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BMJ Open

Hospital-based patient navigation programs for injury-related trauma patients and their caregivers: A scoping review protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2021-055750
Article Type:	Protocol
Date Submitted by the Author:	21-Jul-2021
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Keywords:	TRAUMA MANAGEMENT, HEALTH SERVICES ADMINISTRATION & MANAGEMENT, Organisation of health services < HEALTH SERVICES ADMINISTRATION & MANAGEMENT

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Hospital-based patient navigation programs for injury-related trauma patients and their caregivers: A scoping review protocol

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Total manuscript word count: 2,193

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ABSTRACT

Introduction: Injury-related trauma patients tend to have complex care needs and often require support from many different care providers. These patients typically experience gaps in care while in the hospital and during transitions in care. Providing access to integrated care can improve outcomes for these patients. Patient navigation is one approach to improving the integration of care and proactively supporting patients and their caregivers as they navigate the healthcare system. The objective of this scoping review is to map the literature on the characteristics and impact of hospital-based patient navigation programs that support injury-related trauma patients and their caregivers.

Methods and analysis: This review will be conducted in accordance with Joanna Briggs Institute (JBI) methodology for scoping reviews. The review will include primary research studies, unpublished studies, and evaluation reports related to patient navigation programs for injury-related trauma in a hospital setting. The databases to be searched will include CINAHL (EBSCO), EMBASE (Elsevier), ProQuest Nursing & Allied Health, PsycINFO (EBSCO), and MEDLINE (Ovid). Two independent reviewers will screen articles for relevance against the inclusion criteria. Results will be presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scoping Reviews (PRISMA-ScR) flow diagram. The extracted data will be presented both tabularly and narratively.

Ethics and dissemination: Ethics approval is not required, as the scoping review will synthesise information from publicly available material. To disseminate the findings of this review, the authors will submit the results for publication in a medical or health sciences journal, present at relevant conferences, and use other knowledge translation strategies to reach diverse stakeholders (e.g., host webinar, share infographics).

Keywords: Characteristics; Impact; Injury; Patient navigation; Scoping review; Trauma

Abstract word count: 265

STRENGTHS AND LIMITATIONS OF THIS STUDY:

- This scoping review will map the literature on the characteristics and impact of hospital-based patient navigation programs that support injury-related trauma patients and their caregivers.
- This scoping review will conform to the rigorous methodology manual of the Joanna Briggs Institute (JBI).
- The search strategy was adapted for implementation across the 5 databases, CINAHL (EBSCO), EMBASE (Elsevier), ProQuest Nursing & Allied Health, PsycINFO (EBSCO), and MEDLINE (Ovid), as well as a grey literature search.
- In compliance with JBI methodology, quality assessment of the articles will not be performed.
- Only articles in English and French in will be considered for inclusion.

BACKGROUND

Injury-related trauma refers to physical injuries that occur suddenly and with enough severity to require immediate medical attention.[1] There are many types of injury-related trauma, such as blunt force, penetrative force, and burning. This can result in wounds, broken bones, and internal organ damage, among other injuries. Although injury-related trauma affects people of all ages, those between the ages of 45 and 64 are experiencing trauma at an increasing rate.[2]

Injury-related trauma patients often have complex care needs and frequently require extensive support from multiple care providers during their hospital stay and recovery.[3] They typically experience gaps in care while in the hospital and when they are transferred elsewhere, whether to their home, to a rehabilitation facility, or to another hospital.[4, 5, 6] Other issues involving this population that have been identified in the literature include disrupted communication and information flow between services;[7] a lack of support for parents during pediatric trauma cases;[8] patients not being completely informed about their treatment options;[4] and patients being excluded from the decision making around their own course of treatment, which often includes several phases.[4] Moreover, trauma patients who sustain multisystem injuries are frequently not transferred between services in a timely manner.[9]

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Individuals and their caregivers with access to integrated care experience improved outcomes.[10] Integrated care involves a comprehensive delivery of services, which are designed to meet both the specific needs of the individual and the general needs of the population. Evidence shows that the benefits of integrated care include reduced hospital admissions, reduced readmissions, improved treatment guideline adherence, and improved quality of life.[11] Patient navigation is a relatively new approach to integrated care that supports patients and families to overcome gaps and barriers to care. It helps them access the necessary resources and services to support their needs whether in hospital, during transitions in care, or managing their condition at home.

While its origins are in cancer care,[12] patient navigation has been utilized to support the care of a variety of conditions, such as diabetes,[13] kidney disease,[14] mental health,[15] and HIV.[16] It has also been adapted to a range of settings, including community settings and primary care clinics.[17, 18] Patient navigation programs improve the integration of care and proactively support patients and their caregivers as they navigate the healthcare system.[17] For instance, research shows that patient navigation can reduce stress and improve overall experience with the healthcare system;[19] increase engagement with mental health services;[20] improve clinical care;[21] and reduce hospital readmissions.[21] Patient navigation can also benefit injury-related trauma patients, their families, and the care team by offering an integrative, collaborative approach to care and providing consistent and reliable support.

Recently, there has been an increased interest in patient navigation programs across various health-related contexts and settings.[22] As such, it will be useful to explore patient navigation programs for trauma patients and their caregivers in the hospital setting. This scoping review will map literature on the characteristics and impact of hospital-based patient navigation programs in this area. Given the current state of the literature in this area, a scoping review was chosen to better understand the range of hospital-based navigation programs for trauma patients and their caregivers, and to explore patient and health system outcomes reported in the literature. Scoping reviews are used to summarize the available knowledge on a particular topic,[23] and provide a structured and rigorous methodology for examining broad and exploratory research questions.[24] A preliminary search of PubMed,

PROSPERO, and *JBIR Database of Systematic Reviews and Implementation Reports* confirmed that there are no current or ongoing reviews on this topic.

METHODS AND ANALYSIS

The proposed scoping review will be conducted in accordance with the Joanna Briggs Institute (JBI) methodology for scoping reviews.[25] JBI recommends the following steps: identifying the research question; identifying relevant studies; study selection; charting the data; and collating, summarizing, and reporting the results.

Eligibility criteria

Participants

This scoping review will focus on hospital based-patient navigation programs for injury-related trauma patients and/or their caregivers. Injury-related trauma patients include individuals who experience physical injuries that occur suddenly and with enough severity to require immediate medical attention.[1] The review is not specific to any injury-related trauma, condition, sex, age, ethnicity, or other demographic variable. Articles that address a variety of patient navigation programs, including injury-related programs, will be included if the characteristics of the injury-related trauma navigation programs are reported separately; if the characteristics are not reported separately, the articles will be excluded.

A caregiver refers to an unpaid individual (usually a spouse, family member, or friend) who provides most of the trauma patient's informal care or support. Excluded from this review are articles that address non-injury-related trauma patients (e.g., emotional trauma).

Concept

The main concept is characteristics of patient navigation programs. Included articles must contain a discussion on the characteristics of the patient navigation program. Patient navigation will be defined as a partnership between a patient, caregiver, or member(s) of the care team and a patient navigator (including professional, lay, or peer navigators), who facilitates timely access to health and/or community services and resources and fosters self-management and autonomy through education and emotional support.[18, 26] We will define programs as interventions or services intended to improve the navigation of services and resources for trauma patients and their caregivers. To ensure consistency, programs will be included if they align with this definition. For example, studies where the navigator's main

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role is to deliver clinical care (e.g., triage) will be excluded. Patient navigation programs that include various titles for the role of the patient navigator will be considered, such as nurse navigator, care navigator, peer navigator, and lay navigator.

