dissemination within local oncology nursing and patient networks.

Keywords: Evidence-based practice; implementation science; knowledge translation; oncology nursing; symptom management

INTRODUCTION

Cancer incidence rates are steadily increasing worldwide, in part due to rapidly aging populations, population growth, and lifestyle/environmental risk factors.¹ Cancer symptom burden, which is a result of both the disease and its intensive treatments, can be severe and distressing.²⁻⁴ Across the cancer continuum, patients may experience multiple, concurrent symptoms including pain, fatigue, nausea, vomiting, anxiety, depression, and more.^{2 5 6} Left unmanaged, these symptoms can negatively impact patient quality of life^{6 7} and functional ability,⁸ and contribute to potentially avoidable emergency department visits and hospitalizations.⁹⁻¹¹

In response to this significant burden, efforts by cancer care institutions, professional associations, and researchers worldwide have resulted in multiple repositories collating evidence-based cancer symptom management guidelines (SMG) to inform high-quality patient care.¹²⁻¹⁹ Although health professionals have the best of intentions to provide evidence-informed care, their overall uptake of research evidence into clinical practice and policy decision making is inconsistent and often delayed for many years.²⁰ Despite increasing awareness and availability of SMG over the last decade, interdisciplinary cancer care providers do not consistently utilize these guidelines in practice, citing barriers such as lack of knowledge, time, buy-in, resources, and enforcement.^{21 22} Recent empirical evidence suggests SMG adherence remains low; for example, it is estimated that oncologists provide recommended antiemetic prescriptions to only 15% of European patients,²³ and only 33% of outpatient oncology nurses in one Canadian setting were found to document symptom management according to established guidelines.²⁴ Subsequently, cancer-related symptoms are often unmanaged.²⁵⁻²⁷

Global efforts to meet rising demands for cancer care have resulted in a shift in cancer service delivery from traditional inpatient models to novel outpatient approaches.^{28 29} Cancer-specific outpatient settings range from day hospitals, where intensive therapies and supportive care services are delivered, to outpatient clinics, which provide consultation and follow-up support.²⁸ Given their unique role as the regular point of contact for patients and families living with cancer, specialized and advanced oncology nurses in outpatient settings are well-positioned to provide evidence-informed symptom assessment and management in line with SMG. Specialized oncology nurses are defined as nurses with knowledge and experience in cancer care, and whose primary focus is the care of patients and families throughout the cancer continuum.³⁰ Advanced oncology nurses include those with a master's degree, advanced clinical reasoning and practice knowledge, and enhanced leadership abilities in order to practice in an expanded role.^{30 31} Thus, specialized and advanced oncology nurses in cancer-specific outpatient settings are relevant targets for SMG implementation.

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2 131 Implementation science is the study of methods to promote the uptake of evidence-based
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4 132 research findings, with the goal of improving the quality of health services.³² Implementation strategies
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6 133 have been defined as the methods used to enhance the adoption (initial uptake), implementation
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8 134 (routine use), and sustainability (continued use) of research findings.^{33 34} The Expert Recommendations
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10 135 for Implementing Change (ERIC) project provides a taxonomy of 73 implementation strategies, such as
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12 136 audit and provide feedback, conduct educational meetings, identify and prepare champions, and remind
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14 137 clinicians.³⁵ These strategies may be used discretely or in combination.³⁵ An understanding of which
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16 138 strategies have been used previously to support guideline implementation among specialized and
17
18 139 advanced oncology nurses would be beneficial for oncology nursing leaders seeking to support the
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20 140 implementation of SMG into routine practice.

21 141 Cumulative evidence has identified several contextual influences on guideline implementation
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23 142 and evidence-informed nursing practice, in general.³⁶⁻³⁹ However, the majority of synthesized studies
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25 143 have been conducted in acute care, hospital-based settings.³⁷⁻³⁹ Given the unique workflow and patient
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27 144 population, the transferability of these findings into specialized oncology nursing practice in an
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29 145 outpatient context is unclear. Although several single studies and grey literature sources regarding
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31 146 SMG implementation within outpatient oncology nursing settings have been located,^{21 40 41} no research
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33 147 syntheses have been identified that describe implementation strategies for evidence-informed symptom
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35 148 management among outpatient oncology nurses. Given that factors such as practice setting and
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37 149 guideline characteristics are known to substantially influence implementation success,⁴² identifying
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39 150 contextually relevant interventions that target known barriers to SMG implementation among
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41 151 specialized and advanced oncology nurses is key.^{39 43} A comprehensive synthesis of factors influencing
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43 152 SMG implementation and strategies that have been tested to address these barriers and/or facilitators is
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45 153 therefore necessary to inform the development of implementation strategies that can be locally tailored
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47 154 to support high-quality nursing and outpatient cancer care.

