BMJ Open

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

Shelley Doucet [iD] ,[1,2,3] Alison Luke,[1,2,3] Grailing Anthonisen[1,3]

[1]Department of Nursing and Health Sciences, University of New Brunswick, Saint John, New Brunswick, Canada
[2]University of New Brunswick (UNB) Saint John Collaboration for Evidence-Informed Healthcare: A JBI Centre of Excellence, Saint John, New Brunswick, Canada
[3]Centre for Research in Integrated Care, Saint John, New Brunswick, Canada

Correspondence to
Shelley Doucet;
sdoucet@unb.ca

ABSTRACT

Objective This review's objective is to map the literature on the characteristics, impact, barriers and facilitators of hospital-based patient navigation programmes that support patients who experience injury-related trauma and their caregivers. Patients who experience injury-related trauma frequently require support from multiple care teams and face many challenges to care, both in hospital and when transitioning across settings and services. Patient navigation can improve their care.

Design This review is conducted according to JBI methodology for scoping reviews. The initial database search took place on 6 June 2021 and the grey literature search took place between September and October 2021. The results are presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scoping Reviews flow diagram.

Setting This review considered materials where the patient navigation programmes were delivered in hospital settings. There was no geographical limit to this study.

Participants This review focused on hospital-based patient navigation programmes for patients who experience injury-related trauma and/or their caregivers.

Results This review captured 11 records that describe 10 programmes. All programmes were based in the USA. Most programmes provided education, care coordination, discharge planning, and referrals to resources, services, and programmes to assist patients and/or their families in the hospital or the community. Half the programmes were based in level 1 trauma centres. Common impacts included decreases in readmission rates and increases in satisfaction rates. Barriers included difficulty recruiting or enrolling patients with short hospital stays and hospital administrators' and healthcare providers' lack of understanding of the navigator role. Navigator background, either professional or experiential, was identified as a facilitator, as was flexibility in programme delivery and communication methods.

Conclusions Eleven records show a small but distinct sample. Reported characteristics, impact, barriers and facilitators were consistent with findings from other patient navigation studies. The results can inform the development and implementation of similar programmes in trauma centres and support changes in policy to improve the delivery of care.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ This scoping review conformed to the rigorous JBI methodology.

⇒ This scoping review provided useful information for individuals and organisations engaged in developing or implementing patient navigation programmes for patients who experience injury-related trauma and their caregivers. The multiple similarities across programmes suggest a general trend in the programmes of this nature, which this scoping review was able to capture.

⇒ The authors did not perform a quality assessment of the articles, as JBI methodology does not require such assessments for scoping reviews.

⇒ Because the authors did not pull from any primary data, they could only interpret the information available in the included records.

⇒ This scoping review only located programmes from one country. This may have been due to the linguistic capabilities of the reviewers, as they only spoke French and English.

INTRODUCTION

Traumatic injury can affect all people, regardless of age, gender, race, or any other demographic variable. Accidental and violent injuries cause nearly 4.4 million deaths annually, close to 8% of all deaths worldwide.[1] Non-fatal consequences of injury-related traumas include hospitalisations, emergency department visits, and temporary and long-term disabilities that require rehabilitation and follow-up care.

Traumatic injuries are physical injuries with a myriad of causes that can include road accidents, burns, falls, targeted violent acts either against oneself or others, and drowning. They require immediate medical attention and can result in broken bones and internal organ damage. As such, patients who experience injury-related trauma are frequently complex, requiring extensive support and care from multiple care providers.[2] Patients

can face many challenges to care, such as barriers to communication with health professionals across hospital, rehabilitation, and community settings[3]; disrupted transitions between settings and care teams[4]; and delays in transfers between services.[5] When patients are transferred, for example, to their home or from a hospital to a long-term care facility, they face an increased risk of adverse events that can result in hospital readmission.[6 7] For example, patients who experience traumatic brain injuries (TBIs) are rehospitalised at a rate between 20% and 23% in the first 3 years after injury.[8] At discharge, poor communication is a significant barrier to smooth transitions.[7 9 10] Other studies have shown that patients are often not fully informed about their treatment options or are not consistently engaged in making decisions about their care in hospital and after discharge.[10 11] Patients who experience injury-related trauma have reported a need for a single point of contact to facilitate and coordinate care during discharge.[10]

One way to counteract and prevent the challenges people who experience injury-related trauma face is patient navigation.[7] This model is designed to integrate care, resolve barriers to care, and improve care outcomes.[12 13] Patient navigators provide support by liaising with patients and their families to access resources and services, by coordinating care, and by providing education. Notably, there is a lack of consistency in the navigator title within the literature. Other titles include, but are not limited to, care coordinators and system navigators. Their backgrounds can be professional, such as nursing or social work, or they can be peer navigators, who have lived experience with a disease or condition.[14 15]

Patient navigation programmes began in cancer care, but have since been adapted and implemented for a variety of other conditions and populations, such as kidney disease,[16] diabetes,[17] and children and youth with complex care needs.[18] Patient navigation could benefit patients who experience injury-related trauma by integrating and improving their access to care. These are patients who face an increased risk of unplanned readmission,[19] need the care of multiple care providers and frequently encounter gaps during transitions in care.[3 7 19] Patient navigation programmes can help to reduce unplanned readmissions,[20] and coordinate care between providers to reduce and eliminate gaps in care transitions.[2 3 7 19]

Because the literature in this area is currently limited, the authors determined a scoping review was suitable to explore hospital-based navigation programmes for patients who experience injury-related trauma and their caregivers, as well as the reported patient and health system outcomes. Scoping reviews provide a structured and rigorous methodology to enable exploratory research with broad research questions.[21] Considering this, the purpose of this scoping review was to map the literature and available evidence on the characteristics and impact of hospital-based patient navigation programmes in this area, as well as the barriers and facilitators to their

implementation and delivery. A preliminary search of PROSPERO, CINAHL and JBI Evidence Synthesis was conducted and no current or in-progress scoping reviews or systematic reviews on the topic were identified. This review was conducted in accordance with an a priori protocol.[22]

METHODS AND ANALYSIS

This review was conducted using the Joanna Briggs Institute (JBI) methodology for scoping reviews and in accordance with an a priori protocol.[22]

Review questions
1. What are the characteristics of hospital-based patient navigation programmes that have been reported in the literature 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 programmes for patients who experience injury-related trauma and their caregivers?
3. What is the existing evidence in the literature on the barriers and the facilitators to the implementation and delivery of hospital-based patient navigation programmes for patients who experience injury-related trauma and their caregivers?

