

SCOPING REVIEW PROTOCOL

Acute care nurses' experience in providing evidence-based care for patients with laparotomy wounds: a scoping review protocol

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Abstract

Background Healthcare organisations provide policies and guidelines to direct the nursing staff's decision-making surrounding care in patients with surgical wounds to reflect the best current evidence. Nonetheless, nurses face multiple challenges in providing evidence-based care (EBC), leading to inconsistent surgical wound care. In addition, the reduction of the use of laparotomy procedures in elective practice has led to a potential decrease in competence and experience in its treatment regime, particularly related to wound management.

Study objective This is a protocol for a scoping review that will systematically search and synthesise available data on barriers and enablers to EBC for patients with laparotomy wounds reported by nurses in acute care settings. We will focus on the reported barriers and enablers related to wound assessment, wound products, dressing application, infection control techniques, documentation, holistic care and escalation of care.

Methods and analysis The Preferred Reporting Items for Systematic review and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist and explanation documents will guide the review protocol. The methodology framework formulated by Arksey and O'Malley¹, revised by Levac et al² and the Joanna Briggs Institute (JBI)³, will be utilised to structure the scoping review. Qualitative themes will be aligned with the Theoretical Domains Framework (TDF)⁴.

Keywords acute care, evidence-based care, experience, laparotomy wounds, nursing

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Introduction

A laparotomy is an invasive exploratory and emergency surgery often performed for gynaecological, pelvic and abdominal conditions⁵. It is also known as a coeliotomy or celiotomy procedure, and involves a large midline incision into the abdomen to expose the peritoneal cavity⁶. A laparotomy procedure can be utilised for investigating abdominal and pelvic symptoms and for diagnostic and curative purposes^{5,6}. A laparotomy procedure is useful in traumatic injuries that require immediate stabilisation and visualisation of the abdominal cavity⁷.

Large incisional wounds, such as laparotomy wounds, are not as prevalent as laparoscopic approaches yet require

skill and expertise to manage postoperatively^{5,8}. Laparotomy procedures have decreased in use, favouring diagnostic abdominal and gynaecological laparoscopic approaches, better known as keyhole surgery, since the 1990s in developed countries^{9,10}. The decrease is primarily due to the heightened risk of complications associated with open abdominal surgical approaches, high mortality risk, surgeon preference and experience, and extended length of stay for recovery^{5,11,12}.

Laparotomy procedures are still performed in acute life-threatening presentations, and 23,115 emergency laparotomy procedures were performed in the state of Victoria, Australia, between 2007–2016⁷. Furthermore, the

Australia and New Zealand Audit of Surgical Mortality (ANZASM) report indicates inconsistent recovery outcomes, postoperative complications, and a 18.1% mortality rate for patients 80 years and over after emergency laparotomy procedures^{7,13}. Similarly, in the United Kingdom, laparotomy procedures are associated with a high patient mortality rate and extensive financial, emotional and physical costs associated with postoperative recovery¹². In addition, the limited rationale for the laparotomy approach in elective practice has led to a potential reduction in expertise in managing large abdominal surgical wounds.

Current best practice recommendations for surgical abdominal wounds involve a holistic approach to treatment planning similar to any wound cared for by clinicians. Firstly, an assessment of the patient, including a comprehensive medical history and assessment of vital signs, nutritional status, presence of pain, and overall physical health, is required to ascertain the care needs of the patient and screening for influencing factors in wound healing^{14–17}. A vital component of wound practice is assessment, which requires the identification of the wound and documentation of the phase of wound healing, such as inflammation, reconstruction or proliferation, and maturation or remodelling phase¹⁸. Wounds are characterised by their type classification, such as acute and chronic, and healing classification, such as a surgical incision healing either by primary or secondary intention¹⁴. Physical wound details, such as its location, aetiology, wound duration, measurements of dimension, depth, peri-wound and wound edge status, appearance, condition of the wound bed and output, such as exudate or haemoserous volume, are routinely documented¹⁴. Clinicians may utilise classifications for surgical wounds by the Centers for Disease Control and Prevention (CDC), which are allocated by class I–IV and terms such as clean, clean-contaminated, contaminated and dirty-infected^{19–21}. The National Institute for Health and Care Excellence (NICE) has made alternative recommendations to guide clinicians in surgical wound management. These guidelines highlight modification of care through surgical wound phases such as preoperative, intraoperative and postoperative²².