Impact, the secondary concept of this review, is the extent to which an intervention was effective in terms of its intended and unintended health and social outcomes.[27] The American Centers for Disease Control and Prevention defines the evaluation of a program’s impact as the assessment of a program’s effectiveness to achieve its goals (p.1).[28] This review will consider articles that employ various evaluation methods, such as case control studies; analysis of chart data or administrative data; and qualitative studies. It will include negative and positive impacts. Note, however, that articles do not need to report on impact to be included. Articles can be included if they describe the main concept, which is the characteristics of injury-related trauma navigation programs.

Context

This review will consider articles where the patient navigation program is delivered in a hospital setting. While we will include hospital-based patient navigation programs that offer services to support injury-related trauma patients and/or their caregivers in the community (e.g., with the transition from hospital to home), programs delivered solely within the community will be excluded. There will be no geographical limit to this study as the intent is to explore the characteristics and impact of patient navigation within hospital settings across all locations.

Stage 1: Identifying the research questions

The research questions for this scoping review are:

1. What are the characteristics reported in the literature of hospital-based patient navigation programs to support injury-related trauma patients and their caregivers?
2. What is the existing evidence in the literature on the impact of hospital-based patient navigation programs for injury-related trauma patients and their caregivers?

Stage 2: Identifying relevant studies

This scoping review will consider all qualitative, quantitative, and mixed-method studies for inclusion, except for systematic, scoping, and literature reviews. The reference lists of relevant reviews, as well as articles included in the review, will be hand-searched for

additional articles. Other literature, such as unpublished studies and/or evaluation reports, will also be considered for inclusion. Only full texts of articles will be considered for review. The review will be limited to literature published in or after 1990 because that is the year patient navigation was conceptualized.[29] Due to the linguistic capabilities of those conducting this review, only articles in English or French will be considered for inclusion.

A JBI-trained librarian (RW) conducted an initial search of the CINAHL database to identify articles on this topic. The librarian formulated a search strategy drawing from the words contained in the titles, abstracts, and subject descriptors of these articles. Additionally, the search strategy drew from a number of knowledge syntheses on related topics, as well as the search strategy reported in Doucet et al. (in press).[30] Once the search terms were identified, they were tested in CINAHL in a variety of combinations and using a variety of search fields until it was determined that the search results both completely reflected the scope of the research available on this topic and avoided unnecessary noise from irrelevant results. No limits were applied to the search.

Next, the search was adapted and implemented across five databases, which are (1) CINAHL with Full-Text (EBSCOhost); (2) Embase (Elsevier); (3) ProQuest Nursing & Allied Health (ProQuest); (4) PsycINFO (EBSCOhost); and (5) MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations, Daily and Versions(R) 1946 to Present (Ovid). Backwards and forwards citation searches will also be performed to identify additional studies. We will do so by searching the reference lists of included studies and using Scopus (Elsevier) to identify and screen studies citing them. An example of the search strategy applied to CINAHL is noted in Table 1.

Table 1: Search strategy: Syntax used in the CINAHL search strategy

S1	TI (trauma* N1 (centre OR setting OR injur* OR system OR patient*) OR AB (trauma* N1 (centre OR setting OR injur* OR system OR patient*))
S2	(MH "Trauma+")
S3	(MH "Emergency Patients")

S4	(MH “Wounds and Injuries+”)
S5	S1 OR S2 OR S3 OR S4
S6	TI (Navigat* N1 (patient OR community OR nurse OR health OR system)) OR AB (Navigat* N1 (patient OR community OR nurse OR health OR system))
S7	(MH "Patient Navigation")
S8	S6 OR S7
S9	S5 AND S8 <i>237 RESULTS</i>

The unpublished literature search will utilize ProQuest Dissertations and Theses; Google and Google Scholar; and targeted searching of relevant websites, such as websites for known patient navigation or trauma-related organizations and programs. We will use the following keywords in our search: patient navigation, injury related trauma patients, and hospital-based care. Sources will be screened in Google and Google Scholar according to titles until the point of saturation (i.e., after two pages are passed without opening a link). We will include a full list of the grey literature databases and corresponding keyword searches in the final report.

Stage 3: Study selection

Articles identified by the keyword searches and hand searches of reference lists will undergo a careful selection process. All potentially relevant articles will be collated and uploaded to Zotero 5.0 software and duplicates will be removed (Zotero, Fairfax, United States). The remaining records will then be uploaded to Covidence and any missed duplicates will be removed (Covidence, Melbourne, Australia). Next, two independent reviewers will screen the titles and abstracts against the inclusion criteria (see Table 2). Reviewers will meet to discuss any discrepancies and a third independent reviewer will be available to resolve any outstanding conflicts.

Table 2: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Articles that describe the characteristics of an injury-related trauma navigation program in the hospital setting	Articles that do not describe the characteristic of an injury-related trauma program and/or are not in the hospital setting (e.g., solely in the community setting)
Articles in which patient navigation is the primary aim of the program	Articles in which patient navigation is not the primary aim of the program
Articles published in English and/or French	Articles published in any other language
Articles published in or after the year 1990	Articles published before the year 1990
Full text available	Conference papers, articles that are not available in full text
Primary research studies (unpublished studies and evaluation reports will be considered)	Secondary research studies (e.g., any type of review)

Once titles and abstracts have been screened, two independent reviewers will screen the full text of the relevant articles against the inclusion criteria. Any conflicts will be resolved either through discussion or by a third independent reviewer. The reviewers will record the reasons for excluding the full texts of articles that do not meet the inclusion criteria.

Stage 4: Charting the data

Two reviewers will independently extract data from the articles using a data extraction tool, which was developed by the research team using Microsoft Excel. Any disagreements between the reviewers will be resolved through discussion or consultation with a third reviewer. The data extraction tool was piloted by the research team to ensure comprehensiveness. Extracted data will include specific information about the population, concept, context, and key findings related to the scoping review's objective (see Table 3). We will modify the data extraction tool if necessary during the course of the review. Modifications will be detailed in the scoping review. Where required, authors of papers will be contacted to request missing or additional data.