Inclusion criteria
Participants
This scoping review focused on hospital-based patient navigation programmes for patients who experience injury-related trauma and/or their caregivers. Patients who experience injury-related trauma included individuals who experience physical injuries that occur suddenly and with enough severity to require immediate medical attention.[23] The review did not specify any injury-related trauma, sex, age, ethnicity, or other demographic variable. Injury-related traumas may include, but are not limited to, blunt force, penetrative force, falls, or burning. These can cause broken bones, wounds, and/or internal organ damage. We excluded articles that address patients who experience non-injury-related trauma (eg, emotional trauma). A caregiver referred to an unpaid individual (usually a spouse, family member or friend) who provides most of the trauma patient's informal care or support.[24]

Concept
Characteristics of patient navigation programmes were the main concept of this scoping review. We defined programmes as interventions or services intended to improve the navigation of services and resources for patients who experience injury-related trauma and their caregivers. Included articles needed to contain a discussion on the characteristics of the patient navigation programme. Patient navigation was 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 facilitated timely access to health and/or community services and resources and fostered self-management and autonomy through education and emotional support.[15 25] To ensure consistency, programmes were included if they aligned with this definition. For example, studies where the navigator's main role was to deliver clinical care (eg, counselling) were excluded. Patient navigation programmes that included various titles for the role of the patient navigator, such as nurse navigator, care navigator, peer navigator, and lay navigator were considered.

This review excluded case management programmes. There is some overlap between the roles of patient navigators and case managers, such as care coordination. Notably, however, navigators typically provide informational support, while case managers can also provide clinical care.[15 26] Case managers typically have professional experience, such as nurses, whereas patient navigators can be individuals with or without professional experience, such as peers with lived experience. Patient navigators help individuals navigate through existing services and can advocate for missing services. On the other hand, case managers will fill this need by providing clinical care and acting as a care provider when needed. As well, patient navigation programmes tend to be more accessible to patients and their caregivers than case management programmes—often because of eligibility criteria.[15]

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 programme's impact as the assessment of a programme's effectiveness to achieve its goals (p.1).[28] This review considered articles that employ various evaluation methods, such as case control studies; analysis of chart data or administrative data; and qualitative studies. It included negative and positive impact. The tertiary concept in this review was barriers and facilitators to the implementation and delivery of patient navigation programmes. This additional concept was a divergence from our published protocol.[22] We made this change as we initially listed barriers and facilitators in the protocol as data we would extract and we believed it would be more accurate to include them as concepts. However, articles did not need to report on impact, barriers, or facilitators to be included. So long as articles described the main concept, the characteristics of injury-related trauma navigation programmes, then they were included.

Context

This review considered materials where the patient navigation programmes were delivered in hospital settings. While we included hospital-based patient navigation programmes that offered services to support patients who experience injury-related trauma and/or their caregivers following discharge into the community (eg, with the transition from hospital to home), we excluded programmes delivered solely within the community.

There was no geographical limit to this study as the intent was to explore the characteristics and impact of patient navigation within hospital settings across all locations.

Types of sources

This scoping review considered 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, were hand-searched for additional articles. Other literature, such as unpublished studies and/or evaluation reports, were also considered for inclusion. Only full texts of articles were considered for review. The review was limited to literature published in or after 1990 because that is the year patient navigation was conceptualised.[26]

Search strategy

The search strategy aimed to locate both published and unpublished materials. A JBI-trained librarian conducted an initial limited search of CINAHL (EBSCO) and performed an analysis of the text words contained in the titles, abstracts, and subject descriptors to identify articles on the topic. Other knowledge syntheses on related topics were consulted to supplement identified terms, such as Doucet et al's scoping review protocol on dementia navigation programmes.[26] The text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles, were used to develop a full search strategy. The search terms that were identified in this first step were then tested in CINAHL (EBSCO) to establish that the search results both completely reflected the scope of the research available and reduced the inclusion of irrelevant results. There were no limitations placed on the search.

The search was adapted for each of the databases included in this review. These were: CINAHL with Full-Text (EBSCOhost), Embase (Elsevier), ProQuest Nursing & Allied Health (ProQuest), PsycINFO (EBSCOhost), and MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations, Daily and Versions(R) 1946 to Present (Ovid). The search strategy was adapted for each included information source and a second search was undertaken on 6 June 2021. Full search strategies are provided in the online supplemental appendix 1. The reference lists of articles selected for data extraction were screened for additional papers. Studies published in English and French were included because of the linguistic capabilities of the independent reviewers.

The search for grey literature included searching Dissertations and Theses (ProQuest) and Google Scholar, as well as targeted searching in Google and websites of known patient navigation or injury-related trauma organisations and programmes (eg, American Association for the Surgery of Trauma and CENTER-TBI). For each search, the reviewers examined each page of search results until they went two pages without clicking any new links. The grey literature search was conducted between September and October 2021.

Study/source of evidence selection

Following the search, all identified records were collated and uploaded into Zotero V software (Zotero, Fairfax, USA) and duplicates removed. The remaining results were then uploaded to Covidence (Covidence, Melbourne, Australia), where further duplicates were removed. Titles and abstracts were screened by two independent reviewers for assessment against the review's inclusion criteria. A third reviewer resolved any conflicts. Potentially relevant papers were retrieved in full and were imported into Covidence. Full-text studies that did not meet the inclusion criteria were excluded. Any disagreements that arose between the two independent reviewers were resolved by a third reviewer.