Using and integrating validated clinical tools enables nurses to ensure they practise evidence-based care (EBC). For example, local-level policies will stipulate documentation of assessment findings and wound care in health organisations' wound charts and risk assessments to provide consistent care and standards for wound treatment. Clinicians are also suggested, through research evidence findings, to follow guidelines formed by the International Wound Bed Preparation Advisory Board such as the 'TIME' tool, which is a mnemonic for tissue, infection, moisture and edge²³. The TIME acronym can form the principles of assessment and wound bed preparation as a supportive tool in clinical decision-making and management for clinicians caring for clinical wounds^{23,24}. Nursing staff are advised to use their critical thinking in selecting the appropriate resources, with current product references and the wound practice

techniques to use, such as clean, aseptic, non-touch or sterile approaches, based on their assessment findings²⁵. Utilising the best available evidence, referring to local policies and procedures, and applying clinical judgement will assist staff in selecting the appropriate care for their patients' wound management.

Currently, no Australian guidelines which are strictly related and isolated to laparotomy wound care for acute care nurses have been identified in the available literature. Australian guidelines direct clinicians to broadly adopt practices for acute, postoperative wound care, focusing on the wound type not the surgical procedure. The use of generalised surgical wound recommendations targeting the multidisciplinary team are also available in the United Kingdom and the United States^{26–28}. Acute care nurses are encouraged to utilise these resources to guide their practice surrounding surgical wounds such as a laparotomy wounds.

Australian nurses work within the standards and scope of practice outlined by the Nursing and Midwifery Board of Australia (NMBA)²⁹. A nurses' scope underpins their clinical decisions and actions to be supported by the best available evidence²⁹. Concerning wound care management, nurses can refer to the *Wounds Australia Standards for wound prevention and management* document³⁰. Nevertheless, nurses' adoption of EBC over practice-based experience remains varied and limited, even though nurses are familiar with and believe in EBC's value for providing patient-centred care^{31–34}. In addition, nurses' theoretical underpinnings of EBC do not necessarily translate into conducting EBC habitually^{35,36}.

The relationship between EBC gaps in nursing, especially in wound care, is well established in the literature. For example, previous studies have identified clinicians' gaps in current knowledge and procedures, lack of education, access to resources and dressings, managerial support for utilising EBC, and environmental and psychological barriers in applying EBC to nurses caring for wounds^{37–42}. The investigation into the nursing role in surgical site infections is also thoroughly researched, establishing how to manage impediments in preventing hospital-acquired infections^{21,43,44}. The role of the acute nurse in wound care requires further investigation, especially concerning the reduction in laparotomy procedures, and significant postoperative complications and mortality rate. Nonetheless, acute care nurses' perspectives on barriers and enablers to providing EBC for patients with laparotomy wounds remains an area requiring further attention.

Study rationale

Previous studies have explored the broad predictors of nurses' EBC wound management activities and investigated the various factors influencing their wound-based care. This scoping review aims to explore barriers and enablers to providing EBC for patients with laparotomy wounds reported by acute care nurses.

Study objectives

The objectives of the proposed review are to systematically search and synthesise available data on acute care nurses' reports of barriers and enablers to providing EBC for patients with laparotomy wounds. In particular, we will focus on the reported barriers and enablers related to wound assessment, wound products used, dressing application, infection control techniques, documentation, holistic care and escalation of care.

Protocol development

The scoping review will be completed utilising the Preferred Reporting Items for Systematic review and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist. The methodology framework developed by Arksey and O'Malley¹, revised by Levac et al² and the Joanna Briggs Institute (JBI)³, will frame the protocol with six stages.

Stage 1: Identifying the research question

The study will aim to identify themes to examine EBC among acute care nurses managing laparotomy wounds. The following research question was established based on the current evidence surrounding nursing wound care.

Research question

- What are barriers and enablers to providing evidence-based care (EBC) for patients with laparotomy wounds reported by acute care nurses?

The proposed scoping review aims to identify the information gap from the findings of the proposed research question.

Stage 2: Identifying relevant studies

Systematic and scoping reviews and published protocols were searched in the Campbell Collaboration, Cochrane collaboration and the International Prospective Register of Systematic Reviews (PROSPERO) registries. The search identified no similar review published.

