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# Patient navigators facilitating access to primary care: A scoping review

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<tr>
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Title page

Title of the article

Patient navigators facilitating access to primary care: A scoping review

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Key words

Access to health care, Patient navigation, Patient-centred care, Primary care

Word count

3,224
Abstract

Objective

Patient navigators are a promising mechanism to link patients with primary care. While navigators have been used in population health promotion and prevention programs, their impact on access to primary care is not clear. The aim of this scoping review was to examine the use of patient navigators to facilitate access to primary care; how they were defined and described, their components, and the extent to which they were patient-centred.

Setting and Participants

We used the Arksey and O’Malley scoping review method. Searches were conducted in MEDLINE, Embase, ProQuest Medical, other key databases, and grey literature, for studies reported in English from January 2000 – April 2016. We defined a patient navigator as a person or process creating a connection or link between a person needing primary care and a primary care provider. Our target population was people without a regular source of, affiliation or connection with primary care. Studies were included if they reported on participants who were connected to primary care by patient navigation, and attended or made an appointment with a primary care provider. Data analysis involved descriptive numerical summaries and content analysis.

Results

Twenty studies were included in the final scoping review. Most studies referred to “patient navigator” or “navigation” as the mechanism of connection to primary care. As such, we grouped the components according to Freeman’s nine-principle framework of patient navigation. Seventeen studies included elements of patient-centred care: informed and involved patient, receptive and responsive health professionals, and a coordinated, supportive health care environment.
Conclusions

Patient navigators may assist to connect people requiring primary care to appropriate providers and extend the concept of patient-centred care across different health care settings. Navigation requires further study to determine impact and cost-effectiveness, and explore the experience of patients and their families.
Article summary

Strengths and limitations of this study
- This is the first scoping review to explore how patient navigators are defined, described and used to facilitate access to primary care for people without an affiliation to a primary care provider.
- Comprehensive overview of sources covering peer-reviewed and grey literature
- Sources were included only if the outcome of the navigation was reported; sources describing patient navigation without reporting of outcomes were excluded
- Exploration of patient-centredness of the sources a unique addition to the descriptions of patient navigators.
INTRODUCTION

Primary care is the first level of access to health care, delivered in the community most often by family physicians or general medical practitioners. However, not all people access primary care that best meets their health care needs, where and when they need it. Some people, such as those living in poverty, with a long-term disability, from a culturally and linguistically diverse background, or located in rural and remote areas, have difficulty accessing primary care services and resources.

Access to health care is the opportunity to reach and obtain appropriate health care in situations of perceived need. Access to primary care is important to reduce health care disparities, mortality, morbidity, hospitalisation rates, and health care costs. Recent reforms to primary care have focused on trialling new processes and models of care to improve access. These include integrated care models, after-hours telephone consultations, walk-in centres and nurse-led initiatives. However, disparities in care remain for many, such as people having low literacy and numeracy, cognitive deficits, being a member of a marginalized group or not understanding the need for primary care.

A new approach to improve access to primary care is patient navigation, a process where a person (navigator) engages with a patient to determine barriers to care and provides information to improve access to components of the health system, not just primary care. A patient navigator has been described as a type of ‘broker’, and the role includes a range of instrumental and relational functions and processes to not only support patients to access primary care but directly identify providers willing to treat vulnerable people requiring care. Originating in the 1990s, patient navigation developed as a strategy to reduce barriers to breast cancer care. Patient navigators have been used for the screening of various cancers and through the cancer care continuum, with mixed success.

Patient-centred care is a core element of primary care and facilitates access to appropriate care. In primary care, patient-centred care consists of interactions and relationships between providers and patients to share information, explore values and preferences, facilitate access to appropriate care...
and, address health care disparities. There are over 25 proposed patient-centred care frameworks or models in healthcare. Epstein et al. described three key factors that patient-centred care relies on: an informed and involved patient, receptive and responsive health professionals, and a coordinated, supportive health care environment.

While navigators have been used in population health promotion and prevention programs, their impact on access to primary care is not clear. Therefore, we performed a scoping review of the use of patient navigation to facilitate access to primary care, and the extent to which identified interventions were patient-centred.

**METHODS**

We chose the scoping review method to map the extent, range and nature of published research on the use of patient navigation to further understand how it links people to primary care. When compared to systematic reviews, scoping reviews address broader topics and are less reliant on detailed research questions or quality assessments. The work was structured around the five stages of the Arksey and O’Malley framework: (1) identify the research question, (2) identify relevant studies, (3) study selection, (4) chart the data, and (5) collate, summarize and report the results. The review was also informed by Levac et al’s refinements to Arksey and O’Malley’s framework.

**Stage 1: Identify the research question**

Patient navigation has been defined as a “process, by which an individual, a patient navigator, guides patients in overcoming barriers to health care services access to facilitate timely access to care.”

We expanded this definition to include a patient navigator as a person or process creating a connection or link between a person needing primary care and a primary care provider.

Our target population was people without a regular source of or affiliation or connection with primary care. The outcomes of interest were the person needing care attended an appointment or
made contact with the referred primary care provider. These definitions helped us to clarify the focus of the review, confirm the inclusion criteria adopted and establish parameters for the search strategy. We asked three questions to guide the scoping review:

1. How have patient navigators been defined and described in connecting people to primary care?
2. What are the components of the patient navigation programs?
3. To what extent has patient-centredness been incorporated into the design, implementation and analysis of patient navigation programs?

Stage 2: Identify relevant studies

We identified relevant studies through a search of electronic databases, grey literature, and reference lists of key articles sourced (Supplementary File 1).

A three-step search strategy was used. Firstly, we undertook an initial limited search of MEDLINE, Embase and CINAHL using terms and variants of “navigator”, “broker”, “link worker” and “community health worker”. We analysed the text in the titles and abstracts of retrieved studies and index terms used to refine key terms. The terms most common were related to navigation, linkage, and access to care. We completed a second search of the same databases and extended the search to include related medical and social science databases and grey literature using the key terms and variants (Table 1) identified by the initial search strategy (Supplementary File 2).
Finally, we checked the reference lists of all identified studies (and their citations) for additional studies.

**Stage 3: Study selection**

Inclusion criteria were applied as a basis for which studies were considered relevant to the review questions. Studies were included if they:

- Were published in English from January 2000-May 2016. The start date of 2000 was chosen as reforms of primary care commenced around this time along with the emergence of navigator-type approaches;
- Reported on patients who did not have a regular source of primary care (provider or practice);
- Connected patients to primary care by a process (for example, navigation) or a person (for example, navigator); and,
• Reported an outcome of patients attending or making at least one appointment with primary care providers.

We excluded studies if they originated in countries who were not members of the Organisation for Economic Cooperation and Development (OECD), as their primary care systems differ significantly from those of OECD countries. Other exclusion criteria were applied to studies where:

• Patients lived in residential care, or incarcerated with no imminent release date, as their primary care needs were assumed to be met by institutional providers;
• A navigator was attached to a primary care provider or practice as this indicated the patient was already connected to primary care; and,
• A navigator referred patients to health screening or assessment services only, and not to a primary care provider.

The first author reviewed titles and abstracts of studies, and GR independently reviewed abstracts where there was uncertainty for inclusion.

Stage 4: Chart the data

Data extracted was entered into a form developed in Microsoft Excel specifically for this review. Information on authors, year of publication, study location and context, aims or purpose of the research, study type or design, population and sample size, methodology, conceptual model, intervention type and duration, measures used, and key findings were recorded on this form. We also extracted data relevant to the research questions: definitions and descriptions of navigators, components of navigator programs, and elements of patient-centred care. Charting the data was an iterative process that we updated as studies revealed useful data categories. Studies were reviewed a number of times to ensure all relevant data was captured.
Stage 5: Collate, summarize and report the results

We analysed the data using descriptive numerical summaries and content analysis of the text. This helped to highlight the major themes and report the results in relation to the review questions.

RESULTS

Our initial search terms generated 6,355 records from electronic databases and grey literature. We removed 664 duplicates, leaving 5,691 records to be screened. Of these, 5,613 records were excluded based on the title and/or abstract review, as they were not relevant to the question or originated in non-OECD countries. Of the remaining 78 records, full-text review excluded 44 where participants were not linked to primary care and 16 where participants already had a primary care provider or did not indicate a need for primary care. We searched references and citations of the remaining 18 records, adding two additional studies. This resulted in 20 selected for inclusion in the scoping review. The selection process is shown in the flow chart (Figure 1).