Data extraction

Two reviewers independently extracted data from the records, with a data extraction tool that was developed by the research team with Microsoft Excel. The table was developed as part of the protocol.[22] Barriers and facilitators were identified based on the authors of the included studies' attributions. Extracted data included specific information about the population, concept, context and key findings related to the scoping review's objective and research questions. After the data was extracted, the authors conferred to ensure the data extracted was correct and complete and avoided disagreements or transcription errors. Any disagreements that arose between reviewers were resolved through discussion or consultation with a third reviewer.

Data analysis and presentation

The results of the search are presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scoping Reviews flow diagram (figure 1). The results are summarised and presented in tables, which align with the scoping review's objective. The full tables are provided in the online supplemental appendix 2. As well, there is a narrative summary of the results, which describes how they relate to the review's objective and questions.

Patient and public involvement

No patient involvement.

RESULTS
Study inclusion

The search strategy identified 4207 records for screening. The screening software removed 1602 duplicates. Two independent reviewers screened 2605 titles and abstracts. They excluded 2336 studies at this stage. Two independent reviewers then assessed 269 full-text studies for eligibility. During this process, they excluded 258 studies. The most common reasons for exclusion were because patient navigation was not the primary aim of the programme and/or the programme was not focused on injury-related trauma. A total of eleven studies were included in this scoping review.

Characteristics of included studies

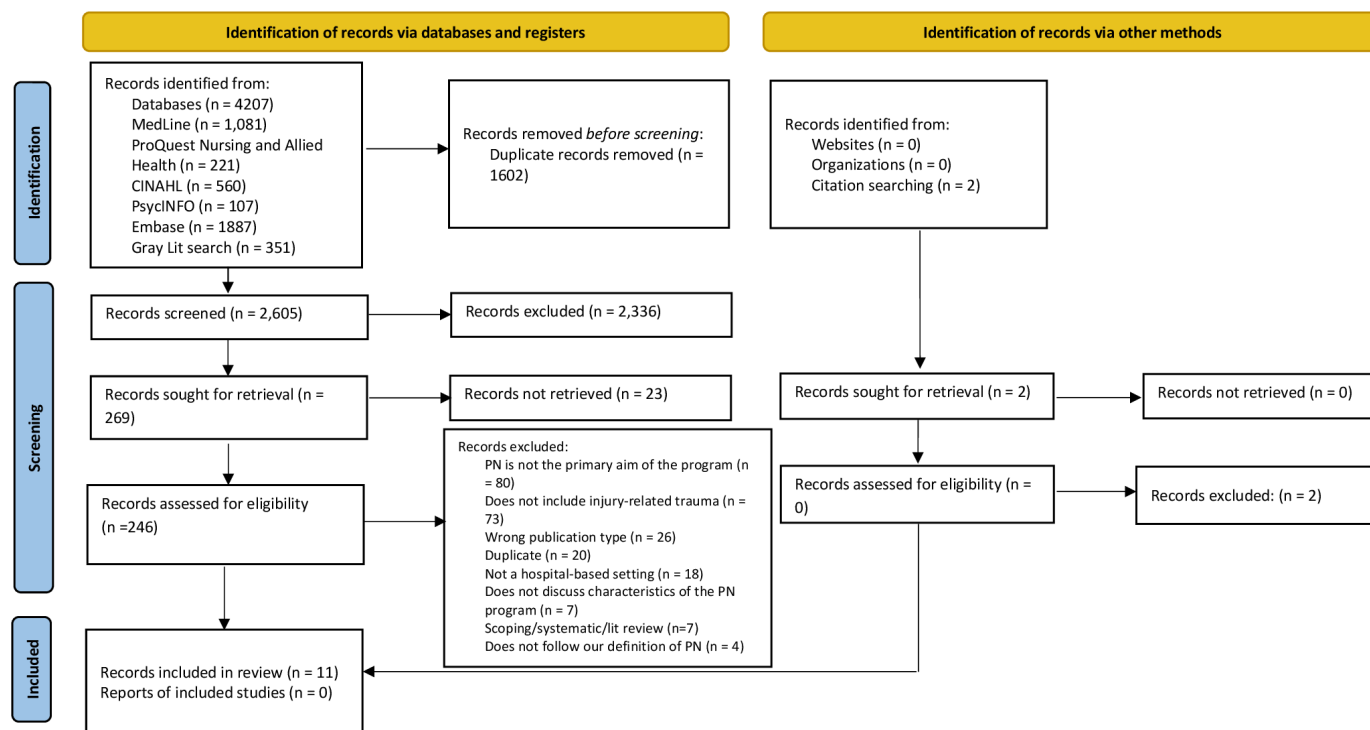This scoping review captured eleven records that matched the inclusion criteria. They described ten programmes,

Figure 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses. Flow chart of the search results and study selection and inclusion process.[77] PN, Patient navigation.

with two entries describing the same programme. Five records were published peer reviewed articles that used a variety of different methodologies and study designs. These included descriptive studies (n=3), 1 pilot prospective cohort design, and 1 case study. Six records were unpublished grey literature. These included slide show presentations (n=2), conference posters (n=2), a brief (n=1) and an annual report (n=1). All the articles (n=11) described programmes based in the USA. Most of the records (n=7) were published between 2017 and 2021. Two were published in 2018 and another three were published in 2021. The earliest study was published in 2005. Two were published in 2016.

Review findings
Geographic location
All the programmes were based in the USA (n=10) in the following states: Arkansas (n=1), Idaho (n=1), Maryland (n=2), Ohio (n=1), Georgia (n=1), and Tennessee (n=1). One programme was not specified further than the Northwestern USA, while another was not specified further than the USA.