Table 3: Data extraction instrument

Author				
Publication Year				
Type of source/study design where applicable				
Program description				
Geographic location				
Type of Hospital Setting				
Population/condition type				
Impacts				
Program barriers				
Program facilitators				

Stage 5: Collating, summarizing and reporting the results

The results of the search will be reported in full in the final scoping review and presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scoping Reviews (PRISMA-ScR) flow diagram.[23] The extracted data will be presented in tabular format in a way that reflects the scoping review’s objective. It will include data such as author(s); publication year; type of source (e.g., published qualitative study, unpublished program evaluation); program description, including geographic location, setting, delivery format, population, type of injury, team composition, navigator title; and impact (where applicable), barriers (where applicable), and facilitators (where applicable). We will also present the

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5 results in narrative format, describing how the results relate to the objective of the scoping
6 review.
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8 **ETHICS AND DISSEMINATION**

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11 Ethics approval is not required to conduct this study because the scoping review will
12 synthesise information from publicly available material. To disseminate the findings of this
13 review, the authors will submit the results for publication in a medical or health sciences
14 journal, present at relevant conferences, and use other knowledge translation strategies to
15 reach relevant stakeholders (e.g., host webinars, share infographics).
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18 **Competing interests statement**

19
20 The authors declare no competing interests.
21

22 **Funding**

23
24 This work was supported by the New Brunswick Innovation Foundation, grant number [POF-
25 0000000021].
26

27 **Authors' contributions**

28
29 Shelley Doucet is co-leading the research study.
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32 Alison Luke is co-leading the research study.
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35 Grailing Anthonisen co-wrote and edited the protocol.
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38 Richelle Witherspoon designed and ran the search strategy.
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41 A. Luke MacNeill co-wrote and edited the protocol.
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44 Lillian MacNeill supported the writing process and edited the protocol.
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47 Katherine J. Kelly supported the writing process and edited the protocol.
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50 Taylor Fearon supported the writing process of the protocol.
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PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol*

Section and topic	Item No	Checklist item
ADMINISTRATIVE INFORMATION		
Title:		
Identification	1a	Identify the report as a protocol of a systematic review
Update	1b	If the protocol is for an update of a previous systematic review, identify as such
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number
Authors:		
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments
Support:		
Sources	5a	Indicate sources of financial or other support for the review
Sponsor	5b	Provide name for the review funder and/or sponsor
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol
INTRODUCTION		
Rationale	6	Describe the rationale for the review in the context of what is already known
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)
METHODS		
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated
Study records:		
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review

Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms done independently, in duplicate), any processes for obtaining and confirming data from investigators
Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I^2 , Kendall's τ)
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)

*** It is strongly recommended that this checklist be read in conjunction with the PRISMA-P Explanation and Elaboration (cite when available) for important clarification on the items. Amendments to a review protocol should be tracked and dated. The copyright for PRISMA-P (including checklist) is held by the PRISMA-P Group and is distributed under a Creative Commons Attribution Licence 4.0.**

From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015 Jan 2;349(jan02 1):g7647.

BMJ Open

Hospital-based patient navigation programs for patients who experience injury-related trauma and their caregivers: A scoping review protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2021-055750.R1
Article Type:	Protocol
Date Submitted by the Author:	03-Dec-2021
Complete List of Authors:	<p>Doucet, Shelley; University of New Brunswick Saint John Faculty of Science Applied Science and Engineering, Department of Nursing and Health Sciences; University of New Brunswick (UNB) Saint John Collaboration for Evidence-Informed Healthcare A JBI Centre of Excellence</p> <p>Luke, Alison; University of New Brunswick Saint John Faculty of Science Applied Science and Engineering, Faculty of Nursing and Health Sciences</p> <p>Anthonisen, Grailing; University of New Brunswick Saint John Faculty of Science Applied Science and Engineering, Department of Nursing and Health Sciences</p> <p>Witherspoon, Richelle; University of New Brunswick (UNB) Saint John Collaboration for Evidence-Informed Healthcare A JBI Centre of Excellence; University of New Brunswick Saint John, University of New Brunswick Libraries</p> <p>MacNeill, A. ; University of New Brunswick Saint John Faculty of Science Applied Science and Engineering, Department of Nursing and Health Sciences; University of New Brunswick (UNB) Saint John Collaboration for Evidence-Informed Healthcare A JBI Centre of Excellence</p> <p>MacNeill, Lillian; University of New Brunswick Saint John Faculty of Science Applied Science and Engineering, Department of Nursing and Health Sciences; University of New Brunswick (UNB) Saint John Collaboration for Evidence-Informed Healthcare A JBI Centre of Excellence</p> <p>Kelly, Katherine J.; University of New Brunswick Saint John Faculty of Science Applied Science and Engineering, Department of Nursing and Health Sciences</p> <p>Fearon, Taylor; University of New Brunswick Saint John Faculty of Science Applied Science and Engineering, Department of Nursing and Health Sciences</p>
Primary Subject Heading:	Health services research
Secondary Subject Heading:	Health services research
Keywords:	TRAUMA MANAGEMENT, HEALTH SERVICES ADMINISTRATION & MANAGEMENT, Organisation of health services < HEALTH SERVICES ADMINISTRATION & MANAGEMENT

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Manuscripts

Hospital-based patient navigation programs for patients who experience injury-related trauma and their caregivers: A scoping review protocol

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Total manuscript word count: 2,678

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ABSTRACT

Introduction: Patients who experience injury-related trauma tend to have complex care needs and often require support from many different care providers. These patients typically experience gaps in care while in the hospital and during transitions in care. Providing access to integrated care can improve outcomes for these patients. Patient navigation is one approach to improving the integration of care and proactively supporting patients and their caregivers as they navigate the healthcare system. The objective of this scoping review is to map the literature on the characteristics and impact of hospital-based patient navigation programs that support patients who experience injury-related trauma and their caregivers.

Methods and analysis: This review will be conducted in accordance with Joanna Briggs Institute (JBI) methodology for scoping reviews. The review will include primary research studies, unpublished studies, and evaluation reports related to patient navigation programs for injury-related trauma in hospital settings. The databases to be searched will include CINAHL (EBSCO), EMBASE (Elsevier), ProQuest Nursing & Allied Health, PsycINFO (EBSCO), and MEDLINE (Ovid). Two independent reviewers will screen articles for relevance against the inclusion criteria. Results will be presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scoping Reviews (PRISMA-ScR) flow diagram and follow the PRISMA-ScR checklist. The extracted data will be presented both tabularly and narratively.

Ethics and dissemination: Ethics approval is not required, as the scoping review will synthesise information from publicly available material. To disseminate the findings of this review, the authors will submit the results for publication in a medical or health sciences journal, present at relevant conferences, and use other knowledge translation strategies to reach diverse stakeholders (e.g., host webinar, share infographics).

Keywords: Characteristics; Impact; Injury; Patient navigation; Scoping review; Trauma

Abstract word count: 271

STRENGTHS AND LIMITATIONS OF THIS STUDY:

- This scoping review will conform to the rigorous methodology manual of the Joanna Briggs Institute (JBI).
- The search strategy was adapted for implementation across the 5 databases, CINAHL (EBSCO), EMBASE (Elsevier), ProQuest Nursing & Allied Health, PsycINFO (EBSCO), and MEDLINE (Ovid), as well as a grey literature search.
- In compliance with JBI methodology, quality assessment of the articles will not be performed.
- Only articles in English and French in will be considered for inclusion.