Of the 20 included studies, three reported on the same randomized controlled trial at different phases. These three studies were counted as unique studies as each reported on different elements of the same trial: preliminary findings, qualitative analysis of interviews, and longitudinal findings.

Eleven studies were descriptions or evaluations of programs, eight were intervention studies, and one was a retrospective study. Thirteen were programs based in emergency departments, six were community-based programs, and one was delivered in an inpatient setting. All studies were conducted in the United States. Table 2 outlines characteristics of the included studies.
<table>
<thead>
<tr>
<th>Author</th>
<th>Context</th>
<th>Study type</th>
<th>Population and sampling</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bishop</td>
<td>Homeless shelter</td>
<td>Description</td>
<td>Homeless people attending health fair at shelter or soup kitchen</td>
<td>Volunteer navigator completed short training course, engaged person by building relationships, assessed needs, guided to providers, translated confusing information, coordinated follow-up, empowered people to understand health system and self-care.</td>
</tr>
<tr>
<td>Chan</td>
<td>Emergency department</td>
<td>Non-randomized, non-blinded trial</td>
<td>Patients assessed by emergency physician in area served by 3 community-based primary care clinics</td>
<td>Internet-based referral system between emergency department electronic medical record and clinic and allowed emergency physicians to give patients follow-up appointments at clinics.</td>
</tr>
<tr>
<td>Doran</td>
<td>Emergency department</td>
<td>Quasi-experimental trial</td>
<td>Adults with low-acuity intervention or usual care based on where care expected to result in least</td>
<td>Patient navigator escorted patients from emergency waiting room to clinic in same building. Patients assigned physician who addressed current problems and established care plan and given card with physician’s name and clinic telephone number.</td>
</tr>
<tr>
<td>Study</td>
<td>Setting</td>
<td>Study Design</td>
<td>Population</td>
<td>Intervention</td>
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<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Elliott</td>
<td>Emergency department</td>
<td>Retrospective</td>
<td>Patients discharged and referred to transitional care</td>
<td>Transitional care clinic staff worked with patients to determine preferences and locate convenient, appropriate provider and made new appointment with chosen provider.</td>
</tr>
<tr>
<td>Gany</td>
<td>JFK International Airport</td>
<td>Description</td>
<td>Convenience sample of taxi drivers waiting in airport holding lot</td>
<td>Health care access and case management to link taxi drivers to health insurance enrolment and providers.</td>
</tr>
<tr>
<td>Griswold</td>
<td>Comprehensive Psychiatric Emergency Program</td>
<td>Randomized controlled trial</td>
<td>Adults with psychiatric disorder</td>
<td>Care navigator trained in interviewing and case management provided information about low-cost care; facilitated access, reinforced patient education, information to providers about patient’s history, follow-up, peer connections to access community and social services.</td>
</tr>
<tr>
<td>Horwitz</td>
<td>Level 1 urban trauma centre</td>
<td>Randomized study</td>
<td>Uninsured adults</td>
<td>Health Promotion Advocates in emergency department assisted patients to choose provider, gave brochure,</td>
</tr>
</tbody>
</table>
faxed information to case worker at selected clinic. Clinic case worker contacted patient to make appointment.

<table>
<thead>
<tr>
<th>Author</th>
<th>Setting</th>
<th>Type</th>
<th>Data Description</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kahn</td>
<td>Medicaid managed care organisation</td>
<td>Evaluation</td>
<td>New members completing mailed survey (n=368)</td>
<td>Telephone case managers made at least three contact attempts to ensure linkage to provider.</td>
</tr>
<tr>
<td>Kangovi</td>
<td>2 teaching hospitals</td>
<td>Two-armed, single-blind, randomly numbered, randomized clinical trial enrolled (n=446)</td>
<td>Newly-admitted inpatients</td>
<td>Community health workers (trained lay people of similar backgrounds to patients, selected based on personality traits patients identified as important) set goals, supported goal achievement, connected to provider.</td>
</tr>
<tr>
<td>Kim</td>
<td>5 hospital emergency departments</td>
<td>Evaluation</td>
<td>Merged data set (hospital discharge, clinic, navigator referral data) (n=10,761)</td>
<td>Patient navigators of various backgrounds based in clinics or hospitals spoke with or telephoned patients referred by emergency providers.</td>
</tr>
<tr>
<td>Marr</td>
<td>Emergency department</td>
<td>Evaluation</td>
<td>Patients approached by navigator (n=7,185)</td>
<td>Patient navigator recruited from community, trained in emergency department, visited patients waiting for medical care or before discharge, offered referral within 19-clinic system.</td>
</tr>
<tr>
<td>Study</td>
<td>Setting</td>
<td>Description</td>
<td>Patients</td>
<td>Patient Navigators</td>
</tr>
<tr>
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<tr>
<td>Overholser</td>
<td>Specialist outpatient clinics of tertiary teaching hospital</td>
<td>Patients with sickle cell disease referred by specialists (n=21)</td>
<td>Patient navigators of various backgrounds trained in navigation proactively sought local providers and established network through outreach, made appointments with patients, sent reminders, educated on importance of primary care.</td>
<td></td>
</tr>
<tr>
<td>Treadwell</td>
<td>Community centre</td>
<td>African American men at risk for or diagnosed with diabetes or in poor health; recruited at community event (n=42)</td>
<td>6-week community-based, culturally-responsive, gender-specific health prevention program delivered by community health workers, trusted community members provided links between health system and community.</td>
<td></td>
</tr>
<tr>
<td>Wang</td>
<td>Ethnically-diverse community health centre</td>
<td>Patients with diabetes and/or hypertension not seen by provider in 6 months (n=215)</td>
<td>Patient navigator trained in chronic illness education, motivational interviewing, appointment scheduling. Telephoned patients, built rapport, educated patients, made appointment with provider, assessed need for specialist referrals, identified barriers to access, assisted to overcome barriers.</td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>Setting</td>
<td>Type</td>
<td>Description</td>
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</tr>
<tr>
<td>Wexler(^54)</td>
<td>Emergency department</td>
<td>Randomized controlled trial</td>
<td>Patients whose physician confirmed visit non-urgent, completed baseline survey, randomly assigned (n=148)</td>
<td></td>
</tr>
<tr>
<td>ED navigators</td>
<td>Emergency departments of 8-hospital system</td>
<td>News article</td>
<td>Health plan members with non-urgent problems</td>
<td></td>
</tr>
<tr>
<td>Navigator reduces readmissions, inappropriate ED visits(^55)</td>
<td>Emergency department</td>
<td>News article</td>
<td>Patients with non-urgent problems</td>
<td></td>
</tr>
<tr>
<td>ED navigators help patients find a hospital emergency PCP(^57)</td>
<td>Small community hospital emergency department</td>
<td>News article</td>
<td>Patients admitted through emergency department and patients not admitted</td>
<td></td>
</tr>
</tbody>
</table>

*Emergency department electronic medical record to make appointment at clinic based on patient location and preference. Patient given appointment reminder card and directions to clinic. Electronic message to clinic with information about patient and appointment.*

*Navigator with customer service background assigned members to provider and made appointments.*

*Community health outreach coordinator/navigator of varying cultures representing patients served. Met patient in emergency department, coordinated appointments, and set up patients up in medical homes.*

*Navigator worked with patients to discuss discharge and help facilitate follow-up appointments.*
Patient navigators: Definition and descriptions

One study defined patient navigation as a “process, by which an individual, a Patient Navigator, guides patients in overcoming barriers to health care services access to facilitate timely access to care”\(^{36}\).

The studies provided either a description of a navigator (person) or, for three of the studies, navigation process\(^{43,45,54}\). Descriptions varied in detail and often consisted of the type of person recruited as a navigator, the tasks they performed, and the training provided (Table 2).

Patient navigation program components

All of the studies outlined components of their programs; four provided detailed descriptions\(^{39-41,49}\).

We grouped components according to Freeman’s consensus-based nine-principle framework of patient navigation, originally developed in response to the expansion of patient navigation as a community-based intervention\(^{16,58,59}\). These principles have been widely used in patient navigation programs. Each of these principles is outlined below with examples from the studies selected that included sufficient information to inform each principle in the framework.