Characteristics and descriptions of programs
Most of the programmes (n=8) provided education for people who experience injury-related trauma and their families, often in the form of tailored educational and informational resources about trauma, diagnoses, and treatment plans.[29–36] Most of the programmes (n=7) also provided care coordination.[30–34 36 37] Six programmes provided referrals to resources, services, and programmes to assist patients and/or their families either in the hospital or in the community.[29–32 35 38]

Five programmes described providing support to patients and families, as well as the care team,[29 30 32 34 38] while two programmes reported explicitly supporting families.[32 38] Two programmes reported providing emotional or psychosocial support to patients and families.[29 38] One programme administered needs assessments,[33] while others (n=2) provided problem-solving.[31 38]

Five of the programmes reported that navigators provided discharge planning while in hospital.[29 31–33 36] Eight programmes reported providing postdischarge follow-up, such as ensuring patients attend follow-up appointments and understand their medications.[29 31 33–38] Three programmes reported either identifying barriers to care for patients and their families or providing advocacy on behalf of patients and their families, for example, to access services.[31 35 38]

Most programmes (n=6) reported that a nurse filled the navigator role.[29–31 36–38] Two programmes employed lay navigators with additional training.[34 35] One programme had a certified medical interpreter fulfilling the navigator role,[33] and another programme had a social worker.[32]

Type of hospital
The programmes were offered in a range of hospital-based settings. Several programmes (n=5) were based

in level 1 trauma centres.[29 32 33 36 37] Two programmes were based out of level 2 trauma centres.[30 38] Another programme was based both in a level 1 trauma centre and a level 2 trauma centre.[35] One programme was based out of a trauma centre but did not specify which level of trauma.[34] One programme was based out of a shock trauma centre, also known as a Primary Adult Resource Centre.[31]

Population/injury type
There were three paediatric trauma programmes.[29 33 37] Within these three programmes, one was specifically for Hispanic children with TBIs.[33] One programme supported complex patients, specifically identifying patients such as those who experience polytrauma,[32] while another programme supported black patients who experience violent injury.[35]

The remaining (n=5) programmes did not specify type of trauma or injury.[30 31 34 36 38 39] Two of these programmes supported patients who face increased risk of readmission, listing such reasons of referral to the programme as history of alcohol or substance abuse, no insurance and comorbidities.[34 39 39]

Impact
Six sources reporting on six programmes had generally positive findings related to how the programmes were received and perceived. Two sources reported a high level of satisfaction with care,[29 33] and that clients found the programme helpful.[29] Two sources reported there were improvements in patient care and benefits to patients, families, and the care team,[32 38] while another reported improving access to services and quality of care.[35] Yet another source reported positive feedback from patients, families, and the care teams the programme supported.[36]

Five sources, reporting on four programmes, found a decrease in readmission rates following programme participation.[30 31 36 37 39] In particular, four of these sources, reporting on three programmes, outlined a decrease in readmission rates 30 days after discharge.[30 31 37 39] One source found an additional decrease in readmission rates 72 hours after discharge.[30] One source did not specify a time period associated with the decrease in readmissions.[36]

One source reporting on one programme described decreases in lengths of stay in critical care units, in medical units and in surgical units.[30] Notably, one record did not find any decreases in lengths of stay, despite initial expectations that the programme would have this effect.[36]

One programme had a decrease in the total amount of critiques and complications reported in the trauma registry.[30] Another programme had an increase in participation in rehabilitation after discharge, as well as a significant improvement in parents' caregiving self-efficacy.[33] Two sources reporting on the same programme found that most patients attended their follow-up appointments and that the overwhelming majority of patients (96%) completed the programme.[31 39]

Barriers

There were a range of barriers to programme implementation and delivery. Two programmes reported having difficulty recruiting or enrolling patients who had shorter hospital stays, which led to a difficulty delivering the programme.[33 35] One attributed this difficulty to a combination of barriers, including difficulty verifying patients' identities and patients' distrust of the state and state institutions.[35] This particular programme also reported a lack of understanding from and collaboration with hospital administrators impeding their access to eligible patients.

One programme reported gaps in insurance for clients as a barrier, as it decreased their access to services and made it difficult to provide some navigation and follow-up trauma care.[37] Another programme reported the cost of a nursing salary—the professional background of the navigator—as a barrier.[36] Space was another logistical concern, as the navigators of one programme did not have an office and faced challenges meeting with clients and their loved ones and having confidential or private conversations.[35]

Another programme reported geographic distance; emotional concerns such as childcare and the difficulty of children with traumatic injuries recovering at different rates; and logistical concerns such as scheduling as barriers to the programme's peer support group component.[29] As well, for another programme, low language literacy was reported as a barrier to understanding programme materials.[33]

Facilitators

Two sources reporting on two programmes found that the backgrounds of the navigators facilitated programme delivery, but for different reasons.[35 37] One source listed the lived experience of the lay navigators as community members as facilitators to building trust and rapport with clients.[35] This programme was for violently injured black men and also reported clients' lack of trust for institutions as a barrier. As such, navigators being able to build this trust and rapport acted as a good countermeasure for this barrier. Another source listed the nursing background as a facilitator to helping support clients and their complex problems.[37]

Two sources reporting on two programmes asserted the flexibility in the programmes' delivery and communication methods as facilitators.[33 37] Similarly, communication and collaboration were facilitators in one source.[32] One programme reported the relationship between navigator role and other hospital staff as a facilitator.[32]

Funding was another facilitator for one programme.[36] Funding to cover the cost of a nurse's salary facilitated the role.[36] This same programme also listed resources like office space and a cell phone for the navigator as facilitators.[36]

DISCUSSION

This review maps the literature on the characteristics, impact, barriers, and facilitators of hospital-based patient navigation programmes that support patients who experience injury-related trauma and their caregivers. The characteristics of the 10 programmes varied. They delivered a variety of services, such as education; care coordination; discharge planning; and referrals to resources, services, and programmes to assist patients and/or their families either in the hospital or in the community. Common impacts were decreases in readmission rates and increases in satisfaction rates. A range of barriers were identified, such as difficulty recruiting or enrolling patients with short hospital stays and hospital administrators' and healthcare providers' lack of understanding of the navigator role. The professional or experiential background of the individual filling the navigator role was the most commonly reported facilitator.