BACKGROUND

Injury-related trauma refers to physical injuries that occur suddenly and with enough severity to require immediate medical attention.[1] There are many mechanisms of injury-related trauma, such as blunt force, penetrative force, and burning. This can result in wounds, broken bones, and internal organ damage, among other injuries. Three of the top five most common causes of death among individuals between the ages of 5 and 29, are from injury-related trauma.[2]

Patients who experience injury-related trauma often have complex care needs and frequently require extensive support from multiple care providers during their hospital stay and recovery.[3] They typically experience gaps in care while in the hospital and when they are transferred elsewhere, whether to their home, to a rehabilitation facility, or to another hospital.[4, 5, 6] Other issues involving this population that have been identified in the literature include disrupted communication and information flow between services;[7] a lack of support for parents during pediatric trauma cases;[8] patients not being completely informed about their treatment options;[4] and patients being excluded from the decision making around their own course of treatment, which often include several phases.[4] Moreover, patients who experience physical trauma and sustain multisystem injuries are frequently not transferred between services in a timely manner.[9]

Individuals and their caregivers with access to integrated care experience improved outcomes.[10] Integrated care involves a comprehensive delivery of services, which are

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designed to meet both the specific needs of the individual and the general needs of the population. Evidence shows that the benefits of integrated care include reduced hospital admissions, reduced readmissions, improved treatment guideline adherence, and improved quality of life.[11] Patient navigation is a relatively new approach to integrated care that supports patients and families to overcome gaps and barriers to care by providing patient centred care designed to meet the individual needs of patients, their families, and communities.[12] It helps patients to access the necessary resources and services to support their needs whether in hospital, during transitions in care, or managing their condition at home. Patient navigation supports integrated care at multiple levels through a variety of means. This includes creating and coordinating a patient’s care plan across multiple providers at a micro-level, as well as supporting capacity building with care providers at the meso-level.[12] At the macro-level, patient navigation can integrate care by identifying the needs and adapting services accordingly for an entire patient population.[12]

While its origins are in cancer care,[13] patient navigation has been utilized to support the care of a variety of conditions, such as diabetes,[14] kidney disease,[15] mental health,[16] and HIV.[17] It has also been adapted to a range of settings, including community settings and primary care clinics.[12, 18] Patient navigation programs improve the integration of care and proactively support patients and their caregivers as they navigate the healthcare system.[18] For instance, research shows that patient navigation can reduce stress and improve overall experience with the healthcare system;[19] increase engagement with mental health services;[20] improve clinical care;[21] and reduce hospital readmissions.[21] Patient navigation can also benefit patients who experience injury-related trauma, their families, and the care team by offering an integrative, collaborative approach to care and providing consistent and reliable support. As this population faces increased risk of unplanned readmissions, the support provided through navigation programs can help reduce these readmissions.[6, 22] Patients who experience injury-related trauma frequently require care from multiple types of health care providers,[3] and patient navigation can facilitate coordination between those care providers. It can also reduce barriers for patients while they access multiple care providers across the care system, as well as the gaps in care that frequently occur during transitions by coordinating and integrating care and advocating to fill those gaps at a systems level. [4-6]

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5 124 Recently, there has been an increased interest in patient navigation programs across various
6 125 health-related contexts and settings.[23] As such, it will be useful to explore patient
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8 126 navigation programs for patients who experience injury-related trauma and their caregivers in
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10 127 the hospital setting. This scoping review will map literature on the characteristics and impact
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12 128 of hospital-based patient navigation programs in this area. Given the current state of the
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14 129 literature in this area, a scoping review was chosen to better understand the range of hospital-
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16 130 based navigation programs for patients who experience injury-related trauma and their
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18 131 caregivers, and to explore patient and health system outcomes reported in the literature.
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20 132 Scoping reviews are used to summarize the available knowledge on a particular topic,[24]
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22 133 and provide a structured and rigorous methodology for examining broad and exploratory
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24 134 research questions.[25] A preliminary search of PubMed, PROSPERO, and *JBIR Database of*
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26 135 *Systematic Reviews and Implementation Reports* confirmed that there are no current or
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28 136 ongoing reviews on this topic.

137 **METHODS AND ANALYSIS**

138 The proposed scoping review will be conducted in accordance with the Joanna Briggs
139 Institute (JBI) methodology for scoping reviews.[26] The scoping review will also follow the
140 Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for Scoping
141 Reviews (PRISMA-ScR) checklist,[24] which will ensure the review is transparently reported
142 and useful to its users.[27] Our study began in June 2021 and the planned end date is June
143 2022.

144 **Eligibility criteria**

145 *Participants*

146 This scoping review will focus on hospital based-patient navigation programs for patients
147 who experience injury-related trauma and/or their caregivers. Patients who experience injury-
148 related trauma include individuals who experience physical injuries that occur suddenly and
149 with enough severity to require immediate medical attention.[1] The review is not specific to
150 any injury-related trauma, condition, sex, age, ethnicity, or other demographic variable.
151 While the treatments for and the needs of patients who experience injury-related trauma vary
152 according to the nature of their injuries, in accordance with the objective of a scoping

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review,[24] this review seeks to identify what literature exists on patient navigation programs across the spectrum of traumatic physical injury. Because we anticipate there to be a small number of articles, we do not want to limit the scoping review to any one specific type of injury-related traumatic injury. Articles that address a variety of patient navigation programs, including injury-related programs, will be included if the characteristics of the injury-related trauma navigation programs are reported separately; if the characteristics are not reported separately, the articles will be excluded.

A caregiver refers to an unpaid individual (usually a spouse, family member, or friend) who provides most of the informal care or support of patients who experience injury-related trauma. Excluded from this review are articles that address patients who experience non-injury-related trauma (e.g., emotional trauma).

Concept

The main concept is characteristics of patient navigation programs. Included articles must contain a discussion on the characteristics of the patient navigation program. Patient navigation will be defined as a partnership between a patient, caregiver, or member(s) of the care team and a patient navigator (including professional, lay, or peer navigators), who facilitates timely access to health and/or community services and resources and fosters self-management and autonomy through education and emotional support.[18, 28] We will define programs as interventions or services intended to improve the navigation of services and resources for patients who experience physical trauma and their caregivers. To ensure consistency, programs will be included if they align with this definition. For example, studies where the navigator’s main role is to deliver clinical care (e.g., triage) will be excluded. Patient navigation programs that include various titles for the role of the patient navigator will be considered, such as nurse navigator, care navigator, peer navigator, and lay navigator. This review will exclude programs provided by case managers. While there is some overlap between the roles of patient navigators and case managers, navigators typically provide emotional and informational support, while case managers provide clinical care.[18, 29] Patient navigators help individuals navigate through existing services and can advocate for missing services, whereas case managers will fill this need by providing clinical care and acting as a care provider.[18, 29]

Impact, the secondary concept of this review, is the extent to which an intervention was effective in terms of its intended and unintended health and social outcomes.[30] The American Centers for Disease Control and Prevention defines the evaluation of a program's impact as the assessment of a program's effectiveness to achieve its goals (p.1).[31] This review will consider articles that employ various evaluation methods, such as case control studies; analysis of chart data or administrative data; and qualitative studies. It will include negative and positive impacts. Note, however, that articles do not need to report on impact to be included. Articles can be included if they describe the main concept, which is the characteristics of injury-related trauma navigation programs.

Context

This review will consider articles where the patient navigation program is delivered in a hospital setting. While we will include hospital-based patient navigation programs that offer services to support patients who experience injury-related trauma and/or their caregivers in the community (e.g., with the transition from hospital to home), programs delivered solely within the community will be excluded. Programs that support patients during their transitions must begin in hospital prior to discharge to be included. There will be no geographical limit to this study as the intent is to explore the characteristics and impact of patient navigation within hospital settings across all locations.

The 5 steps for JBI scoping reviews

JBI recommends the five following steps when conducting a scoping review: 1) identifying the research question; 2) identifying relevant studies; 3) study selection; 4) charting the data; and 5) collating, summarizing, and reporting the results.