**Principle 1: Patient-centred health care service delivery model**

Seventeen of the studies outlined aspects of patient-centred care. This will be discussed further in the section addressing research question three.

**Principle 2: Integration of a fragmented healthcare system**

This principle relates to a patient experiencing a seamless, timely flow through the continuum of care\(^ {16}\). We also included another principle (Principle 8: Connect disconnected health care systems) here, as the two are similar concepts and this has been done previously\(^ {60}\). We focused on connections to primary care, not on a continuum of care through stages of illness or disease. Two examples of integration in our scoping review were assisting patients to understand the entire
health system\textsuperscript{42}, and linking the emergency department with a primary care provider, as well as to community dental, mental health, substance abuse and other social services\textsuperscript{51}.

In addition, key stakeholders (including potential participants) were engaged through health fairs\textsuperscript{42}, teaching emergency department physicians to use a new health information technology system\textsuperscript{43}, and clinics increasing capacity and expanding hours\textsuperscript{50}.

**Principle 3: Elimination of barriers**

This principle is most effectively carried out through relationships with patients\textsuperscript{16}. While removing barriers to accessing primary care appears implicit in a navigator program, not all studies provided detail of what the barriers were and how they were addressed. One exception of note is the Step on It! intervention at JFK International Airport, which focused on the barriers taxi drivers faced. This intervention went to the airport holding lot, assisted drivers to locate providers with flexible hours, culturally and linguistically appropriate models of care, and at low-cost\textsuperscript{46}. Another study described a program that helped adults with sickle cell disease find primary care\textsuperscript{52}. The barriers addressed included patients not understanding why they needed a primary care provider when they already had a specialist, low literacy, difficulty filling out forms and forgetting appointments. These navigators used motivational interviewing to identify further barriers and help patients set priorities beyond accessing primary care\textsuperscript{52}.

**Principle 4: Clear scope of practice**

Three studies provided detail about the role and responsibilities of the navigator\textsuperscript{36,49,52}. The most detailed of these was a randomized clinical trial by Kangovi et al.\textsuperscript{49}, providing a website link (http://chw.upenn.edu) containing protocols for recruitment, training and standardized work practices for navigators, organisational directors and managers.

Kangovi et al.\textsuperscript{49} created a community health worker model and tested its effect on post-hospital outcomes among general medical inpatients. This was based on qualitative participatory action
research and had detailed protocols including standardized work practices in three stages: goal setting, goal support, and connection with primary care. A substantial component was to build relationships with patients to help set goals for recovery, develop an individualized action plan, and liaise between the patient and inpatient care team. The worker provided tailored support based on the patient goals. Patients were connected to primary care and coached to make and attend appointments independently. Provider resources included a discharge summary and the patient’s action plan taken to the appointment.

**Principle 5: Cost-effective**

None of the studies evaluated the cost-effectiveness of their program.

**Principle 6: Defined level of skill**

Nine studies provided information on the skill level required of the navigators. This ranged from volunteers with in-house training, staff with customer service backgrounds, to college-accredited navigators. They were trained on topics such as navigation processes, disease-specific content such as diabetes education, or motivational interviewing. Similarly, seven studies presented ways in which development of resources informed the intervention. These included a needs assessment, software development, community-based participatory action research and provider collaboration to develop and test navigation mechanisms.

**Principle 7: Defined beginning and end**

Eleven studies outlined definite points at which navigation began and ended. Entry usually involved meeting a patient (in the emergency department or on a hospital ward, for example) to schedule an appointment. End points of the interventions included “patient has an appointment made” or “patient sees provider”.

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Principle 8: Connect disconnected healthcare systems

This principle was combined with a similar principle, (Principle 2 Integration of a fragmented healthcare system) for the purposes of this review.

Principle 9: Coordinated system

This principle relates to having an assigned coordinator to oversee all aspects of the intervention. This was evident in two studies: where navigators served as executive officers on a governing board and were supervised by a social worker as well as having weekly team meetings.

Patient navigation: patient-centredness

Our third question for this review was, ‘To what extent has patient-centredness been incorporated into the design, implementation and analysis of patient navigation programs?’ We focused on the three factors upon which patient-centred care depends: informed and involved patient, receptive and responsive health professionals, and a coordinated, supportive health care environment.

Seventeen studies included at least one of the three factors. Table 3 indicates the number of studies and some examples of approaches to patient-centred care for each of the three factors. The columns of the table indicate whether patient-centredness was included in the design, implementation, or analysis phase of patient navigation programs.
<table>
<thead>
<tr>
<th>Patient-centred care factor</th>
<th>Design phase examples</th>
<th>Implementation phase examples</th>
<th>Analysis phase examples</th>
<th>Total studies*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients informed and involved in their care</td>
<td>2 studies: user-friendly and culturally-sensitive health materials; bilingual, bicultural community members</td>
<td>17 studies: information to patient on difference between emergency and primary care; identified barriers to access and help to overcome barriers</td>
<td>0 studies</td>
<td>19</td>
</tr>
<tr>
<td>Receptive and responsive health professionals</td>
<td>3 studies: clinics added capacity for walk-in appointments, navigator visited clinics to provide information and establish working relationship</td>
<td>6 studies: after connection, navigator worked with provider to schedule other visits as per care plan; assisted with patient education and follow-up</td>
<td>2 studies: providers wanted to continue in program; information to providers more complete and accessible than previously</td>
<td>11</td>
</tr>
<tr>
<td>Coordinated, supportive health care environment</td>
<td>4 studies: Collaborative organisation linked to emergency department with 18 clinics; each hospital adopted unique</td>
<td>1 study: emergency physicians encouraged to establish relationships with clinics</td>
<td>1 study: community mobilized around population health issues through increased local media attention</td>
<td>6</td>
</tr>
</tbody>
</table>
*Some studies included more than one instance of the patient-centred factor in more than one phase of the intervention.

Of note, the Kangovi et al. study had an explicit patient-centred focus. The intervention prioritised relationship building with patients through goal setting and development of action plans, liaising with inpatient staff to ensure the patient’s goals were at the forefront, and giving the action plan to a provider the patient chose based on needs and preferences.

Similarly, in the three studies reporting the same randomized controlled trial, Griswold et al. used a care navigator to connect patients with a history of psychiatric crisis to primary care. The navigator built relationships by meeting with patients routinely while admitted and also at primary care appointments, and maintaining regular contact via phone or in person. The navigator would take the patient to the appointment and reinforce any education provided. Patients were informed of low-cost clinics and further assistance was provided through coordinating follow-up and connecting patients to peer and social services. Provider resources included information to clinics on discharge diagnosis, medications and mental health treatment site referral.

Other studies included the three factors yet did not explicitly state patient-centredness as a driver.

**DISCUSSION**

Our scoping review identified 20 studies that described patient navigation to connect patients to primary care. Most programs had components that could be included in a framework of patient navigation, and 17 of the 20 studies included factors inherent to patient-centred care in their design, implementation or analysis. Patients were almost always connected to primary care by a patient navigator (person), indicating a relational approach to making the connection is key.
The level of detail in descriptions of the studies varied; this variation has been reported elsewhere. This presents challenges in clearly characterizing navigators and understanding what they do. Similarly, while there is no generally accepted definition of patient navigation, there is a call for descriptions of the tasks navigators do and the networks of contacts they use to support their actions.

Generally, programs adhered to published criteria for patient-centred care. Although not overtly stated as an aim, almost all studies incorporated at least one of the three patient-centred care factors: an informed and involved patient, receptive and responsive health professionals, and a coordinated, supportive health care environment. We found these mostly in the implementation of the programs, to a lesser degree in the design phase and mentioned in only three studies in the analysis. Our assertion that a navigator is patient-centred focusing on connections and relationships has some merit.

This scoping review has several limitations. Although a scoping review is iterative and involves revisiting the research question and key terms during searches, our search strategy may have missed studies that described programs with specific population groups, for example, refugees or children. This is because information in the title and abstract of relevant studies may not have overtly referred to access to primary care, and improving access may have been a by-product of the reported intervention (for example, access to health prevention programs).

Studies describing programs, but not reporting on our explicit outcomes, were not included. While this strategy contributed to a more focused search, studies that reported the implementation of programs but not outcomes are missing.