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49 155 This scoping review aims to 1) identify reported barriers and facilitators influencing SMG
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51 156 adoption, implementation, and sustainability among specialized and advanced oncology nurses in
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53 157 cancer-specific outpatient settings, and 2) identify and describe the components of strategies that have
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55 158 been used to enhance the implementation of SMG. A scoping review approach will provide robust
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57 159 descriptions of strategy components and exploration of factors influencing SMG implementation
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59 160 among oncology nurses in cancer-specific outpatient settings.

60
61 **METHODS**

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63 The proposed scoping review will be conducted in accordance with the Joanna Briggs Institute (JBI)
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65 methodology for scoping reviews.⁴⁴ The JBI approach reflects the most current methodological

guidance on the conduct of scoping reviews and includes the following steps: defining research objectives; developing inclusion criteria; preparing a detailed protocol; searching, selecting, extracting, and analyzing evidence; presenting results; and summarizing the evidence.⁴⁴ This protocol paper will outline the eligibility criteria and planned approach to searching, selecting, extracting, and synthesizing evidence for the proposed scoping review.

Eligibility criteria

Participants

Due to the highly specialized area of practice in which cancer SMG are implemented, eligible studies will be limited to those in which the implementation strategies target specialized and/or advanced practice oncology nurses, as defined above. Nursing designations for specialized and advanced oncology nurses will include registered nurses (RNs), licensed practical nurses (LPNs), registered practical nurses (RPNs), or advanced practice nurses (APNs). APNs will be considered an umbrella term that includes clinical nurse specialists (CNS), nurse practitioners (NPs), and those working in generically titled advanced practice nursing roles.^{31 45} Studies involving other oncology care providers will be considered if specialized or advanced oncology nurses are included within the population and findings for nurses are reported separately. Studies involving nursing students or unregulated care providers alone will be excluded. Given that SMG and implementation strategies are likely to differ between adult and pediatric patients, this review will consider studies involving adult oncology populations only.

Concept

Eligible studies must report one or both of the following concepts: 1) implementation strategies and strategy components that have been used to enhance the adoption, implementation, and/or sustainability of cancer SMG, and/or 2) factors influencing the implementation of cancer SMG, understood broadly as the influences on specialized and advanced oncology nurses' behaviour³² related to the adoption, implementation, and sustainability of SMG. These complex factors may act as enablers or barriers to implementation.⁴⁶

Studies involving the implementation of SMG for the management of cancer-related symptoms for any type of cancer will be included, such as: anxiety, depression, constipation, diarrhea, dyspnea, fatigue, fever, hand-foot syndrome, loss of appetite, nausea, vomiting, oral mucositis, pain, sexual and sleep disturbances, urinary symptoms, neuropathy, skin reactions, lymphedema, and more.¹²⁻¹⁴ For the purpose of this review, the definition of SMG will include both explicit clinical practice guidelines providing patient care recommendations based on a systematic evidence synthesis and assessment of benefits/harms,⁴⁷ and evidence-based care protocols, bundles, pathways, and/or checklists focused on

initial search and preliminary study screening, it is anticipated that between 30-40 articles will be included in the full scoping review.