Step 1: Identifying the research questions

The research questions for this scoping review are:

1. What are the characteristics reported in the literature of hospital-based patient navigation programs to support patients who experience injury-related trauma and their caregivers?
2. What is the existing evidence in the literature on the impact of hospital-based patient navigation programs for patients who experience injury-related trauma and their caregivers?

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Step2: Identifying relevant studies

This scoping review will consider all qualitative, quantitative, and mixed-method studies for inclusion, except for systematic, scoping, and literature reviews. The reference lists of relevant reviews, as well as articles included in the review, will be hand-searched for additional articles. Other literature, such as unpublished studies and/or evaluation reports, will also be considered for inclusion. Only full texts of articles will be considered for review. The review will be limited to literature published in or after 1990 because that is the year patient navigation was conceptualized.[32] Due to the linguistic capabilities of those conducting this review, only articles in English or French will be considered for inclusion.

A JBI-trained librarian (RW) conducted an initial search of the CINAHL database to identify articles on this topic. The librarian formulated a search strategy drawing from the words contained in the titles, abstracts, and subject descriptors of these articles. Additionally, the search strategy drew from a number of knowledge syntheses on related topics, as well as the search strategy reported in Doucet et al. (in press).[29] Once the search terms were identified, they were tested in CINAHL in a variety of combinations and using a variety of search fields until it was determined that the search results both completely reflected the scope of the research available on this topic and avoided unnecessary noise from irrelevant results. The search strategy is designed to capture the varied terminology that describes the role of patient navigator, such as care coordinator and pivot nurse. The terms used in the search are based on a thorough assessment of the terms most common to the research area. Based on this review of the terminology, it is likely that the terms used captured a significant portion of the literature on the topic. No limits were applied to the search.

Next, the search was adapted and implemented across five databases, which are (1) CINAHL with Full-Text (EBSCOhost); (2) Embase (Elsevier); (3) ProQuest Nursing & Allied Health (ProQuest); (4) PsycINFO (EBSCOhost); and (5) MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations, Daily and Versions(R) 1946 to Present (Ovid). Backwards and forwards citation searches will also be performed to identify additional studies. We will do so by searching the reference lists of included studies and using Scopus (Elsevier) to identify and screen studies citing them. An example of the search strategy applied to MEDLINE is noted in Table 1.

241 Table 1: Search strategy: Syntax used in the MEDLINE (Ovid) search strategy, completed 6
 242 June 2021

	Search	Results
1	"navigator*".ab,ti.	3555
2	"pivot nurs* ".ab,ti.	15
3	"care coordinator* ".ab,ti.	767
4	(navigat* adj1 (patient* or communit* or famil* or nurse* or health or system or care or service* or program* or intervention* or support* or assist*)).ab,ti.	7818
5	Patient Navigation/	837
6	1 or 2 or 3 or 4 or 5	11131
7	"contusion*".ab,ti.	11518
8	"abrasion*".ab,ti.	9387
9	"dislocat*".ab,ti.	54612
10	"rupture*".ab,ti.	131376
11	"sprain*".ab,ti.	5878
12	"auto amputation* ".ab,ti.	84
13	"autoamputation*".ab,ti.	216
14	"penetrat*".ab,ti.	138985
15	"wound*".ab,ti.	213013
16	"injur*".ab,ti.	848155
17	"accident*".ab,ti.	117725
18	"fracture*".ab,ti.	269312
19	(physical adj1 trauma).ab,ti.	1094

20	(damage adj1 (organ* or physical)).ab,ti.	14406
21	(bone adj2 (broke or broken or break*)).ab,ti.	730
22	"lacerat*".ab,ti.	13255
23	"burn*".ab,ti.	105755
24	exp "Wounds and Injuries"/	933086
25	7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24	2072486
26	6 and 25	1081

The unpublished literature search will utilize ProQuest Dissertations and Theses; Google and Google Scholar; and targeted searching of relevant websites, such as websites for known patient navigation or trauma-related organizations and programs. We will use the following keywords in our search: patient navigation, injury related trauma patients, hospital-based care and inpatient. Sources will be screened in Google and Google Scholar according to titles until the point of saturation (i.e., after two pages are passed without opening a link). We will include a full list of the grey literature databases and corresponding keyword searches in the final report.

Step 3: Study selection

Articles identified by the keyword searches and hand searches of reference lists will undergo a careful selection process. All potentially relevant articles will be collated and uploaded to Zotero 5.0 software and duplicates will be removed (Zotero, Fairfax, United States). The remaining records will then be uploaded to Covidence and any missed duplicates will be removed (Covidence, Melbourne, Australia). Next, two independent reviewers will screen the titles and abstracts against the inclusion criteria (see Table 2). Reviewers will meet to discuss any discrepancies and a third independent reviewer will be available to resolve any outstanding conflicts.

Table 2: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Articles that describe the characteristics of an injury-related trauma navigation program in the hospital setting	Articles that do not describe the characteristic of an injury-related trauma program and/or are not in the hospital setting (e.g., solely in the community setting)
Articles in which patient navigation is the primary aim of the program	Articles in which patient navigation is not the primary aim of the program
Articles published in English and/or French	Articles published in any other language
Articles published in or after the year 1990	Articles published before the year 1990
Full text available	Conference papers, articles that are not available in full text
Primary research studies (unpublished studies and evaluation reports will be considered)	Secondary research studies (e.g., any type of review)

Once titles and abstracts have been screened, two independent reviewers will screen the full text of the relevant articles against the inclusion criteria. Any conflicts will be resolved either through discussion or by a third independent reviewer. The reviewers will record the reasons for excluding the full texts of articles that do not meet the inclusion criteria.

Step 4: Charting the data

Two reviewers will independently extract data from the articles using a data extraction tool, which was developed by the research team using Microsoft Excel (see Table 3). Any disagreements between the reviewers will be resolved through discussion or consultation with a third reviewer. The data extraction tool was piloted by the research team to ensure comprehensiveness. Extracted data will include specific information about the population, concept, context, and key findings related to the scoping review's objective. We will modify the data extraction tool if necessary during the course of the review. Modifications will be detailed in the scoping review. Where required, authors of papers will be contacted to request missing or additional data.

Table 3: Data extraction instrument

Author				
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Publication Year				
Type of source/study design where applicable				
Program description				
Geographic location				
Type of Hospital Setting				
Population/injury type				
Severity of injury				
Impacts of patient navigation program				
Program barriers				
Program facilitators				

Step 5: Collating, summarizing and reporting the results

The results of the search will be reported in full in the final scoping review and presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scoping Reviews (PRISMA-ScR) flow diagram.[24] The extracted data will be presented in tabular format in a way that reflects the scoping review’s objective. It will include data such as author(s); publication year; type of source (e.g., published qualitative study, unpublished program evaluation); program description, including geographic location, setting, delivery format, population, type of injury, severity of injury, team composition, navigator title; and impact (where applicable), barriers (where applicable), and facilitators (where applicable). We will also present the results in narrative format, describing how the results relate to the objective of the scoping review.

PATIENT AND PUBLIC INVOLVEMENT

No patient involvement.

ETHICS AND DISSEMINATION

Ethics approval is not required to conduct this study because the scoping review will synthesise information from publicly available material. To disseminate the findings of this review, the authors will submit the results for publication in a medical or health sciences journal, present at relevant conferences, and use other knowledge translation strategies to reach relevant stakeholders (e.g., host webinars, share infographics).