Implications for practice

The impact of navigators or navigation on access to primary care is not clear. The studies included in the review used navigators in a range of settings, from emergency departments, inpatient wards,
outpatient services, and in the community. While we did not report on the studies' effectiveness, using patient navigation to improve access to primary care may have merit, particularly using a navigator (person) rather than a process, such as an electronic system. For providers and organisations wanting to link vulnerable people to primary care in a patient-centred way, navigators may assist in this process.

Future research

Despite the interest in using patient navigators to connect people to primary care, many of the studies included were program descriptions with little evidence to indicate a sustainable impact or effectiveness. Analysis of cost effectiveness, while not a focus of this review, was nevertheless absent in the cited studies. As the concept of navigator continues to show promise, models and frameworks are required to measure impact and give direction to settings interested in using this intervention.

CONCLUSION

Patient navigators may be used across health care settings to improve access to care. Navigators are inherently patient-centred due to their relational approach and ability to connect people to primary care. Interventions to improve access to primary care require further study to determine their impact and cost-effectiveness.
Acknowledgements

Nil

Funding

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Competing interests

None declared.

Contributors

AP involved in writing protocol, searches, screening, extraction, drafting of results and writing of manuscripts. VL and TB involved in content expert input (methodology) and editing manuscripts. GR oversaw the project, assisted with screening, content expert input, drafting of results and editing of manuscripts.

Data sharing statement

Further details on studies included in this scoping review can be retrieved by contacting the corresponding author at annette.peart@monash.edu.

References


Figure 1. Flow Chart

1058x595mm (96 x 96 DPI)
Supplementary File 1

Databases searched
MEDLINE/PubMed
Embase
CINAHL
AMED
PsycINFO
Cochrane Library
Scopus
Web of Science Core Collection
ProQuest Dissertations & Theses
CIRRIE
PLoS
ProQuest Central

Grey literature sources
Agency for Healthcare Research and Quality National Guideline Clearinghouse
http://www.guideline.gov

Australian Commission on Safety and Quality in Health Care http://www.safetyandquality.gov.au


British Library E-theses Online Service http://ethos.bl.uk/Home.do

Canadian Institute for Health Information https://www.cihi.ca/en

Canadian Institutes of Health Research http://www.cihr-irsc.gc.ca/e/193.html

Centers for Disease Control and Prevention Wonder database http://wonder.cdc.gov/welcome.html
Commonwealth Fund [http://www.commonwealthfund.org/]


Health Improvement and Innovation Resource Center [http://www.hiirc.org.nz]

Health Issues Center [http://www.healthissuescenter.org.au]

Health Systems Evidence [http://www.healthsystemsevidence.org/]

Institute for Clinical Evaluative Sciences [http://www.ices.on.ca/]

Institute for Healthcare Improvement [http://www.ihi.org/Pages/default.aspx]

Kings Fund [http://www.kingsfund.org.uk/]

MacColl Center for Health Care Innovation [http://maccollcenter.org/]

National Collaborating Centers for Public Health [http://www.nccph.ca/2/home.ccns]

National Institute for Health and Care Excellence [https://www.nice.org.uk/]


Networked Digital Library of Theses and Dissertations [http://ndltd.org]


NHS Sustainable Improvement Team (formerly Improving Quality) [http://www.nhsiq.nhs.uk/]

For peer review only - http://bmjopen.bmj.com/site/about/guidelines.xhtml
Nuffield Trust http://www.nuffieldtrust.org.uk/

Open Grey http://opengrey.eu

Primary Health Care Research and Information Service http://www.phcris.org.au/researchevidence/


The Change Foundation http://www.changefoundation.com/

The Health Foundation http://www.health.org.uk

The Henry J. Kaiser Family Foundation http://kff.org/

The National Academies of Sciences Engineering Medicine, Health and Medicine Division http://www.nationalacademies.org/hmd/


Theses Canada http://www.bac-lac.gc.ca/eng/services/theses/Pages/theses-canada.aspx


World Health Organization Primary Health Care http://www.who.int/topics/primary_health_care/en/
Supplementary File 2: Boolean search strategy

Database name and provider: OVID Medline

Search conducted by the first author on 27 April 2016

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<tr>
<td>5</td>
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</tr>
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Patient navigators facilitating access to primary care: A scoping review

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<td>Peart, Annette; Monash University, Department of General Practice; Monash University Lewis, Virginia; La Trobe University, Australian Institute for Primary Care and Aging Brown, Ted; Monash University, School of Primary and Allied Health Care Russell, Grant; Monash University, School of Primary and Allied Health Care</td>
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Title page

Title of the article

Patient navigators facilitating access to primary care: A scoping review

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Grant Russell, Southern Academic Primary Care Research Unit, Monash University, Notting Hill, Australia
Key words

Access to health care, Patient navigation, Patient-centred care, Primary care

Word count

3,224
Abstract

Objective

Patient navigators are a promising mechanism to link patients with primary care. While navigators have been used in population health promotion and prevention programs, their impact on access to primary care is not clear. The aim of this scoping review was to examine the use of patient navigators to facilitate access to primary care; how they were defined and described, their components, and the extent to which they were patient-centred.

Setting and Participants

We used the Arksey and O’Malley scoping review method. Searches were conducted in MEDLINE, Embase, ProQuest Medical, other key databases, and grey literature, for studies reported in English from January 2000 – April 2016. We defined a patient navigator as a person or process creating a connection or link between a person needing primary care and a primary care provider. Our target population was people without a regular source of, affiliation or connection with primary care. Studies were included if they reported on participants who were connected to primary care by patient navigation, and attended or made an appointment with a primary care provider. Data analysis involved descriptive numerical summaries and content analysis.

Results

Twenty studies were included in the final scoping review. Most studies referred to “patient navigator” or “navigation” as the mechanism of connection to primary care. As such, we grouped the components according to Freeman’s nine-principle framework of patient navigation. Seventeen studies included elements of patient-centred care: informed and involved patient, receptive and responsive health professionals, and a coordinated, supportive health care environment.
Conclusions

Patient navigators may assist to connect people requiring primary care to appropriate providers and extend the concept of patient-centred care across different health care settings. Navigation requires further study to determine impact and cost-effectiveness, and explore the experience of patients and their families.
Article summary

Strengths and limitations of this study

- This is the first scoping review to explore how patient navigators are defined, described and used to facilitate access to primary care for people without an affiliation to a primary care provider.

- It is a comprehensive overview of sources covering peer-reviewed and grey literature.

- Sources were included only if the outcome of the navigation was reported; sources describing patient navigation without reporting of outcomes were excluded.

- Including a description of patient-centredness of the sources is a unique addition to this review of patient navigators.
INTRODUCTION

Primary care is the first level of access to health care, delivered in the community most often by family physicians or general medical practitioners. However, not all people access primary care that best meets their health care needs, where and when they need it. Some people, such as those living in poverty, with a long-term disability, from a culturally and linguistically diverse background, or located in rural and remote areas, have difficulty accessing primary care services and resources.

Access to health care is the opportunity to reach and obtain appropriate health care in situations of perceived need. Access to primary care is important to reduce health care disparities, mortality, morbidity, hospitalisation rates, and health care costs. Recent reforms to primary care have focused on trialling new processes and models of care to improve access. These include integrated care models, after-hours telephone consultations, walk-in centres and nurse-led initiatives. However, disparities in care remain for many, such as people having low literacy and numeracy, cognitive deficits, being a member of a marginalized group or not understanding the need for primary care.

A new approach to improve access to primary care is patient navigation, a process where a person (navigator) engages with a patient to determine barriers to care and provides information to improve access to components of the health system, not just primary care. A patient navigator has been described as a type of ‘broker’, who uses a biopsychosocial approach to provide a range of instrumental and relational functions and processes to not only support patients to access primary care but directly identify providers willing to treat vulnerable people requiring care.

Patient navigator tasks can include educating patients about early symptoms of cancer (in preventive care) or facilitating and coordinating appointments with providers to improve access to a regular primary care provider. Originating in the 1990s, patient navigation developed as a strategy to reduce barriers to breast cancer care. Since then, patient navigators have been used for the screening of various cancers and through the cancer care continuum, with mixed success. In primary care, navigators may have a role in improving access and coordination of care, especially for
vulnerable populations whose access to care may be compromised by a range of geographic, demographic, socioeconomic or cultural characteristics\textsuperscript{28}.