Table 1: CINAHL (EBSCO) Search Strategy

Search	Query
#1	(MH "Oncologic Nursing+") OR TX [(nurs* OR RN OR RPN OR LPN) N5 (oncolog* OR cancer)] OR TX [(nurs* OR APN OR CNS OR NP) N5 (oncolog* OR cancer)]
#2	(MH "Diffusion of Innovation") OR (MH "Implementation Science") OR (MH "Professional Compliance") OR TX ("implementation strateg*") OR TX ("knowledge translation") OR TX (adopt* OR uptake OR implement* OR utiliz* OR integrat* OR sustain*) OR TX (barrier* OR facilitat*)
#3	(MH "Practice Guidelines") OR (MH "Guideline Adherence") OR (MH "Nursing Practice, Evidence-Based+") OR (MH Nursing Protocols+) OR TX (guideline*) OR TX (evidence-informed practice OR evidence-informed nursing) OR TX [(evidence based OR evidence informed) N2 (protocol* OR bundle* OR pathway* OR checklist* OR guideline*)]
#4	#1 AND #2 AND #3
Limits: Publication date 2000 to present; English language	

Due to resource limitations, only articles published in English will be considered for inclusion. Given that efforts to promote comprehensive cancer symptom management through the establishment of evidence-based guidelines have primarily occurred within the last 15 years,²⁵ limits will also be placed on the year of publication. Only articles published from the year 2000 to present will be included, as relevant studies are unlikely to exist before this time.

The OpenGrey and ProQuest Dissertations and Theses Global (ProQuest) databases will be used to locate grey literature sources, including theses, dissertations, reports, and quality improvement articles. Websites of relevant nursing organizations and publications, including the Canadian Association of Nurses in Oncology (CANO), Oncology Nursing Society (ONS), and International Society of Nurses in Cancer Care will be searched. Conference proceedings for the CANO Annual Conference, ONS Congress, and International Conference on Cancer Nursing will be screened. Given resource limitations, this targeted screening will be limited to conference proceedings from the last five years. Authors of potentially relevant conference abstracts will be contacted in an attempt to locate full published or unpublished reports, as available.

Study selection

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2 248 All citations identified in the search will be imported into Covidence (Veritas Health
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4 249 Innovation, Melbourne, Australia) and duplicates will be removed. Two independent reviewers will
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6 250 perform all levels of screening, with any conflicts resolved through discussion or with the input of a
7
8 251 third reviewer. Following a pilot test, titles and abstracts of imported citations will be screened against
9
10 252 eligibility criteria. Potentially relevant papers will then be retrieved in full and assessed in detail
11
12 253 according to established inclusion criteria. Reasons for exclusion of full-text papers will be recorded
13
14 254 and reported in the scoping review. The results of the search will be reported in full and presented in a
15
16 255 Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scoping Reviews (PRISMA-
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18 256 ScR) flow diagram.⁵¹

17
18 257 **Data extraction**

19 258 Data will be extracted in duplicate by two independent reviewers using a standardized data
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21 259 extraction form (Table 2). Any disagreements will be resolved through discussion or with input from a
22
23 260 third reviewer. The data extraction tool will be piloted by the review team and revised as necessary
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25 261 during the process of data extraction, and any modifications will be reported in the scoping review.
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27 262 General characteristics of included studies will be collected, including study design, objective(s), and
28
29 263 the country in which the study was conducted. Within population, the type of oncology nursing role
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31 264 will be identified (e.g., RN, NP) in an effort to determine whether implementation strategies and factors
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33 265 influencing implementation differ between specialized and advanced oncology nurses. Where reported,
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35 266 nurses' educational backgrounds, oncology specific training, and years of experience will also be
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37 267 extracted as these factors have previously been associated with nurses' use of SMG.²¹ Within context, a
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39 268 description of the outpatient oncology practice setting (e.g., day hospital, clinic), type of setting (e.g.,
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41 269 academic, rural, urban), patient population served (e.g., cancer type), services provided (e.g., systemic
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43 270 therapy, pain and symptom management), and size of outpatient setting (e.g., number of patients seen,
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45 271 staff size) will be extracted. A description of the evidence being implemented will also be collected,
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47 272 including the source(s) of the guideline, bundle, protocol, pathway, and/or checklist being used and the
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49 273 target cancer symptom(s).