The research strategy was developed with the guidance of the research team and a librarian. The academic databases Ovid Medline, CINAHL and Embase will be searched to select appropriate research journals. The search approach and terms were drafted with the liaison librarians' assistance and subsequently modified by the research team. Appendix A includes an example of the last search performed on Ovid Medline on 27 September 2022. Google Scholar, PubMed and Connected Papers will be utilised to scan for relevant grey literature articles.

The preliminary search on Ovid Medline utilised keywords such as 'wound care', 'nurse', 'experience' and 'evidence-based practice' with truncations, synonyms and the use of MeSH terms to broaden the search results on the area of interest. Additional limits were chosen to restrict results to journal articles published within 2012–current, in English, and in human subjects to identify relevant and current evidence-based research were shown. Table 1 summarises the Ovid Medline search.

The database results will be manually reviewed for journal articles based on the research inquiry and inclusion criteria. The search will be supplemented with manually searching key journals and hand-searching reference lists of the 'gold

Table 1. Ovid Medline search strategy

MeSH terms		Synonyms and truncations
Laparotomy/exp abdominal injuries	OR	laparotom*or abdom* wound* or abdom* injur* or intra-abdom* or celiotom*or wound care or wound heal*or coeliotom*or surgical incision* or surgical wound*
	AND	
Nurses/	OR	nurs* or acute care nurs* or surgical nurs*or acute care or surgical department or surgical unit* or surgical ward*
	AND	
None utilised: keywords only	OR	experience* or view* or attitude* or perception*or belie*or perspective* or understand*
	AND	
Evidence-based nursing/	OR	EBP or evidence-based practice or evidence-based care or EBC or EBNP or evidence-based nursing practice or clinical guideline* or polic* procedure* or practice* or knowledge or competency or wound* management or best practice guideline* or wound assessment
Additional limit: English language, humans, year published 2012–current		

Note. The code *.ti,ab.* was added to all synonyms and truncation searches. The Ovid Medline search identified 186 results. The 'mid-line incision' and 'open abdom*' search terms results (combined 28 results) were manually reviewed, and removed due to irrelevant search results. The 'evidence based nursing practice', 'evidence based practice' and 'evidence based care' search terms were removed due to duplication of results with a synonym. The 'humans' limit was included due to veterinary articles populating results, and no articles identified in results pertaining to laparotomy wounds before including 'humans' limit.

set' (key articles that can identify search terms and test the final search strategy). Co-citation and bibliographic coupling shall be identified through Connected Papers to highlight relevant articles to the inclusion criteria after a manual review.

Stage 3: Study selection

The main components to guide the research inquiry and develop the research questions were formulated using the population, interest and context (PiCo) method.

- Population: acute care nursing staff.
- Interest: studies exploring experiences, attitudes, views, perceptions, beliefs, perspectives and understanding of EBC in laparotomy wounds.
- Context: acute wards, departments and units.

Study types

Quantitative, qualitative and mixed-methods research study designs. Quantitative studies include non-experimental studies such as observation, retrospective chart audits and cross-sectional surveys. Qualitative studies included grounded theory, phenomenology, qualitative descriptive, case studies, observation, focus groups, individual interviews, and descriptive open-ended surveys.

Inclusion: EBC, evidence-based practice, experiences in abdominal surgical wound care, acute ward nurses (enrolled, endorsed and registered), and laparotomy wounds.

Exclusion: Abstract-only articles, articles published before 2012, in a non-English language, surgical wounds not located on the abdomen, studies focusing on student nurses, critical care nurses, rehabilitation nurses, post anaesthetic care unit (PACU)/recovery nurses, theatre nurses and community nurses.

The PRISMA 2020 flow diagram for new systematic reviews, which includes searches of databases, registers and other sources, will be used to present the retrieved studies, reviewed articles, and excluded and included articles⁴⁵. Appendix B displays an example of the flow diagram that will be populated with the search findings.

Stage 4: Charting the data

Two independent reviewers will screen all articles identified in the data searches; if a disagreement occurs, a third reviewer will be asked for their opinion. The EndNote 20.5 program will be used to import articles, results and reference management. Duplicate articles will be identified and removed in EndNote.

The results extraction will be populated Covidence®. We will conduct staged screening with two independent reviewers by reviewing the title and abstract of extracted results. Eligible results will have the full text assessed utilising the inclusion and exclusion criteria. The extracted results will follow the guide from the JBI Reviewers Manual 2015, Methodology for JBI Scoping Reviews⁴⁶. Below are the key

information points that will be documented from the search results when charting the data.