Most articles included in this review were published since 2017. Indeed, researchers have been commenting on the recent and increasing popularity of patient navigation for a few years.[15 40 41] All programmes were based in the USA, which is not surprising, given that patient navigation began in the USA, in part to temper its very complicated healthcare system.[42] The first patient navigation programme was developed in the 1990s by Dr Freeman to support African American women with breast cancer.[13] This model of care has since evolved to improve access to care for diverse populations and condition types. It is emerging as a care model across various countries as well, including Canada,[25] Australia[43] and parts of Europe.[44] The increasing popularity of patient navigation models to address gaps in care for populations with complex care needs has informed the rise in navigation programmes to support people with injury-related trauma.[40 44]

The role of the patient navigator in this review was consistent with patient navigation programmes across other populations and condition types. For example, most roles involve the navigator referring clients to programmes, resources and services; providing education and information resources; supporting care coordination; and advocating on behalf of patients.[15 18] In several programmes in this review, the navigator not only provided support to the patient and caregiver, but also to members of the care team. There are many reasons why trauma teams may require the additional support of a patient navigator. Trauma teams are multidisciplinary and often required to make quick decisions, sometimes with partial or inaccurate information.[45 46] Team membership also changes from patient to patient, depending on patient needs.[46] In these circumstances, coordination can be a challenge and the addition of a patient navigator may help to address this challenge.

Consistent with programmes supporting populations with complex care needs, most trauma navigators were registered nurses.[47] Individuals with complex care needs often require hospitalisations, multiple appointments with specialists, as well as visits to the emergency department.[48] Additionally, they experience numerous care transitions and are often vulnerable to gaps in care.[18] Patients who experience injury-related trauma are often complex and require thorough knowledge and expertise, which may benefit from the support of a registered nurse.

Nurses bring with them an understanding of clinical care and experience working in collaborative teams, which can facilitate integrating a navigator role within the care team.[49]

Notably, not all navigator roles in this review were filled by nurses. Research suggests that the role of navigator can be played by both professionals (eg, a registered nurse or social worker) or a peer or person with lived experience.[14 50 51] According to Reid *et al*,[14] navigator type (professional vs peer) is less important than their personality and experience. Navigators with a professional background can be better suited to programmes that serve a more diverse population, whereas lay navigators can be beneficial when it is important that firsthand experiences align with the circumstances of the population being served.[14] Findings from this review reinforce these results. While most navigators were nurses, the experience of lay navigators was viewed as equally valuable to programme implementation. These were programmes that supported people who were marginalised, many of whom did not have insurance, where building trust and understanding were necessary to retaining and supporting patients. This reflects patient navigation's original goals. When patient navigation was first conceptualised it was designed to address health disparities affecting poor, uninsured, and underinsured individuals and help them navigate the healthcare system.[42]

In terms of impact, consistent with other navigation programmes, articles included in this review reported increased satisfaction with care, improvements in patient care, and increased access to services and resources.[52–57] Most programmes reported reduced hospital readmission rates, reduced length of stay in hospital, reduced complications and increased participation in rehabilitation. Unplanned 30-day readmissions after traumatic injury are linked to a doubling in risk of death within 1 year and a tripling of per-patient expense.[58] According to previous research, improving care coordination and integrating care can reduce short-term readmissions.[59] Research findings from a community-based patient navigation programme for patients who experience traumatic brain injury demonstrated a reduction in readmission rates, as well as falls.[19]

There were a range of barriers to programme implementation and delivery, many of which have been reported in other patient navigation programmes. For example, other patient navigation programmes have reported similar barriers with recruitment and outreach.[60 61] Some programmes serving other populations reported facing initial and ongoing difficulties coordinating with partners and other stakeholders,[60 62–64] due to an absence of clear communication across team members.[64] While not identified as a barrier in this review, other programmes have reported barriers around coordination with primary care providers and other team members.[62 65]

As in this review, programmes have reported barriers around geography, as well as providing resources at an appropriate language level and connecting clients who are low-income to resources—in this review, uninsured or underinsured populations.[65–68] For those who face gaps in coverage, this becomes another version of 'navigation to nowhere', a documented challenge in patient navigation that demonstrates a wider, systemic issue.[66 67] Namely, that there are no resources to navigate clients to. Regarding the studies included in this review, it is not entirely the same, as the resources exist, but people are still prevented from accessing them.[37]

In terms of resource challenges, other patient navigation programmes have reported barriers related to a lack of funding for services to support the navigation programme.[69] In particular, patient navigation programmes serving other populations have reported that securing funding for navigators can be a challenge.[43 66 70] To address the barrier of salary cost to support a nurse in the position of navigator, a navigation programme serving people with dementia employed lay navigators to ensure the programme's affordability.[71] However, this may not be an option for programmes that require professional expertise, such as a nurse or a social worker. Notably, the materials included in this review listed funding as a facilitator, as they had access to it.

This review reported on several facilitators to programme implementation and delivery. Among these, collaboration and communication with members of the care team, other providers across sectors and services, as well as hospital staff, is reflected in findings from studies looking at navigation programmes that support other populations and conditions, such as those who live with mental illness.[43 66 72–74] Other studies reported collaboration, centralisation and integration of services, better communication, and more sharing of information as facilitators.[69] Implementing navigator programmes requires communication across disciplines, services, and administrations.[42] A study of hospital-based patient navigation programmes found multiple facilitators, such as ownership and accountability, champions to support the programme, agreement that patient navigators address a distinct need in the healthcare system and an appropriate implementation climate. However, effective communication is a key factor throughout and has the power to shift each of these from facilitators to barriers.[75] Effective communication is necessary to motivate and promote buy-in, especially for stakeholders and staff doubtful of or resistant to the implementation or development of patient navigation programmes.[75]

In terms of flexible communication and accessible services, research has suggested that a client-centred approach to navigation improved programme delivery.[69] A flexible model allows the client to contact the navigator how and when they need it. This can be especially beneficial for patients who experience injury-related trauma, considering the complexity of their needs.

Relatedly, in terms of resources, space for meeting clients has been reported as a facilitator.[43 76] Availability of space affects the amount of time navigators can spend with clients, as it can facilitate private and confidential

conversations and allow navigators to spend more time with clients.[43 76] This review found that space and whether navigators had enough, acted as either a barrier[35] or a facilitator.[36] In this context, space also acts as a facilitator to open and patient-centred communication.