47 274 **Table 2: Data Extraction Instrument**

Part A: Study Characteristics	
Study design or type of grey literature	
Purpose/objectives	
Country	
Part B: Population	

Type of oncology nursing role(s) (e.g., RN, NP)		
Educational background, oncology specific training, and years of experience		
Sample size		
Part C: Context		
Cancer-specific outpatient setting		
Type and size of setting		
Patient population served and services provided		
Part D: Description of Evidence for Implementation		
Type and source of evidence for implementation (e.g., guideline, pathway)		
Cancer type		
Symptom(s) targeted		
Part E: Factors Influencing Implementation		
CFIR Domain	Facilitators	Barriers
Intervention characteristics		
Inner setting		
Outer setting		
Characteristics of individuals		
Implementation process		
Part F: Implementation Strategies & Outcomes		
Name of implementation strategy or combination of strategies used		
Actor(s): Who delivered the strategy?		
Action(s): Steps and processes used		
Target(s): To whom and what were the actions directed toward?		
Temporality: Phase or timing of the intervention		
Dose: Frequency and intensity		
Justification: Implementation model, theory, or framework		
Types of outcomes reported (i.e., implementation, service, client)		
Measurement tools and methods of data analysis		
Additional notes:		

A variety of determinant frameworks exist to identify facilitators and barriers to implementation of an evidence-informed intervention or practice.⁴⁶ The Consolidated Framework for Implementation Research (CFIR) by Damschroder and colleagues is a comprehensive determinants framework that

1
2 278 supports exploration of complex factors influencing implementation. CFIR contains 39 constructs
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4 279 within five domains: intervention characteristics (e.g., complexity, adaptability), outer setting (e.g.,
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6 280 patient needs), inner setting (e.g., culture, resources), characteristics of individuals (e.g., knowledge,
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8 281 beliefs), and implementation process (e.g., planning, engaging).⁴² These domains will be used to guide
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10 282 data extraction of reported facilitators and barriers to SMG adoption, implementation, and
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12 283 sustainability among outpatient oncology nurses.

13 284 Proctor and colleagues³⁴ propose seven components of implementation strategies, namely
14 285 actors, actions, targets, temporality, dose, justifications, and outcomes, that should be specified within
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16 286 an implementation research study or practice initiative. These categories will therefore be used to
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18 287 extract implementation strategy components. An open description of the types of implementation
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20 288 strategies will be extracted, as reported by study authors. The actor refers to the individual(s)
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22 289 responsible for delivering the strategy, while actions are the steps or processes of implementation.
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24 290 Targets describe who and/or what the actions are directed toward (e.g., known evidence gap or barrier
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26 291 to implementation). Temporality relates to intervention timing, while dose considers intervention
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28 292 frequency and intensity. Justification refers to the theoretical rationale and/or research evidence
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30 293 supporting an implementation initiative. In line with a scoping review approach,⁴⁴ outcome data will
31
32 294 not be collected. However, the types of implementation outcomes (e.g., acceptability, feasibility, cost),
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34 295 service outcomes (e.g., effectiveness, patient-centredness), and client outcomes (e.g.,
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36 296 symptomatology)³³ reported will be extracted alongside the measurement tools and methods of data
37
38 297 analysis used within each of the included studies. Authors will be contacted to request missing or
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40 298 additional data, where required.

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42 299 **Data analysis and presentation**

43 300 A descriptive approach to data analysis will be taken, with results presented using diagrams,
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45 301 tables, and narrative summary. A table of included studies will be provided to display study
46
47 302 characteristics, as described above. Barriers and facilitators to SMG adoption, implementation, and
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49 303 sustainability will be analyzed and described according to the CFIR domains and constructs, as
50
51 304 applicable.⁴² Factors influencing SMG implementation will be summarized and presented in a
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53 305 conceptual model consistent with the CFIR structure. The ERIC taxonomy³⁵ will be used to categorize
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55 306 implementation strategies based on the descriptions extracted, and frequency counts will be presented
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57 307 to illustrate which implementation strategies or combinations of strategies have been used to enhance
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59 308 the adoption, implementation, and sustainability of cancer SMG. Implementation strategies used in
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61 309 more than one source will be mapped according to their corresponding study designs, settings, and

outcome measurements to inform future research in this area, including whether there is sufficient evidence to conduct a systematic review of intervention effectiveness.