Competing interests statement

The authors declare no competing interests.

Funding

This work was supported by the New Brunswick Innovation Foundation, grant number [POF-0000000021].

Authors' contributions

Shelley Doucet is co-leading the research study.

Alison Luke is co-leading the research study.

Grailing Anthonisen co-wrote and edited the protocol.

Richelle Witherspoon designed and ran the search strategy.

A. Luke MacNeill co-wrote and edited the protocol.

Lillian MacNeill supported the writing process and edited the protocol.

Katherine J. Kelly supported the writing process and edited the protocol.

Taylor Fearon supported the writing process of the protocol.

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PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol*

Section and topic	Item No	Checklist item
ADMINISTRATIVE INFORMATION		
Title:		
Identification	1a	Identify the report as a protocol of a systematic review
Update	1b	If the protocol is for an update of a previous systematic review, identify as such
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number
Authors:		
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments
Support:		
Sources	5a	Indicate sources of financial or other support for the review
Sponsor	5b	Provide name for the review funder and/or sponsor
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol
INTRODUCTION		
Rationale	6	Describe the rationale for the review in the context of what is already known
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)
METHODS		
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated
Study records:		
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review

Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms done independently, in duplicate), any processes for obtaining and confirming data from investigators
Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I^2 , Kendall's τ)
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)

*** It is strongly recommended that this checklist be read in conjunction with the PRISMA-P Explanation and Elaboration (cite when available) for important clarification on the items. Amendments to a review protocol should be tracked and dated. The copyright for PRISMA-P (including checklist) is held by the PRISMA-P Group and is distributed under a Creative Commons Attribution Licence 4.0.**

From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015 Jan 2;349(jan02 1):g7647.

BMJ Open

Hospital-based patient navigation programs for patients who experience injury-related trauma and their caregivers: A scoping review protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2021-055750.R2
Article Type:	Protocol
Date Submitted by the Author:	04-Mar-2022
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Primary Subject Heading:	Health services research
Secondary Subject Heading:	Health services research
Keywords:	TRAUMA MANAGEMENT, HEALTH SERVICES ADMINISTRATION & MANAGEMENT, Organisation of health services < HEALTH SERVICES ADMINISTRATION & MANAGEMENT

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Hospital-based patient navigation programs for patients who experience injury-related trauma and their caregivers: A scoping review protocol

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Total manuscript word count: 2,727

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ABSTRACT

Introduction: Patients who experience injury-related trauma tend to have complex care needs and often require support from many different care providers. Many patients experience gaps in care while in the hospital and during transitions in care. Providing access to integrated care can improve outcomes for these patients. Patient navigation is one approach to improving the integration of care and proactively supporting patients and their caregivers as they navigate the healthcare system. The objective of this scoping review is to map the literature on the characteristics and impact of hospital-based patient navigation programs that support patients who experience injury-related trauma and their caregivers.

Methods and analysis: This review will be conducted in accordance with Joanna Briggs Institute (JBI) methodology for scoping reviews. The review will include primary research studies, unpublished studies, and evaluation reports related to patient navigation programs for injury-related trauma in hospital settings. The databases to be searched will include CINAHL (EBSCO), EMBASE (Elsevier), ProQuest Nursing & Allied Health, PsycINFO (EBSCO), and MEDLINE (Ovid). Two independent reviewers will screen articles for relevance against the inclusion criteria. Results will be presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scoping Reviews (PRISMA-ScR) flow diagram and follow the PRISMA-ScR checklist. The extracted data will be presented both tabularly and narratively.

Ethics and dissemination: Ethics approval is not required, as the scoping review will synthesise information from publicly available material. To disseminate the findings of this review, the authors will submit the results for publication in a medical or health sciences journal, present at relevant conferences, and use other knowledge translation strategies to reach diverse stakeholders (e.g., host webinar, share infographics).

Keywords: Characteristics; Impact; Injury; Patient navigation; Scoping review; Trauma

Abstract word count: 272

STRENGTHS AND LIMITATIONS OF THIS STUDY:

- This scoping review will conform to the rigorous methodology manual of the Joanna Briggs Institute (JBI).
- The search strategy was adapted for implementation across the 5 databases, CINAHL (EBSCO), EMBASE (Elsevier), ProQuest Nursing & Allied Health, PsycINFO (EBSCO), and MEDLINE (Ovid), as well as a grey literature search.
- In compliance with JBI methodology, quality assessment of the articles will not be performed.
- Only articles in English and French in will be considered for inclusion.

BACKGROUND

Injury-related trauma refers to physical injuries that occur suddenly and with enough severity to require immediate medical attention.[1] There are many mechanisms of injury-related trauma, such as blunt force, penetrative force, and burning. This can result in wounds, broken bones, and internal organ damage, among other injuries. Three of the top five most common causes of death among individuals between the ages of 5 and 29 are from injury-related trauma.[2]

Patients who experience injury-related trauma often have complex care needs and frequently require extensive support from multiple care providers during their hospital stay and recovery.[3] Many experience gaps in care while in the hospital and when they are transferred elsewhere, whether to their home, to a rehabilitation facility, or to another hospital.[4, 5, 6] Other issues involving this population that have been identified in the literature include disrupted communication and information flow between services;[7] a lack of support for parents during pediatric trauma cases;[8] patients not being completely informed about their treatment options;[4] and patients being excluded from the decision making around their own course of treatment, which often include several phases.[4]

Individuals and their caregivers with access to integrated care experience improved outcomes.[9] Integrated care involves a comprehensive delivery of services, which are designed to meet both the specific needs of the individual and the general needs of the population.[10] Evidence shows that the benefits of integrated care include reduced hospital

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admissions, reduced readmissions, improved treatment guideline adherence, and improved quality of life.[10] Patient navigation is a relatively new approach to integrated care that supports patients and families to overcome gaps and barriers to care by providing patient centred care designed to meet the individual needs of patients, their families, and communities.[11] It helps patients to access the necessary resources and services to support their needs whether in hospital, during transitions in care, or managing their condition at home.[11] Patient navigation supports integrated care at multiple levels through a variety of means.[11] This includes creating and coordinating a patient’s care plan across multiple providers at a micro-level, as well as supporting capacity building with care providers at the meso-level.[11] At the macro-level, patient navigation can help ensure integrated care by identifying the needs and adapting services accordingly for an entire patient population.[11] While its origins are in cancer care,[12] patient navigation has been utilized to support the care of a variety of conditions, such as diabetes,[13] kidney disease,[14] mental health,[15] and HIV.[16] It has also been adapted to a range of settings, including community settings and primary care clinics.[11, 17] Patient navigation programs improve the integration of care and proactively support patients and their caregivers as they navigate the healthcare system.[17] For instance, research shows that patient navigation can reduce stress and improve overall experience with the healthcare system;[18] increase engagement with mental health services;[19] improve clinical care;[20] and reduce hospital readmissions.[20] Patient navigation can also benefit patients who experience injury-related trauma, their families, and the care team by offering an integrative, collaborative approach to care and providing consistent and reliable support.[20, 21, 22] As this population faces increased risk of unplanned readmissions, the support provided through navigation programs can help reduce these readmissions.[6, 21] Patients who experience injury-related trauma frequently require care from multiple types of health care providers,[3] and patient navigation can facilitate coordination between those care providers.[17, 18] It can also reduce barriers for patients while they access multiple care providers across the care system, as well as the gaps in care that frequently occur during transitions by coordinating and integrating care and advocating to fill those gaps at a systems level. [4-6]