Strengths and limitations

This scoping review provides useful information for individuals and organisations engaged in developing or implementing patient navigation programmes for patients who experience injury-related trauma, their caregivers, and the care team. There were several similarities across programmes, which suggest a general trend in programmes of this nature that this scoping review was able to capture.

While this review excluded case management programmes, some of the characteristics of the programmes from included sources still overlapped with case management. A scoping review examining both patient navigation and case management found many similarities and differences in both their backgrounds and roles across a variety of contexts.[15] The previous literature has reported that a defining difference between patient navigators and case managers is navigators' provision of informational support, instead of clinical care.[15 40] The programmes in our review had patient navigation as their main role, yet a few also provided some clinical care. Two programmes in this review reported the navigators carried out clinical duties, while also liaising with case managers, indicating that the programmes themselves differentiated between these roles.[36 38] Nurses filled many of the navigator roles for these programmes, as traumatic injuries require active and continual monitoring, which may lead to a blurring of the lines given their broad scope of practice. Notably, one programme reported providing psychosocial support to patients and families and another programme provided medication reconciliation. And yet these programmes still fell more in line with patient navigation programmes rather than case management, as the main focus of their role was navigation. Given the inclusion criteria of our definition of patient navigation programmes, we recognise that relevant articles may have been excluded from this review. Of note, there was limited literature on patient navigation programmes for those who experience violent injury. This may be due to a lack of relevant programmes in the literature or that existing programmes do not focus mainly on patient navigation and were thus excluded.

Another limitation is that this scoping review only located references from one country. Although patient navigation is common both in and outside the USA, it has not been implemented equally across all patient groups. As such, there is a lack of both published and grey literature on patient navigation for injury-related trauma. Moreover, it is possible that articles were missed due to differences in how patient navigation and injury-related trauma are conceptualised around the world. This limitation may also be related to having only included articles published in English and French, given the linguistic capabilities of the reviewers. The search strategy of five databases and a grey literature review, while thorough, may still have missed some relevant sources. A final limitation to this paper was that, because we did not pull from any primary data, we could only interpret the information available in the included records.

CONCLUSION

People who experience injury-related trauma are often complex, requiring extensive support and care from multiple providers. This population faces many challenges, which can result in poorer health outcomes. Patient navigation is a model of care integration that can address some of these challenges and can result in improved patient experiences and reduced hospital readmissions. While patient navigation is an emerging model of care for people who experience injury-related trauma and their caregivers, this scoping review pulls together 11 articles reporting on 10 patient navigation programmes that support this population. All programmes were located in the USA and most articles are from the past 5 years. Programmes provided referrals to services and resources both in hospital and community; education; care coordination; and discharge planning. Reported impact, barriers, and facilitators were consistent with findings from other studies on patient navigation. To the best of our knowledge, this work has not been completed prior to this review. The results can inform the development and implementation of similar programmes in trauma centres and support changes in policy to improve the delivery of care.

includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

ORCID iD
Shelley Doucet http://orcid.org/0000-0003-4420-8199

REFERENCES

1. World Health Organization. Injuries and violence [Internet], 2021. Available: https://www.who.int/news-room/fact-sheets/detail/injuries-and-violence [Accessed 03 Feb 2022].
2. Perry A, Mallah MD, Cunningham KW, *et al*. Pathway to success: implementation of a multiprofessional acute trauma health care team decreased length of stay and cost in patients with neurological injury requiring tracheostomy. *J Trauma Acute Care Surg* 2020;88:176–9.
3. Braaf S, Ameratunga S, Nunn A, *et al*. Patient-identified information and communication needs in the context of major trauma. *BMC Health Serv Res* 2018;18:1.
4. Catchpole KR, Gangi A, Blocker RC, *et al*. Flow disruptions in trauma care handoffs. *J Surg Res* 2013;184:586–91.
5. McNutt MK, Kale AC, Kitagawa RS, *et al*. Management of blunt cerebrovascular injury (BCVI) in the multisystem injury patient with contraindications to immediate anti-thrombotic therapy. *Injury* 2018;49:67–74.
6. Forster AJ, Clark HD, Menard A, *et al*. Adverse events among medical patients after discharge from hospital. *CMAJ* 2004;170:345–9.
7. Gotlib Conn L, Zwaiman A, DasGupta T, *et al*. Trauma patient discharge and care transition experiences: identifying opportunities for quality improvement in trauma centres. *Injury* 2018;49:97–103.
8. Marwitz JH, Cifu DX, Englander J, *et al*. A multi-center analysis of rehospitalizations five years after brain injury. *J Head Trauma Rehabil* 2001;16:307–17.
9. Fakhry SM, Ferguson PL, Olsen JL, *et al*. Continuing trauma: the unmet needs of trauma patients in the Postacute care setting. *Am Surg* 2017;83:1308–14.
10. Gabbe BJ, Sleney JS, Gosling CM, *et al*. Patient perspectives of care in a regionalised trauma system: lessons from the Victorian state trauma system. *Med J Aust* 2013;198:149–52.
11. Kimmel LA, Holland AE, Hart MJ, *et al*. Discharge from the acute hospital: trauma patients' perceptions of care. *Aust Health Rev* 2016;40:625.
12. Fillion L, Cook S, Veillette A-M, *et al*. Professional navigation framework: elaboration and validation in a Canadian context. *Oncol Nurs Forum* 2012;39:E58–69.
13. Freeman HP, Rodriguez RL. History and principles of patient navigation. *Cancer* 2011;117:3537–40.
14. Reid AE, Doucet S, Luke A. Exploring the role of lay and professional patient navigators in Canada. *J Health Serv Res Policy* 2020;25:229–37.
15. Kelly KJ, Doucet S, Luke A. Exploring the roles, functions, and background of patient navigators and case managers: a scoping review. *Int J Nurs Stud* 2019;98:27–47.
16. Sullivan C, Leon JB, Sayre SS, *et al*. Impact of navigators on completion of steps in the kidney transplant process: a randomized, controlled trial. *Clin J Am Soc Nephrol* 2012;7:1639–45.
17. Loskutova NY, Tsai AG, Fisher EB, *et al*. Patient Navigators connecting patients to community resources to improve diabetes outcomes. *J Am Board Fam Med* 2016;29:78–89.
18. Doucet S, Luke A, Splane J, *et al*. Patient navigation as an approach to improve the integration of care: the case of NaviCare/SoinsNavi. *Int J Integr Care* 2019;19:7.
19. Rosario ER, Espinoza L, Kaplan S, *et al*. Patient navigation for traumatic brain injury promotes community re-integration and reduces re-hospitalizations. *Brain Inj* 2017;31:1340–7.
20. Hopkins J, Mumber MP. Patient navigation through the cancer care continuum: an overview. *J Oncol Pract* 2009;5:150–2.
21. Colquhoun HL, Levac D, O'Brien KK, *et al*. Scoping reviews: time for clarity in definition, methods, and reporting. *J Clin Epidemiol* 2014;67:1291–4.
22. Doucet S, Luke A, Anthonisen G, *et al*. Hospital-based patient navigation programmes for patients who experience injury-related trauma and their caregivers: a scoping review protocol. *BMJ Open* 2022;12:e055750.
23. National Institute of General Medical Sciences. Physical Trauma [Internet], 2020. Available: https://nigms.nih.gov/ [Accessed 20 Jun 2022].
24. Bastawrous M. Caregiver burden--a critical discussion. *Int J Nurs Stud* 2013;50:431–41.
25. Luke A, Doucet S, Azar R. Paediatric patient navigation models of care in Canada: an environmental scan. *Paediatr Child Health* 2018;23:e46–55.
26. Doucet S, Luke A, Anthonisen G, *et al*. Patient navigation programs for people with dementia, their caregivers, and members of their care team: a scoping review protocol. *JBI Evid Synth* 2022;20:270–6.
27. Spiegelman D. Evaluating public health interventions: 1. examples, definitions, and a personal note. *Am J Public Health* 2016;106:70–3.
28. Centers for Disease Control and Prevention. Types of Evaluation [Internet]. Division of STD Prevention. Available: https://www.cdc.gov/std/Program/pupestd/Types%20of%20Evaluation.pdf
29. Aitken ME, Korehbandi P, Parnell D, *et al*. Experiences from the development of a comprehensive family support program for pediatric trauma and rehabilitation patients. *Arch Phys Med Rehabil* 2005;86:175–9.
30. Emerson L, Bussey D, Rennison J. *Trauma navigation: putting the broken pieces back together is no accident*, 2017: 1.
31. Tyrrell R, Hall EC. *Decreasing readmissions rates using transitional care coordination model*. Michigan: Michigan Trauma Coalition, 2018. https://mtqip.org/sites/default/files/downloads/180516%20Transitional%20Care%20Hall.pdf
32. Hartwell J, Albanese K, Retterer A, *et al*. A trauma patient advocate is a valuable addition to the multidisciplinary trauma team: a process improvement project. *Am Surg* 2016;82:183–5.
33. Jimenez N, Fuentes M, Virtue A, *et al*. Feasibility and acceptability of a Telephone-Based intervention for Hispanic children to promote treatment adherence after traumatic brain injury: a pilot study. *J Head Trauma Rehabil* 2021;36:274–81.
34. Kelleher C, Keller K. Patient Navigator Program [Internet]. Using Patient Navigators and Education to Improve Post-Acute Transitions (organized by the American Hospital Association (AHA) Section for Long-Term Care and Rehabilitation), 2016. Available: https://www.aha.org/system/files/content/16/160517ltcrcall.pdf [Accessed cited 2021 Dec 17].
35. Richardson JB, Wical W, Kottage N, *et al*. The challenges and strategies of Affordable care act Navigators and In-Person Assisters with Enrolling uninsured, Violently injured young black men into healthcare insurance coverage. *Am J Mens Health* 2021;15:155798832110055.
36. Whiteaker K. Implementing a Trauma Nurse Navigator [Internet]. Erlanger Health System, 2020. Available: https://regroup-production.s3.amazonaws.com/documents/ReviewReference/395559147/whiteaker3-implementing_a_tr.pdf?AWSAccessKeyId=AKIAJBZQODCMKJA4H7DA&Expires=1639757597&Signature=XK0nzow1P3%2FV8QBLSonFdwzknUg%3D [Accessed 17 Dec 2021].
37. McRoberts CM, Bohlen N, Wills HE. Bridging the gap: utilizing a pediatric trauma care coordinator to reduce disparities for pediatric trauma follow-up care. *J Trauma Nurs* 2019;26:193–8.
38. Northeast Georgia Medical Center. Trauma: Annual Report 2020 [Internet]. Georgia, United States, 2021. Available: https://www.nghs.com/wp-content/uploads/2021/07/Trauma-Annual-Report-2021.pdf [Accessed 17 Dec 2021].
39. Tyrrell R, Gregory J, Regan K, *et al*. *Decreasing readmission rates: a nursing led initiative*. Portland, Oregon: TraumaCon, 2018.
40. McBrien KA, Ivers N, Barnieh L, *et al*. Patient navigators for people with chronic disease: a systematic review. *PLoS One* 2018;13:e0191980.
41. Hodges S. Patient navigation: justifiable popularity? *Tex Med Cent Diss ProQuest* 2014:1–87.
42. Cantril C, Haylock PJ. Patient navigation in the oncology care setting. *Semin Oncol Nurs* 2013;29:76–90.
43. Valaitis RK, Carter N, Lam A, *et al*. Implementation and maintenance of patient navigation programs linking primary care with community-based health and social services: a scoping literature review. *BMC Health Serv Res* 2017;17:116.
44. Budde H, Williams G, Scarpetti G, *et al*. *What are patient navigators and how can they improve integration of care? Report No.: 44*. Copenhagen Ø, Denmark: World Health Organization, 2022. https://apps.who.int/iris/rest/bitstreams/1404871/retrieve
45. Brazil V, Purdy E, Alexander C, *et al*. Improving the relational aspects of trauma care through translational simulation. *Adv Simul* 2019;4:10.