- Author(s)
- Year of publication
- Country of origin
- Aims/purpose
- Study population and sample size (if appropriate)
- Methodology/methods
- Outcome measures/results
- Funding sources
- Key findings that relate to the scoping review questions

A Theoretical Domains Framework (TDF) will be applied in addition to the key points stated to ensure data extraction focuses on EBC barriers and enablers of acute care nurse⁴. The study introduced the TDF to understand nurse behaviours and create tailored intervention strategies to comprehensively and systematically identify barriers and enablers in EBC⁴⁷. The TDF consists of 14 domains encompassing individual, environmental and resources, and social factors^{4,47}. The TDF can identify wide contributing factors and influences of nurses' behaviour in the acute care context, discovering new enablers, barriers and experiences in EBC^{47,48}; Table 2 lists barriers and enablers examples for potential behaviours. The TDF is an ideal method to assist the formulation of successful change in EBC with nurses through identifying components, linking characterised behaviours, and developing effective interventions and policies to change those determinants⁴⁹.

Stage 5: Collating, summarising and reporting the results

Articles yielded in the search findings will be assessed and analysed for reliability and credibility. The Critical Appraisal Skills Programmes (CASP) checklist will be utilised for quantitative articles to ascertain their suitability. Each research type will be aligned with the appropriate CASP tool for appraisal and evaluation which will judge the selection of relevant articles for the review⁵⁰. The Standards for Reporting Qualitative Research (SRQR) and the Consolidated Criteria for Reporting Qualitative Research (COREQ) will be applied to evaluate qualitative journals. The SRQR is a framework formulated to be applied to all forms of qualitative studies to analyse the reporting of key elements⁵¹. The SRQR does not review comprehensively all methodological aspects of studies; consequently, it cannot be used to ascertain quality and rigor of research methods and findings⁵¹. The COREQ, however, specialising in critiquing interviews and focus group studies, includes assessing the method and rigor of research findings⁵². The Mixed Methods Appraisal Tool (MMAT) will be utilised to appraise mixed method articles⁵³.

Data charting will be conducted on the selected articles and displayed in formats appropriate for the type of research created to show the distribution of the studies. Qualitative articles that reflect trustworthiness and credible research will be analysed and matched with the TDF. Each reported enabler and barrier will be aligned with a relevant TDF

Table 2. Examples of potential barriers and enablers

Domain	Construct	Barrier	Enabler
Knowledge	Procedural knowledge	Limited knowledge of theoretical aspects of dressing selection	Knowledge of theoretical aspects of dressing selection
	Awareness of wound hospital protocols	Limited knowledge of wound policies and procedures	Knowledge of wound policies and procedures
Skills	Wound assessment	Limited skill in wound assessment	Proficient skill in wound assessment
	Wound dressing application	Limited skill in dressing application	Competent dressing application
Professional role and identity	Leadership	Unsupportive leadership and management	Supportive leadership and management
Beliefs about capability	Perceived competence	Lack of practice and education on laparotomy wound care	Increased exposure and education on laparotomy wounds
Optimism	Optimism of positive outcome from EBC	Lack of experience of positive outcomes from EBC	Positive outcomes from applying EBC
Beliefs about consequences	Behaviours influencing recovery outcomes	Poor understanding of potential risk factors in wound care	Knowledge of potential risk factors in wound care
Reinforcement	Encouragement	Lack of incentivisation of positive behaviours	Encouraged to conduct EBC
Intentions	EBC	Lack of EBC to guide actions	Utilise EBC to guide actions
Goals	Postgraduate qualification in wound care	Limited support from health organisation	Support to undertaken further studies
Memory, attention and decision processes	Decision making	Limited critical thinking surrounding wound care	Critical thinking applied to problem solve wound related problems
Environmental context and resources	Environmental stressors	Time constraints	Time management
	Resource accessibility	Lack of wound care products	Availability of wound care products
Social influences	Ward culture	Ward culture resistance to change	Ward culture encourages change improvements
Emotion	Stress, anxiety and burn-out	Inconsistent staffing ratios & novice skill mix	Increased workforce & senior staffing
Behavioural regulation	Self-monitoring	Inability to engage in reflective practice of behaviours	Wellbeing training, support of staff to undertake reflective practice

domain and construct⁴⁷. Incorporating all study types into the review ensures a broad overview of the best available evidence concerning the research inquiry.