Patient-centred care is a core element of high-quality primary care, facilitates access to appropriate care\textsuperscript{11}, and has been identified as one of six areas of focus for improving health care systems\textsuperscript{29}. In primary care, patient-centred care consists of interactions and relationships between providers and patients to share information, explore values and preferences, facilitate access to appropriate care, and address health care disparities\textsuperscript{30,31}. While numerous frameworks of patient-centred care have been described\textsuperscript{32}, Epstein’s\textsuperscript{11} succinct model of patient-centred care comprising: an informed and involved patient, receptive and responsive health professionals, and a coordinated, supportive health care environment, sits well within the context of patient navigation and its extension beyond the patient-clinician relationship to the setting in which care is delivered.

While navigators have been used in population health promotion and prevention programs\textsuperscript{33,34}, there has been recent interest in their use in facilitating access to primary care for vulnerable people without a regular primary care provider\textsuperscript{28}. Understanding the components of these programs can assist those interested in designing or implementing similar programs. Therefore, we performed a scoping review of the use of patient navigation to facilitate access to primary care. Given its importance and relevance to navigation, we included an additional focus on the extent to which identified patient navigation interventions were patient-centred.

**METHODS**

We chose the scoping review method to map the extent, range and nature of published research on the use of patient navigation to further understand how it links people to primary care\textsuperscript{35}. When compared to systematic reviews, scoping reviews address broader topics and are less reliant on detailed research questions or quality assessments\textsuperscript{35}. The work was structured around the five stages of the Arksey and O’Malley framework: (1) identify the research question, (2) identify relevant studies, (3) study selection, (4) chart the data, and (5) collate, summarize and report the
results. The review was also informed by Levac et al’s.\(^{36}\) refinements to Arksey and O’Malley’s framework.

**Stage 1: Identify the research question**

Patient navigation has been defined as a “process, by which an individual, a patient navigator, guides patients in overcoming barriers to health care services access to facilitate timely access to care”\(^{37}\). We expanded this definition to include a patient navigator as a person or process creating a connection or link between a person needing primary care and a primary care provider.

Our target population was people without a regular source of or affiliation or connection with primary care. The outcome of interest was the person needing care attended an appointment or made contact with the referred primary care provider. These definitions helped us to clarify the focus of the review, confirm the inclusion criteria adopted and establish parameters for the search strategy\(^{36}\). This review did not focus on the impact or effectiveness of patient navigation programs in this context. We asked three questions to guide the scoping review:

1. How have patient navigators been defined and described in connecting people who are unattached to primary care to a primary care provider for regular care?
2. What are the components of these patient navigation programs?
3. To what extent has patient-centredness been incorporated into the design, implementation and analysis of patient navigation programs?

**Stage 2: Identify relevant studies**

We identified relevant studies through a search of electronic databases, grey literature, and reference lists of key articles sourced (Supplementary File 1).

A three-step search strategy was used. Firstly, we undertook an initial limited search of MEDLINE, Embase and CINAHL using terms and variants of “navigator”, “broker”, “link worker” and “community health worker”. We analysed the text in the titles and abstracts of retrieved studies and...
index terms used to refine key terms. The terms most common were related to navigation, linkage, and access to care. We completed a second search of the same databases and extended the search to include related medical and social science databases and grey literature using the key terms and variants (Table 1) identified by the initial search strategy (Supplementary File 2).
Table 1: Key search terms

<table>
<thead>
<tr>
<th>Concept, program or intervention</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navigator/navigation</td>
<td>Community health</td>
</tr>
<tr>
<td>Patient navigator/navigation</td>
<td>Family practice/practitioner</td>
</tr>
<tr>
<td>Peer navigator/navigation</td>
<td>General practice/practitioner</td>
</tr>
<tr>
<td>Broker</td>
<td>Primary care</td>
</tr>
<tr>
<td>Health broker</td>
<td>Primary health care</td>
</tr>
<tr>
<td>Health services broker</td>
<td></td>
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<tr>
<td>Community health worker</td>
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</tr>
<tr>
<td>Community navigator/navigation</td>
<td></td>
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<tr>
<td>Lay health worker</td>
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<tr>
<td>Linkage to care</td>
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</tbody>
</table>

Finally, we checked the reference lists of all identified studies (and their citations) for additional studies.

Stage 3: Study selection

Inclusion criteria were applied as a basis for which studies were considered relevant to the review questions. Studies were included if they:

- Were published in English from January 2000-May 2016. The start date of 2000 reflects the increasing interest in patient-centred care in the last two decades. Reforms of primary care commenced around this time along with the emergence of navigator-type approaches;
- Reported on patients who did not have a regular source of primary care (provider or practice);
- Connected patients to primary care by a process (for example, navigation) or a person (for example, navigator); and,
• Reported an outcome of patients attending or making at least one appointment with primary
care providers.

We excluded studies if they originated in countries who were not members of the Organisation for
Economic Cooperation and Development (OECD), as their primary care systems differ significantly
from those of OECD countries. Other exclusion criteria were applied to studies where:

• Patients lived in residential care, or incarcerated with no imminent release date, as their primary
care needs were assumed to be met by institutional providers;
• A navigator was attached to a primary care provider or practice as this indicated the patient was
already connected to primary care; and,
• A navigator referred patients to health screening or assessment services only, and not to a
primary care provider.

Author 1 reviewed titles and abstracts of studies, and Author 2 independently reviewed abstracts
where there was uncertainty for inclusion.

Stage 4: Chart the data

Data extracted was entered into a template developed in Microsoft Excel specifically for this review.

Information on authors, year of publication, study location and context, aims or purpose of the
research, study type or design, population and sample size, methodology, conceptual model,
intervention type and duration, measures used, and key findings were recorded on this form. We
also extracted data relevant to the research questions: definitions and descriptions of navigators,
components of navigator programs, and elements of patient-centred care. Charting the data was an
iterative process that we updated as studies revealed useful data categories. Studies were
reviewed a number of times to ensure all relevant data was captured.
Stage 5: Collate, summarize and report the results

We collated the data using a Microsoft Excel spreadsheet. Excerpts of text were coded deductively by Author 1 to identify concepts and themes related to the research questions. Author 4 checked the coding scheme and the themes raised.

RESULTS

Our initial search terms generated 6,355 records from electronic databases and grey literature (Figure 1). We removed 664 duplicates, leaving 5,691 records to be screened. Of these, 5,613 records were excluded based on the title and/or abstract review, as they were not relevant to the question, did not meet inclusion criteria, or originated in non-OECD countries. Of the remaining 78 records, full-text review excluded 44 where participants were not linked to primary care and 16 where participants already had a primary care provider or did not indicate a need for primary care.

We searched references and citations of the remaining 18 records, adding two additional studies. This resulted in 20 selected for inclusion in the scoping review. The selection process is shown in the flow chart (Figure 1).

Of the 20 included studies, three reported on the same randomized controlled trial at different phases. These three studies were counted as unique studies as each reported on different elements of the same trial: preliminary findings, qualitative analysis of interviews, and longitudinal findings.