46 Yun S, Faraj S, Sims HP. Contingent leadership and effectiveness of trauma resuscitation teams. *J Appl Psychol* 2005;90:1288–96.

47 Carter N, Valaitis RK, Lam A, *et al*. Navigation delivery models and roles of navigators in primary care: a scoping literature review. *BMC Health Serv Res* 2018;18:96.

48 Kirk S. Transitions in the lives of young people with complex healthcare needs. *Child Care Health Dev* 2008;34:567–75.

49 Gilbert JE, Green E, Lankshear S, *et al*. Nurses as patient navigators in cancer diagnosis: review, consultation and model design. *Eur J Cancer Care* 2011;20:228–36.

50 Wells KJ, Nuhaily S. Models of patient navigation. In: *Patient navigation*. Springer, 2018: 27–40.

51 Jandorf L, Cooperman JL, Stossel LM, *et al*. Implementation of culturally targeted patient navigation system for screening colonoscopy in a direct referral system. *Health Educ Res* 2013;28:803–15.

52 Balaban RB, Zhang F, Vialle-Valentin CE, *et al*. Impact of a Patient Navigator Program on Hospital-Based and Outpatient Utilization Over 180 Days in a Safety-Net Health System. *J Gen Intern Med* 2017;32:981–9.

53 Eliacin J, Fortney SK, Rattray NA, *et al*. Patients' and caregivers' perspectives on healthcare navigation in central Indiana, USA after brain injury. *Health Soc Care Community* 2022;30:988–97.

54 Kanekar S, Petereit D. Walking forward: a program designed to lower cancer mortality rates among American Indians in Western South Dakota. *S D Med* 2009;62:151–9.

55 Kelley L, Capp R, Carmona JF, *et al*. Patient navigation to reduce emergency department (ED) utilization among Medicaid insured, frequent ED users: a randomized controlled trial. *J Emerg Med* 2020;58:967–77.

56 Kwan JL, Morgan MW, Stewart TE, *et al*. Impact of an innovative inpatient patient navigator program on length of stay and 30-day readmission. *J Hosp Med* 2015;10:799–803.

57 Yee LM, Martinez NG, Nguyen AT, *et al*. Using a patient navigator to improve postpartum care in an urban women's health clinic. *Obstet Gynecol* 2017;129:925–33.

58 Hall EC, Tyrrell R, Scalea TM, *et al*. Trauma transitional care coordination: protecting the most vulnerable trauma patients from hospital readmission. *Trauma Surg Acute Care Open* 2018;3:e000149.

59 Verhaegh KJ, MacNeil-Vroomen JL, Eslami S, *et al*. Transitional care interventions prevent Hospital readmissions for adults with chronic illnesses. *Health Aff* 2014;33:1531–9.

60 Galvin JE, Tolea MI, George N, *et al*. Public–private partnerships improve health outcomes in individuals with early stage Alzheimer's disease. *Clin Interv Aging* 2014;9:621–30.

61 McAiney CA, Hillier LM, Stolee P, *et al*. 'Throwing a lifeline': the role of First Link™ in enhancing support for individuals with dementia and their caregivers. *Neurodegener Dis Manag* 2012;2:623–38.

62 Amjad H, Wong SK, Roth DL, *et al*. Health Services Utilization in Older Adults with Dementia Receiving Care Coordination: The MIND at Home Trial. *Health Serv Res* 2018;53:556–79.

63 Judge KS, Bass DM, Snow AL, *et al*. Partners in dementia care: a care coordination intervention for individuals with dementia and their family caregivers. *Gerontologist* 2011;51:261–72.

64 Lee L, Hillier LM, Harvey D. Integrating community services into primary care: improving the quality of dementia care. *Neurodegener Dis Manag* 2014;4:11–21.

65 Bernstein A, Merrilees J, Dulaney S, *et al*. Using care navigation to address caregiver burden in dementia: a qualitative case study analysis. *Alzheimers Dement* 2020;6:e12010.

66 Anderson JE, Larke SC. Navigating the mental health and addictions maze: a community-based pilot project of a new role in primary mental health care. *Ment Health Fam Med* 2009;6:15–19.

67 Anderson JE, Larke SC. The Sooke navigator project: using community resources and research to improve local service for mental health and addictions. *Ment Health Fam Med* 2009;6:21–8.

68 Dohan D, Schrag D. Using navigators to improve care of underserved patients. *Cancer* 2005;104:848–55.

69 Carter N, Valaitis R, Feather J, *et al*. An environmental scan of health and social system navigation services in an urban Canadian community. *SAGE Open Nurs* 2017;3:237796081668956.

70 Palinkas LA, Ell K, Hansen M, *et al*. Sustainability of collaborative care interventions in primary care settings. *Journal of Social Work* 2011;11:99–117.

71 Possin KL, Merrilees J, Bonasera SJ, *et al*. Development of an adaptive, personalized, and scalable dementia care program: early findings from the care ecosystem. *PLoS Med* 2017;14:e1002260.

72 McCann TV, Clark E. Adopting care Provider–Facilitator roles: community mental health nurses and young adults with an early episode of schizophrenia. *Soc Theory Health* 2005;3:39–60.

73 Mullins CD, Shaya FT, Blatt L, *et al*. A qualitative evaluation of a citywide community health partnership program. *J Natl Med Assoc* 2012;104:53–60.

74 Spiro A, Oo SA, Marable D, *et al*. A unique model of the community health worker: the MGH chelsea community health improvement team. *Fam Community Health* 2012;35:147–60.

75 Kokorelias KM, Gould S, Das Gupta T, *et al*. Implementing patient navigator programmes within a hospital setting in Toronto, Canada: a qualitative interview study. *J Health Serv Res Policy* 2022;27:313–20.

76 Ferrante JM, Cohen DJ, Crosson JC. Translating the patient navigator approach to meet the needs of primary care. *J Am Board Fam Med* 2010;23:736–44.

77 Page MJ, McKenzie JE, Bossuyt PM, *et al*. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71.