Implementation strategies will also be mapped to the barriers and/or facilitators addressed in the included studies. Implementation barriers (as categorized using the CFIR) will then be linked to ERIC implementation strategies following the approach described by Waltz and colleagues⁵², which provides top suggestions for strategies that may be used to overcome each CFIR-identified barrier. These expert recommendations will be compared and contrasted with implementation strategies used to date to inform future implementation planning. This approach is expected to guide the selection of implementation strategies that might be used to overcome reported barriers and leverage potential facilitators to SMG adoption, implementation, and sustainability among specialized and advanced oncology nurses in cancer-specific outpatient settings.

Patient and public involvement

While patients and the public were not directly involved in the design of this scoping review protocol, patient engagement is a critical feature of provincial and national initiatives to establish improvement priorities for cancer care. Enhancing person-centred care and quality of life through evidence-based symptom management is a top priority in the current Ontario Cancer Plan⁵³ and Canadian Strategy for Cancer Control.⁵⁴ As oncology nurses within a regional cancer centre, two authors provide a contextually relevant perspective regarding local strategic priorities to optimize symptom assessment and management through implementation of evidence-informed tools and new models of care. The authors plan to engage patients, caregivers, oncology nurses, and organizational leaders within this setting to interpret the findings of this scoping review and co-design a contextually relevant intervention to support SMG implementation in outpatient oncology nursing practice.

Ethics and dissemination

Human participants will not be involved in the proposed scoping review of published and grey literature sources; therefore, research ethics board approval is not required. Planned knowledge translation activities include a presentation at a national conference to a professional oncology nursing audience, a peer-reviewed journal publication, and academic social media platforms. Dissemination of scoping review findings within local oncology nursing and patient networks will also take place to gain input on recommendations for practice, policy, and research.

Strengths and limitations

This review will follow current methodological and reporting guidelines for scoping reviews, ensuring rigor and transparency in the review process and findings. It is conceivable that published implementation initiatives might represent more extensive approaches to SMG implementation and

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2 343 therefore may not capture barriers and strategies used across all cancer-specific outpatient settings;
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4 344 however, the inclusion of grey literature sources and broad eligibility criteria will be used to mitigate
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6 345 this potential weakness. Although patients and the public were not directly involved in the design of
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8 346 this scoping review protocol, these important stakeholders will be engaged in the interpretation and
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10 347 dissemination of the review findings.

11 348 **CONCLUSION**

12 349 Distressing cancer-related symptoms continue to pose a significant burden for patients living
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14 350 with cancer. Despite the availability of several evidence-based SMG, cancer care providers do not
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16 351 consistently utilize these guidelines to inform best practices in symptom management. This scoping
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18 352 review will provide a theoretically informed synthesis of factors influencing SMG adoption,
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20 353 implementation, and sustainability among specialized and advanced oncology nurses in cancer-specific
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22 354 outpatient settings and identify strategies that have been used to enhance the implementation of SMG.
23
24 355 Synthesizing a range of implementation strategies that have been used across diverse cancer-specific
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26 356 outpatient settings will provide valuable future direction for oncology nursing leaders as they design
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28 357 local implementation strategies to support the adoption, implementation, and sustainability of existing
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30 358 SMG. The systematic mapping of identified barriers to implementation strategies and their components
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32 359 is expected to identify potential knowledge gaps, inform the development of contextually relevant
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34 360 strategies to foster implementation success, and identify future implementation research priorities in
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36 361 oncology nursing. This is necessary to support the uptake of evidence-informed oncology nursing
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38 362 practices, which will ultimately improve patient health outcomes and quality of life.

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AUTHOR CONTRIBUTIONS

KT and RG conceptualized the review. KT drafted the protocol manuscript. DBL, SNS and RG contributed substantially to the design and revision of the protocol and have approved the final version. KT is the guarantor for this work.

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COMPETING INTERESTS

The authors have no conflicts of interest to disclose.

DATA AVAILABILITY STATEMENT

Data sharing not applicable as no datasets generated and/or analyzed for this protocol.

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Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	4-5
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	5
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	This is the review protocol
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	6-7
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	7-8
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	7-8
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	8-9
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	9-11
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	9-11
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	N/A

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	11-12
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	N/A
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	N/A
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	N/A
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	N/A
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	N/A
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	N/A
Limitations	20	Discuss the limitations of the scoping review process.	3, 12-13
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	13
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	14

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.
 * Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.
 † A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).
 ‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.
 § The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med*. 2018;169:467–473. doi: 10.7326/M18-0850.