Eleven studies were descriptions or evaluations of programs, eight were intervention studies, and one was a retrospective study. Thirteen were programs based in emergency departments, six were community-based programs, and one was delivered in an inpatient setting. All studies were conducted in the United States. Table 2 outlines characteristics of the included studies.
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<th>Population and sampling</th>
<th>Primary outcome</th>
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<td>Private, non-profit, community homeless shelter</td>
<td>Description of Charlottesville Health Access initiative to enhance access to care</td>
<td>Homeless and near-homeless people, health fair at shelter or soup kitchen</td>
<td>Not stated</td>
<td>Volunteer navigator (student or community member) completed a training course, engaged person by building relationships, assessed health fair at shelter or soup kitchen needs, guided to providers, translated confusing information, coordinated follow-up, empowered people to understand health system and self-care.</td>
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<tr>
<td>Chan</td>
<td>Emergency department in low-income, urban area served by 3 community clinics</td>
<td>Non-randomized, non-blinded interventional trial to improve primary care access for underserved patients</td>
<td>Patients with no primary care provider assessed by emergency physician to benefit from clinic</td>
<td>Clinic visit within 14 days</td>
<td>Internet-based secure referral system between emergency department medical record and clinic appointment systems. System accessed clinic availability and...</td>
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<tr>
<td>Authors</td>
<td>Type</td>
<td>Setting</td>
<td>Intervention</td>
<td>Comparator</td>
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<tr>
<td>Doran</td>
<td>Quasi-experimental trial</td>
<td>Urban, public, safety-net hospital emergency department with primary care clinic in same building complex</td>
<td>Trained patient navigator escorted patients from emergency waiting room to clinic. Patients assigned to physician who addressed current problems, established care plan and gave card with name and clinic telephone number.</td>
<td>Clinic visit within 1 year</td>
<td>follow-up (n=326) allowed emergency physicians to give patients follow-up appointments at clinic.</td>
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<tr>
<td>Elliott</td>
<td>Retrospective study</td>
<td>Urban emergency department, serving high proportion of vulnerable medical record</td>
<td>Transitional care clinic staff worked with patients to determine preferences and locate convenient,</td>
<td>Clinic visit as scheduled</td>
<td>Discharged and</td>
</tr>
<tr>
<td>Patients</td>
<td>Abstraction, randomly sampled</td>
<td>Referred to transitional care clinic (n=660)</td>
<td>Appropriate provider and made new appointment with chosen provider.</td>
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<tr>
<td>Gany</td>
<td>Unused parking lot adjacent to JFK</td>
<td>Description of Step On It! workplace intervention to increase health care access in airport holding lot (n=466)</td>
<td>Health care access and case management to link drivers to providers, including referrals to low-cost (or free) culturally-appropriate clinics or hospitals.</td>
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<tr>
<td>Griswold</td>
<td>Urban Comprehensive Psychiatric Emergency Program (psychiatric assessment and management, targeted therapeutic approaches, links to community mental health services) as usual care</td>
<td>Randomized controlled trial comparing linkage with primary care with standard practice after psychiatric assessment and management, targeted psychiatric emergency visit (n=101-175), with no and 12 months information about low-cost care; facilitated access, reinforced patient education, information to providers about patient’s history, follow-up, peer connections to access community and social services.</td>
<td>Care navigator trained in interviewing and case management provided</td>
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<td>Setting</td>
<td>Design</td>
<td>Participants</td>
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<td>Outcomes</td>
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<td>Horwitz</td>
<td>Level 1 urban trauma centre</td>
<td>Randomized study of intensive case management intervention to improve primary care use of uninsured adults presenting to emergency department (n=230), excluding substance abuse or mental health issues only</td>
<td>Health Promotion Advocates in emergency department assisted patients to choose provider, gave brochure, faxed information to case worker at selected clinic. Clinic case worker contacted patient to make appointment.</td>
<td>Primary care clinic visit within 2 months</td>
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<td>Kahn</td>
<td>Medicaid managed care organisation for people with mental health and/or substance abuse diagnoses</td>
<td>Evaluation to assess effectiveness of case management in linking new members with primary care provider completing mailed survey (n=368), referred to case management</td>
<td>Telephone case managers made at least 3 contact attempts to ensure linkage to provider.</td>
<td>Primary care visit within 12 months</td>
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<td>Kangovi</td>
<td>2 urban, academically-2 armed, single-blind, newly-admitted low-income patients</td>
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<td>Primary care</td>
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<td>Affiliated Hospitals</td>
<td>Randomized Clinical Trial to Improve Primary Care Follow-Up Post-Discharge</td>
<td>Income, Uninsured, Or Medicaid Adult Patients Randomly Numbered, Approached Until 3 Per Day Enrolled (n=446)</td>
<td>Lay People of Similar Backgrounds to Patients, Selected for Personality Traits Patients Identified As Important</td>
<td>Set Goals, Supported Goal Achievement, Connected to Provider</td>
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</tbody>
</table>

**Kim**<sup>50</sup>  
5 Hospital Emergency Departments in an Affluent Area with Large and Poor Immigrant Population to Link Patients to 4 Local Primary Care Clinics Across 33 Month Period of Low-Income or Uninsured Patients with No Primary Care Provider (n=10,761)  
**Patient navigators of various backgrounds (most unlicensed, selected for communication skills)**  
Based in Clinics (3 Sites) or Hospitals (2 Sites) Spoke Face-to-Face or Telephoned Patients Referred by Emergency Providers.  
**Marr**<sup>51</sup>  
Urban Emergency Department with High Patient Volume to Connect Patients with Primary Care Provider to Same Clinic  
**Patient navigator (advocate) recruited from community, trained in**
rates of potentially avoidable hospitalizations and lack of community-based care

| Overholser\textsuperscript{52} | Specialist outpatient clinics of urban tertiary teaching hospital | Description of patient navigation program to overcome barriers to finding primary care | Adults with sickle cell disease with no primary care provider visit or not seen regularly by provider, referred by specialist physicians (n=21) | Patient navigators of various backgrounds trained in navigation proactively sought local providers and established network through outreach, made appointments with patients, sent reminders, educated on importance of primary care. |

<p>| Treadwell\textsuperscript{53} | African-American community centre. | Evaluation of Save Our Sons group health education and intervention model to reduce incidence of poor health related to diabetes and/or in primary care | African American men at risk for or diagnosed with diabetes and/or in primary care | 6-week community-based, culturally-responsive, gender-specific health prevention program delivered by community health workers, trusted community members provided links |</p>
<table>
<thead>
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<th>Target Population</th>
<th>Follow-Up</th>
<th>Patient Navigator Activities</th>
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<td>Wang</td>
<td>Community health centre</td>
<td>Evaluation of patient navigation program to optimize health care</td>
<td>Patients with diabetes and/or hypertension</td>
<td>Visit with primary care provider and/or chronic disease nurse within 6 months</td>
<td>Patient navigator trained in chronic illness education, motivational interviewing, appointment scheduling. Telephoned patients, built rapport, educated patients, made appointment with provider, assessed needs for specialist referrals, identified barriers to access, assisted to overcome barriers.</td>
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<tr>
<td>Wexler</td>
<td>Emergency department</td>
<td>Randomized controlled trial comparing health care provider utilization</td>
<td>Medicaid enrollees who did not have visit to primary care provider</td>
<td>Emergency department electronic medical record to make appointment</td>
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</table>
medical centre and affiliated primary care practices information technology intervention to improve access to primary care, usual source of care, emergency physician confirmed visit non-urgent, completed baseline survey, randomly assigned (n=148) at clinic based on patient location and preference. Patient given appointment reminder card and directions to clinic. Electronic message to clinic with information about patient and appointment.

<table>
<thead>
<tr>
<th>ED navigators</th>
<th>Emergency departments of 8-hospital system</th>
<th>News article on use of emergency department</th>
<th>Health plan members with non-urgent problems</th>
<th>Return visit to emergency department by Navigator with customer service background assigned members to provider and made appointments.</th>
<th>Navigator reduces Urban emergency department</th>
<th>News article on community health</th>
<th>Patients with non-urgent problems who Not stated</th>
<th>Community health outreach coordinator/navigator of varying background</th>
</tr>
</thead>
</table>

55 Emergency departments of 8-hospital system: News article on use of emergency department, navigators to re-direct patients with non-urgent problems to patients with non-emergency issues to most appropriate care setting. Navigator reduces Urban emergency department. News article on community health, Patients with non-urgent problems who Not stated. Community health outreach coordinator/navigator of varying background.

57 News article on use of emergency department, navigators to re-direct patients with non-urgent problems to patients with non-emergency issues to most appropriate care setting. Navigator reduces Urban emergency department. News article on community health, Patients with non-urgent problems who Not stated. Community health outreach coordinator/navigator of varying background.
| ED navigators | Urban emergency department | News article on a pilot project to reduce 30-day readmissions and number of self-pay patients who visit emergency department for non-emergent care | Patients without insurance and primary care provider, insured but don’t have a provider, or have a provider but can’t access him or her | 30-day readmission and/or emergency department re-visit within 1 month | Navigator worked with patients to discuss discharge and help facilitate follow-up appointments. |
Patient navigators: Definition and descriptions

One study defined patient navigation as a “process, by which an individual, a Patient Navigator, guides patients in overcoming barriers to health care services access to facilitate timely access to care”\(^3^7\). The studies provided either a description of a navigator (person) or, for three of the studies, navigation process\(^4^3\)\(^4^5\)\(^5^4\). Descriptions varied in detail and often consisted of the type of person recruited as a navigator, the tasks they performed, and the training provided (Table 2).