Stage 6: Consultations – patient and public involvement

The scoping review is the first step in rationalising and conducting research into the barriers and enablers in the experiences of acute care nurses' EBC in laparotomy wounds. There will be no direct involvement of the patients or nurses in this scoping review. Nevertheless, the findings of this review can be utilised by healthcare professionals to inform their practice and gain insight into current experiences in laparotomy care. Furthermore, the first author is a clinical nurse educator in the surgical field and has a full membership with Wounds Australia, providing a platform for future dissemination of the findings through educational formats, such as a webinar or an educational session within a

healthcare facility. In addition, healthcare organisations, nurse associations, education providers, patients and clinicians can access the scoping review findings in the online peer-reviewed journal publication.

Discussion

Ethics and dissemination

The scoping review will collect data from databases and programs that are publicly available via open access or Monash University subscription. Ethics approval will not be required as no ethical considerations were identified for this scoping review. The findings of this scoping review will be communicated through the published peer-reviewed journal and virtual formats through professional social networks. Study findings will be presented at national and international forums.

Limitations

The scoping review protocol did not include all nurses' perspectives on laparotomy wound care. The insights of non-ward based nurses can benefit understanding EBC if barriers and enablers are consistent or differ from ward nurses.

Potential articles excluded may pertain to nurses' experiences in wound care post-laparotomy due to the publications' country of origin and age. Furthermore, articles on traumatic abdominal and pelvic injuries that required a laparotomy procedure may have been omitted from the search findings due to potential terminology surrounding traumatic injuries.

Conclusions

The protocol provides a plan for a scoping review of barriers and enablers to providing EBC for patients with laparotomy wounds reported by acute care nurses. Based on the study findings, relevant conclusions will be developed to ascertain further research on acute care nurses' experiences in providing EBC for patients with laparotomy wounds.

Author contribution

SHL and VT conceptualised the main ideas for this scoping review. SHL worked with AM and VT to develop the search strategy. All authors contributed to the framework for this protocol. SHL produced the drafts with support from AM and VT. AM and VT provided feedback, and reviewed and approved the final manuscript.

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Conflict of interest

The authors declare no conflicts of interest.

Ethics statement

An ethics statement is not applicable.

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Appendix A. Ovid Medline search strategy

Laparotomy/	20030	attitude*.ti,ab.	177018
laparotom*.ti,ab.	53139	perception*.ti,ab.	303637
exp Abdominal Injuries/	21247	belie*.ti,ab.	336281
abdom* wound*.ti,ab.	1578	perspective*.ti,ab.	407862
abdom* injur*.ti,ab.	3941	understand*.ti,ab.	1447800
intra-abdom*.ti,ab.	24331	behavio*.ti,ab.	1436169
celiotom*.ti,ab.	1247	23 or 24 or 25 or 26 or 27 or 28 or 29 or 30	4907784
wound care.ti,ab.	8681	Evidence-Based Nursing/	4035
wound heal*.ti,ab.	79980	EBP.ti,ab.	9135
coeliotom*.ti,ab.	137	evidence-based practice.ti,ab.	11435
surgical wound*.ti,ab.	6769	evidence-based care.ti,ab.	2621
surgical incision.ti,ab.	2577	EBC.ti,ab.	2289
1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10		EBNP.ti,ab.	16
or 11 or 12	198377	evidence-based nursing practice.ti,ab.	253
Nurses/	44142	clinical guideline*.ti,ab.	16331
nurs*.ti,ab.	502668	polic* procedure*.ti,ab.	491
acute care nurs*.ti,ab.	622	practice*.ti,ab.	1032457
surgical nurs*.ti,ab.	1186	knowledge.ti,ab.	849877
acute care.ti,ab.	25529	competency.ti,ab.	25126
surgical department.ti,ab.	2416	wound* management.ti,ab.	3554
surgical unit*.ti,ab.	4160	best practice guideline*.ti,ab.	2186
surgical ward*.ti,ab.	3640	wound assessment.ti,ab.	607
14 or 15 or 16 or 17 or 18 or 19 or 20 or 21	541371	32 or 33 or 34 or 35 or 36 or 37 or 38 or 39	
experienc*.ti,ab.	1325302	or 40 or 41 or 42 or 43 or 44 or 45 or 46	1809400
view*.ti,ab.	530589	13 and 22 and 31 and 47	398
		limit 49 to (English language and humans	
		and yr="2012-current")	186

Appendix B. PRISMA 2020 flow diagram for new systematic reviews which included searches of databases, registers and other sources