Recently, there has been an increased interest in patient navigation programs across various health-related contexts and settings.[23] As such, it will be useful to explore patient

navigation programs for patients who experience injury-related trauma and their caregivers in the hospital setting. The purpose of this scoping review is to map literature on the characteristics and impact of hospital-based patient navigation programs in this area. Because patient navigation is a service delivery approach that is just emerging in this area of practice, a scoping review will be beneficial to understanding the range of hospital-based navigation programs for patients who experience injury-related trauma and their caregivers. It will also allow us to explore patient and health system outcomes reported in the literature. Generally, this review will provide information to support the development of hospital-based patient navigation programs for patients who experience injury-related trauma, their families, and care team members. Specifically, this review will inform the development of a pilot program of patient navigation for trauma patients in New Brunswick, Canada. Scoping reviews are used to summarize the available knowledge on a particular topic,[24] and provide a structured and rigorous methodology for examining broad and exploratory research questions.[25] A preliminary search of PubMed, PROSPERO, and *JBIR Database of Systematic Reviews and Implementation Reports* confirmed that there are no current or ongoing reviews on this topic.

METHODS AND ANALYSIS

The proposed scoping review will be conducted in accordance with the Joanna Briggs Institute (JBI) methodology for scoping reviews.[26] The scoping review will also follow the Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for Scoping Reviews (PRISMA-ScR) checklist,[24] which will ensure the review is transparently reported and useful to its users.[27] Our study began in June 2021 and the planned end date is June 2022.

Eligibility criteria

Participants

This scoping review will focus on hospital based-patient navigation programs for patients who experience injury-related trauma and/or their caregivers. Patients who experience injury-related trauma include individuals who experience physical injuries that occur suddenly and with enough severity to require immediate medical attention.[1] The review is not specific to any injury-related trauma, condition, sex, age, ethnicity, or other demographic variable.

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While the treatments for and the needs of patients who experience injury-related trauma vary according to the nature of their injuries, in accordance with the objective of a scoping review,[24] this review seeks to identify what literature exists on patient navigation programs across the spectrum of traumatic physical injury. Because we anticipate there to be a small number of articles, we do not want to limit the scoping review to any one specific type of injury-related traumatic injury. Articles that address a variety of patient navigation programs, including injury-related programs, will be included if the characteristics of the injury-related trauma navigation programs are reported separately; if the characteristics are not reported separately, the articles will be excluded.

A caregiver refers to an unpaid individual (usually a spouse, family member, or friend) who provides most of the informal care or support of patients who experience injury-related trauma.[28] Excluded from this review are articles that address patients who experience non-injury-related trauma (e.g., emotional trauma).

Concept

The main concept is characteristics of patient navigation programs. Included articles must contain a discussion on the characteristics of the patient navigation program. Patient navigation will be defined as a partnership between a patient, caregiver, or member(s) of the care team and a patient navigator (including professional, lay, or peer navigators), who facilitates timely access to health and/or community services and resources and fosters self-management and autonomy through education and emotional support.[17, 29] We will define programs as interventions or services intended to improve the navigation of services and resources for patients who experience physical trauma and their caregivers. To ensure consistency, programs will be included if they align with this definition. For example, studies where the navigator’s main role is to deliver clinical care (e.g., triage) will be excluded. Patient navigation programs that include various titles for the role of the patient navigator will be considered, such as nurse navigator, care navigator, peer navigator, and lay navigator. This review will exclude programs provided by case managers. While there is some overlap between the roles of patient navigators and case managers, such as care coordination, navigators typically provide informational and emotional support, while case managers provide clinical care.[17, 30] Patient navigators help individuals navigate through existing

services and can advocate for missing services, whereas case managers will fill this need by providing clinical care and acting as a care provider.[17, 30]

Impact, the secondary concept of this review, is the extent to which an intervention was effective in terms of its intended and unintended health and social outcomes.[31] The American Centers for Disease Control and Prevention defines the evaluation of a program's impact as the assessment of a program's effectiveness to achieve its goals (p.1).[32] This review will consider articles that employ various evaluation methods, such as case control studies; analysis of chart data or administrative data; and qualitative studies. It will include negative and positive impacts. Note, however, that articles do not need to report on impact to be included. Articles can be included if they describe the main concept, which is the characteristics of injury-related trauma navigation programs.

Context

This review will consider articles where the patient navigation program is delivered in a hospital setting. While we will include hospital-based patient navigation programs that offer services to support patients who experience injury-related trauma and/or their caregivers in the community (e.g., with the transition from hospital to home), programs delivered solely within the community will be excluded. Programs that support patients during their transitions must begin in hospital prior to discharge to be included. There will be no geographical limit to this study as the intent is to explore the characteristics and impact of patient navigation within hospital settings across all locations.

The 5 steps for JBI scoping reviews

JBI recommends the five following steps when conducting a scoping review: 1) identifying the research question; 2) identifying relevant studies; 3) study selection; 4) charting the data; and 5) collating, summarizing, and reporting the results.[24, 26]

Step 1: Identifying the research questions

The research questions for this scoping review are:

1. What are the characteristics reported in the literature of hospital-based patient navigation programs to support patients who experience injury-related trauma and their caregivers?

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2. What is the existing evidence in the literature on the impact of hospital-based patient navigation programs for patients who experience injury-related trauma and their caregivers?

Step2: Identifying relevant studies

This scoping review will consider all qualitative, quantitative, and mixed-method studies for inclusion, except for systematic, scoping, and literature reviews. The reference lists of relevant reviews, as well as articles included in the review, will be hand-searched for additional articles. Other literature, such as unpublished studies and/or evaluation reports, will also be considered for inclusion. Only full texts of articles will be considered for review. The review will be limited to literature published in or after 1990 because that is the year patient navigation was conceptualized.[33] Due to the linguistic capabilities of those conducting this review, only articles in English or French will be considered for inclusion.

A JBI-trained librarian (RW) conducted an initial search of the CINAHL database to identify articles on this topic. The librarian formulated a search strategy drawing from the words contained in the titles, abstracts, and subject descriptors of these articles. Additionally, the search strategy drew from a number of knowledge syntheses on related topics, as well as the search strategy reported in Doucet et al. (in press).[30] Once the search terms were identified, they were tested in CINAHL in a variety of combinations and using a variety of search fields until it was determined that the search results both completely reflected the scope of the research available on this topic and avoided unnecessary noise from irrelevant results. The search strategy is designed to capture the varied terminology that describes the role of patient navigator, such as care coordinator and pivot nurse. The terms used in the search are based on a thorough assessment of the terms most common to the research area. Based on this review of the terminology, it is likely that the terms used captured a significant portion of the literature on the topic. No limits were applied to the search.

Next, the search was adapted and implemented across five databases, which are (1) CINAHL with Full-Text (EBSCOhost); (2) Embase (Elsevier); (3) ProQuest Nursing & Allied Health (ProQuest); (4) PsycINFO (EBSCOhost); and (5) MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations, Daily and Versions(R) 1946 to Present (Ovid). Backwards and forwards citation searches will also be performed to identify additional studies. We will do so by searching the reference lists of included studies and

using Scopus (Elsevier) to identify and screen studies citing them. An example of the search strategy applied to MEDLINE is noted in Table 1.