Patient navigation program components

All of the studies outlined components of their programs; four provided detailed descriptions\(^3^9\)\(^4^1\)\(^4^9\). We grouped components according to Freeman’s consensus-based nine-principle framework of patient navigation, originally developed in response to the expansion of patient navigation as a community-based intervention\(^1^6\)\(^5^8\)\(^5^9\). Freeman started the first patient navigation program in 1990 to reduce barriers to cancer care in Harlem, New York. These principles have been widely used in patient navigation programs. Each of these principles is outlined below with examples from the studies selected that included sufficient information to inform each principle in the framework.

**Principle 1: Patient-centred health care service delivery model**

Seventeen of the studies outlined aspects of patient-centred care. This will be discussed further in the section addressing research question three.

**Principle 2: Integration of a fragmented healthcare system**

This principle relates to a patient experiencing a seamless, timely flow through the continuum of care\(^1^6\). We also included another principle (Principle 8: Connect disconnected health care systems) here, as the two are similar concepts and this has been done previously\(^6^0\). We focused on connections to primary care, not on a continuum of care through stages of illness or disease. Two examples of integration in our scoping review were assisting patients to understand the entire health system\(^4^2\), and linking the emergency department with a primary care provider, as well as to community dental, mental health, substance abuse and other social services\(^5^1\).
Principle 3: Elimination of barriers

This principle is most effectively carried out through relationships with patients\textsuperscript{16}. While removing barriers to accessing primary care appears implicit in a navigator program, not all studies provided detail of what the barriers were and how they were addressed. One exception of note is the Step on It! intervention at JFK International Airport, which focused on the barriers taxi drivers faced. This intervention went to the airport holding lot, assisted drivers to locate providers with flexible hours, culturally and linguistically appropriate models of care, and at low-cost\textsuperscript{46}. Another study described a program that helped adults with sickle cell disease find primary care\textsuperscript{52}. The barriers addressed included patients not understanding why they needed a primary care provider when they already had a specialist, low literacy, difficulty filling out forms and forgetting appointments. These navigators used motivational interviewing to identify further barriers and help patients set priorities beyond accessing primary care\textsuperscript{52}.

Principle 4: Clear scope of practice

Three studies provided detail about the role and responsibilities of the navigator\textsuperscript{37,49,52}. The most detailed of these was a randomized clinical trial by Kangovi et al.\textsuperscript{49}, providing a website link (http://chw.upenn.edu) containing protocols for recruitment, training and standardized work practices for navigators, organisational directors and managers.

Kangovi et al.\textsuperscript{49} created a community health worker model and tested its effect on post-hospital outcomes among general medical inpatients. This was based on qualitative participatory action research and had detailed protocols including standardized work practices in three stages: goal setting, goal support, and connection with primary care. A substantial component was to build relationships with patients to help set goals for recovery, develop an individualized action plan, and liaise between the patient and inpatient care team. The worker provided tailored support based on the patient goals. Patients were connected to primary care and coached to make and attend
appointments independently. Provider resources included a discharge summary and the patient’s action plan taken to the appointment.

**Principle 5: Cost-effective**

None of the studies evaluated the cost-effectiveness of their program.

**Principle 6: Defined level of skill**

Nine studies provided information on the skill level required of the navigators. This ranged from volunteers with in-house training, staff with customer service backgrounds, to college-accredited navigators. They were trained on topics such as navigation processes, disease-specific content such as diabetes education, or motivational interviewing. Similarly, seven studies presented strategies intentionally used to inform the development of resources to support the navigation intervention, including a needs assessment, software development, community-based participatory action research and provider collaboration to develop and test navigation mechanisms.

**Principle 7: Defined beginning and end**

Eleven studies outlined definite points at which navigation began and ended. Entry usually involved meeting a patient (in the emergency department or on a hospital ward, for example) to schedule an appointment. End points of the interventions included “patient has an appointment made” or “patient sees provider”.

**Principle 8: Connect disconnected healthcare systems**

This principle was combined with a similar principle, (*Principle 2 Integration of a fragmented healthcare system*) for the purposes of this review.
Principle 9: Coordinated system

This principle relates to having an assigned coordinator to oversee all aspects of the intervention\textsuperscript{16}. This was evident in two studies: where navigators served as executive officers on a governing board\textsuperscript{42} and were supervised by a social worker as well as having weekly team meetings\textsuperscript{49}.

Patient navigation: patient-centredness

Our third question for this review was, ‘To what extent has patient-centredness been incorporated into the design, implementation and analysis of patient navigation programs?’ We focused on the three factors upon which patient-centred care depends: informed and involved patient, receptive and responsive health professionals, and a coordinated, supportive health care environment\textsuperscript{11}. Seventeen studies included at least one of the three factors. Table 3 indicates the number of studies and some examples of approaches to patient-centred care for each of the three factors. The columns of the table indicate whether patient-centredness was included in the design, implementation, or analysis phase of patient navigation programs.
Table 3 Examples of patient-centredness

<table>
<thead>
<tr>
<th>Patient-centred care factor</th>
<th>Design phase examples</th>
<th>Implementation phase examples</th>
<th>Analysis phase examples</th>
<th>Total studies*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>2 studies: user-friendly and culturally-sensitive health materials; bilingual, bicultural community members</td>
<td>17 studies: provided information to patient on difference between emergency and primary care; identified barriers to access and help to overcome barriers</td>
<td>0 studies</td>
<td>19</td>
</tr>
<tr>
<td>Receptive and responsive</td>
<td>3 studies: clinics added capacity for walk-in appointments, navigator visited clinics to provide information and establish working relationship</td>
<td>6 studies: after connection, navigator worked with provider to schedule other visits as per care plan; assisted with patient education and follow-up</td>
<td>2 studies: providers wanted to continue in program; information to providers more complete and accessible than previously</td>
<td>11</td>
</tr>
<tr>
<td>Coordinated, supportive</td>
<td>4 studies: Collaborative organisation linked emergency department with 18 clinics; each hospital adopted unique</td>
<td>1 study: emergency physicians encouraged to establish relationships with clinics</td>
<td>1 study: community mobilized around population health issues through increased local media attention</td>
<td>6</td>
</tr>
</tbody>
</table>
Some studies included more than one instance of the patient-centred factor in more than one phase of the intervention.

Of note, the Kangovi et al. study had an explicit patient-centred focus. The intervention prioritised relationship building with patients through goal setting and development of action plans, liaising with inpatient staff to ensure the patient’s goals were at the forefront, and giving the action plan to a provider the patient chose based on needs and preferences.

Similarly, in the three studies reporting the same randomized controlled trial, Griswold et al. used a care navigator to connect patients with a history of psychiatric crisis to primary care. The navigator built relationships by meeting with patients routinely while admitted and also at primary care appointments, and maintaining regular contact via phone or in person. The navigator would take the patient to the appointment and reinforce any education provided. Patients were informed of low-cost clinics and further assistance was provided through coordinating follow-up and connecting patients to peer and social services. Provider resources included information to clinics on discharge diagnosis, medications and mental health treatment site referral.

Other studies included the three factors yet did not explicitly state patient-centredness as a driver.

**DISCUSSION**

Our scoping review identified 20 studies that used patient navigation to facilitate access, and connect vulnerable patients without regular primary care, to a primary care provider. All except three studies used a *person* to connect the patient to a provider; the remaining three used a navigation *process*. Most programs described components that could be included in a framework of patient navigation, and 17 of the 20 studies included factors inherent to patient-centred care in their design, implementation or analysis.
The level of detail in descriptions of the studies varied; this variation has been reported elsewhere. In the studies included in this review, different terms were used for the same role: patient or care navigator, advocate, case manager, or community health worker, for example. This presents challenges in clearly characterizing navigators and understanding what they do. Similarly, while there is no generally accepted definition of patient navigation, there is a call for descriptions of the tasks navigators do and the networks of contacts they use to support their actions. Valaitis et al. described the specific activities undertaken by patient navigators: facilitating access to health-related programs, promoting and facilitating continuity of care, identifying and removing barriers to care, and effective and efficient use of the health system. Our findings add to these activities: a key feature of patient navigation to facilitate access to primary care is a relationship-based approach, informing and involving patients in connecting them to care.