Table 1: Search strategy: Syntax used in the MEDLINE (Ovid) search strategy, completed 6 June 2021

	Search	Results
1	"navigator*".ab,ti.	3555
2	"pivot nurs* ".ab,ti.	15
3	"care coordinator* ".ab,ti.	767
4	(navigat* adj1 (patient* or communit* or famil* or nurse* or health or system or care or service* or program* or intervention* or support* or assist*)).ab,ti.	7818
5	Patient Navigation/	837
6	1 or 2 or 3 or 4 or 5	11131
7	"contusion*".ab,ti.	11518
8	"abrasion*".ab,ti.	9387
9	"dislocat*".ab,ti.	54612
10	"rupture*".ab,ti.	131376
11	"sprain*".ab,ti.	5878
12	"auto amputation* ".ab,ti.	84
13	"autoamputation*".ab,ti.	216
14	"penetrat*".ab,ti.	138985
15	"wound*".ab,ti.	213013
16	"injur*".ab,ti.	848155
17	"accident*".ab,ti.	117725

18	"fracture*".ab,ti.	269312
19	(physical adj1 trauma).ab,ti.	1094
20	(damage adj1 (organ* or physical)).ab,ti.	14406
21	(bone adj2 (broke or broken or break*)).ab,ti.	730
22	"lacerat*".ab,ti.	13255
23	"burn*".ab,ti.	105755
24	exp "Wounds and Injuries"/	933086
25	7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24	2072486
26	6 and 25	1081

The unpublished literature search will utilize ProQuest Dissertations and Theses; Google and Google Scholar; and targeted searching of relevant websites, such as websites for known patient navigation or trauma-related organizations and programs. We will use the following keywords in our search: patient navigation, injury related trauma patients, hospital-based care and inpatient. Sources will be screened in Google and Google Scholar according to titles until the point of saturation (i.e., after two pages are passed without opening a link). We will include a full list of the grey literature databases and corresponding keyword searches in the final report.

Step 3: Study selection

Articles identified by the keyword searches and hand searches of reference lists will undergo a careful selection process. All potentially relevant articles will be collated and uploaded to Zotero 5.0 software and duplicates will be removed (Zotero, Fairfax, United States). The remaining records will then be uploaded to Covidence and any missed duplicates will be removed (Covidence, Melbourne, Australia). Next, two independent reviewers will screen the titles and abstracts against the inclusion criteria (see Table 2). Reviewers will meet to discuss

any discrepancies and a third independent reviewer will be available to resolve any outstanding conflicts.

Table 2: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Articles that describe the characteristics of an injury-related trauma navigation program in the hospital setting	Articles that do not describe the characteristic of an injury-related trauma program and/or are not in the hospital setting (e.g., solely in the community setting)
Articles in which patient navigation is the primary aim of the program	Articles in which patient navigation is not the primary aim of the program
Articles published in English and/or French	Articles published in languages other than English or French.
Articles published in or after the year 1990	Articles published before the year 1990
Full text available	Conference papers, articles that are not available in full text
Primary research studies (unpublished studies and evaluation reports will be considered)	Secondary research studies (e.g., any type of review)

Once titles and abstracts have been screened, two independent reviewers will screen the full text of the relevant articles against the inclusion criteria. Any conflicts will be resolved either through discussion or by a third independent reviewer. The reviewers will record the reasons for excluding the full texts of articles that do not meet the inclusion criteria.

Step 4: Charting the data

Two reviewers will independently extract data from the articles using a data extraction tool, which was developed by the research team using Microsoft Excel (see Table 3). Any disagreements between the reviewers will be resolved through discussion or consultation with a third reviewer. The data extraction tool was piloted by the research team to ensure comprehensiveness. Extracted data will include specific information about the population, concept, context, and key findings related to the scoping review's objective. We will modify the data extraction tool if necessary during the course of the review. Modifications will be

detailed in the scoping review. Where required, authors of papers will be contacted to request missing or additional data.

Table 3: Data extraction instrument

Author				
Publication Year				
Type of source/study design where applicable				
Program description				
Geographic location				
Type of Hospital Setting				
Navigator title				
Navigator background				
Population/injury type				
Severity of injury				
Impacts of patient navigation program				
Program barriers				
Program facilitators				

Step 5: Collating, summarizing and reporting the results

The results of the search will be reported in full in the final scoping review and presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scoping Reviews (PRISMA-ScR) flow diagram.[24] The extracted data will be presented in tabular format in a way that reflects the scoping review’s objective. It will include data such as author(s); publication year; type of source (e.g., published qualitative study, unpublished program

evaluation); program description, including geographic location, setting, population/type of injury, severity of injury, navigator title, navigator background; and impact (where applicable), barriers (where applicable), and facilitators (where applicable). We will also present the results in narrative format, describing how the results relate to the objective of the scoping review.

PATIENT AND PUBLIC INVOLVEMENT

No patient involvement.

ETHICS AND DISSEMINATION

Ethics approval is not required to conduct this study because the scoping review will synthesise information from publicly available material. To disseminate the findings of this review, the authors will submit the results for publication in a medical or health sciences journal, present at relevant conferences, and use other knowledge translation strategies to reach relevant stakeholders (e.g., host webinars, share infographics).

Competing interests statement

The authors declare no competing interests.

Funding

This work was supported by the New Brunswick Innovation Foundation, grant number [POF-0000000021].

Acknowledgements

We would like to thank our team members from the Trauma New Brunswick, Ian Watson and Pauline Waggott, for consulting about the scoping review.

Authors' contributions

Shelley Doucet is co-leading the research study.

Alison Luke is co-leading the research study.

Grailing Anthonisen co-wrote and edited the protocol.

Richelle Witherspoon designed and ran the search strategy.

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A. Luke MacNeill co-wrote and edited the protocol.

Lillian MacNeill supported the writing process and edited the protocol.

Katherine J. Kelly supported the writing process and edited the protocol.

Taylor Fearon supported the writing process of the protocol.

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PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol*

Section and topic	Item No	Checklist item
ADMINISTRATIVE INFORMATION		
Title:		
Identification	1a	Identify the report as a protocol of a systematic review
Update	1b	If the protocol is for an update of a previous systematic review, identify as such
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number
Authors:		
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments
Support:		
Sources	5a	Indicate sources of financial or other support for the review
Sponsor	5b	Provide name for the review funder and/or sponsor
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol
INTRODUCTION		
Rationale	6	Describe the rationale for the review in the context of what is already known
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)
METHODS		
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated
Study records:		
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review

Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms done independently, in duplicate), any processes for obtaining and confirming data from investigators
Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I^2 , Kendall's τ)
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)

*** It is strongly recommended that this checklist be read in conjunction with the PRISMA-P Explanation and Elaboration (cite when available) for important clarification on the items. Amendments to a review protocol should be tracked and dated. The copyright for PRISMA-P (including checklist) is held by the PRISMA-P Group and is distributed under a Creative Commons Attribution Licence 4.0.**

From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015 Jan 2;349(jan02 1):g7647.