The studies in this scoping review included elements that seemed to match the components of Freeman’s patient navigation framework. This indicates the framework may be generalizable to the tasks of connecting vulnerable people without a primary care provider to regular care. An evaluation of these principles used in 10 self-identified breast cancer navigation programs using observation of patient navigator activities found the programs were consistent with individual-level principles (for example eliminating barriers, patient-centred care, integration of care), however program-level principles (for example skill level, scope of practice, coordinated system) were not consistent across the programs. We did not examine this level of detail for our scoping review, however, can see a role for this type of observation-based study to further contribute to this field. Generally, programs adhered to published criteria for patient-centred care. Although not overtly stated as an aim, almost all studies incorporated at least one of the three patient-centred care factors: an informed and involved patient, receptive and responsive health professionals, and a coordinated, supportive health care environment. We found these mostly in the implementation of the programs, to a lesser degree in the design phase and mentioned in only three studies in the analysis.
While these results are encouraging, patient-centred care also requires a service model designed to fit the patient, their needs and preferences, not vice versa\textsuperscript{63,64}. A patient-centred, strengths-based intervention to link adults who are newly-diagnosed as testing positive for HIV to a HIV primary care medical provider found that 111 out of 118 participants attended an appointment within three months of linkage\textsuperscript{65}. This intervention was targeted at participants’ level of individual need, emphasising personal and social connectedness, and promoting positive regard for the primary care encounter as well as the health care system as a whole. These findings reflect the three patient-centred care factors discussed in our scoping review, and support our assertion that a navigator, working with patients unattached to primary care, is patient-centred, with a focus on connections and relationships, has some merit.

This scoping review has several limitations. Although a scoping review is iterative and involves revisiting the research question and key terms during searches, our search strategy may have missed studies that reported on interventions not designed to connect people to primary care, but this connection may have been a secondary outcome of the intervention (for example, access to information on cancer screening may have prompted participants to link in with a primary care provider). Information in the title and abstracts of such studies may not have referred to primary care. This approach, however, allowed us to undertake a more targeted review. Similarly, while our search strategy sought to include all terms we determined could be synonymous with patient navigation, we may have missed studies where different names were used for the same function.

Studies where there was no indication patients attended a primary care appointment were not included in our review. While this strategy contributed to a more focused search, studies that reported the implementation of programs but not outcomes are missing. In addition, all of our included studies originated in the United States which we acknowledge would impact on generalizability. These limitations highlight the need for consistent documentation of processes to improve access to care and the outcomes measured.
We did not look for or report on the effectiveness of the interventions or programs in our included studies. While we are unable to report on the impact, we consider our approach to looking at descriptions and uses of patient navigation in this specific context of connection to primary care, with a focus on patient-centred care, is consistent with the current focus on patient-reported outcome measures and acknowledging the patient experience of care.

This paper contributes to the discussion of access to primary care by considering patient navigation to connect vulnerable populations to providers in three ways. Firstly, we aligned components of the patient navigation studies reviewed to an existing generic navigation framework. This framework appears to be appropriate for considering navigators facilitating access for people without a primary care provider to regular care. Secondly, a relational approach acts as the backdrop to connecting vulnerable people to care, based on principles of patient-centred care. Finally, in the absence of a consistent definition of patient navigation in facilitating access to primary care, we have added to an existing description of patient navigation activities, which will assist clinicians and researchers to design and implement similar programs.

**Implications for practice**

The studies included in the review used navigators in a range of settings, from emergency departments, inpatient wards, outpatient services, and in the community. While we did not report on the studies’ effectiveness, we found that using patient navigation to improve access to primary care may have merit, particularly using a navigator (person) rather than a process, such as an electronic system. For providers and organisations wanting to link vulnerable people to primary care in a patient-centred way, navigators may assist in this process.

**Future research**

Analysis of cost effectiveness, while not a focus of this review, was nevertheless absent in the cited studies. As the concept of navigator continues to show promise, further research is required to
measure impact and give direction to settings interested in using this intervention. For example, the link between patient navigation principles and outcomes of interest require further exploration.

CONCLUSION

Patient navigators may be used across health care settings to improve access to care. Navigators are inherently patient-centred due to their relational approach and ability to connect people to primary care. Interventions to improve access to primary care require further study to determine their impact and cost-effectiveness.
Acknowledgements

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Competing interests

None declared.

Contributors

AP involved in writing protocol, searches, screening, extraction, drafting of results and writing of manuscripts. VL and TB involved in content expert input (methodology) and editing manuscripts. GR oversaw the project, assisted with screening, content expert input, drafting of results and editing of manuscripts.

Data sharing statement

Further details on studies included in this scoping review can be retrieved by contacting the corresponding author at annette.peart@monash.edu.

Figures

Figure 1: Flow of study selection.

References


55. ED navigators connect patients to better venues of care. *ED Manage* 2011;May:53-55.


57. ED navigators help patients find a PCP. *Hosp Case Manage* 2014;22(1):9-10.


Figure 1. Flow of study selection.

108x60mm (300 x 300 DPI)
Supplementary File 1

Databases searched
MEDLINE/PubMed
Embase
CINAHL
AMED
PsycINFO
Cochrane Library
Scopus
Web of Science Core Collection
ProQuest Dissertations & Theses
CIRRIE
PLoS
ProQuest Central

Grey literature sources
Agency for Healthcare Research and Quality National Guideline Clearinghouse
http://www.guideline.gov

Australian Commission on Safety and Quality in Health Care http://www.safetyandquality.gov.au


British Library E-theses Online Service http://ethos.bl.uk/Home.do

Canadian Institute for Health Information https://www.cihi.ca/en

Canadian Institutes of Health Research http://www.cihr-irsc.gc.ca/e/193.html

Centers for Disease Control and Prevention Wonder database http://wonder.cdc.gov/welcome.html
Commonwealth Fund http://www.commonwealthfund.org/

European Observatory on Health Systems and Policies http://www.euro.who.int/en/about-us/partners/observatory

Health Improvement and Innovation Resource Center http://www.hiirc.org.nz

Health Issues Center http://www.healthissuescenter.org.au

Health Systems Evidence http://www.healthsystemsevidence.org/

Institute for Clinical Evaluative Sciences http://www.ices.on.ca/

Institute for Healthcare Improvement http://www.ihi.org/Pages/default.aspx

Kings Fund http://www.kingsfund.org.uk/

MacColl Center for Health Care Innovation http://maccollcenter.org/

National Collaborating Centers for Public Health http://www.nccph.ca/2/home.ccnsp

National Institute for Health and Care Excellence https://www.nice.org.uk/

National Institute for Health and Care Excellence Evidence Search http://www.evidence.nhs.uk


Networked Digital Library of Theses and Dissertations http://ndltd.org

New Zealand Ministry of Health http://www.health.govt.nz

New Zealand Social Policy Evaluation and Research Unit http://www.superu.govt.nz

NHS Sustainable Improvement Team (formerly Improving Quality) http://www.nhsiq.nhs.uk/
Nuffield Trust [http://www.nuffieldtrust.org.uk/]

Open Grey [http://opengrey.eu]

Primary Health Care Research and Information Service [http://www.phcris.org.au/researchevidence/]


Robert Wood Johnson Foundation [http://www.rwjf.org/]

The Change Foundation [http://www.changefoundation.com/]

The Health Foundation [http://www.health.org.uk]

The Henry J. Kaiser Family Foundation [http://kff.org/]

The National Academies of Sciences Engineering Medicine, Health and Medicine Division [http://www.nationalacademies.org/hmd/]

The New York Academy of Medicine Grey Literature Report [http://www.greylit.org/]

Theses Canada [http://www.bac-lac.gc.ca/eng/services/theses/Pages/theses-canada.aspx]


World Health Organization Primary Health Care [http://www.who.int/topics/primary_health_care/en/]
Supplementary File 2: Boolean search strategy

Database name and provider: OVID Medline

Search conducted by the first author on 27 April 2016

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### Patient navigators facilitating access to primary care: A scoping review

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Title page

Title of the article

Patient navigators facilitating access to primary care: A scoping review

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Key words

Access to health care, Patient navigation, Patient-centred care, Primary care

Word count

3,224
Abstract

Objective

Patient navigators are a promising mechanism to link patients with primary care. While navigators have been used in population health promotion and prevention programs, their impact on access to primary care is not clear. The aim of this scoping review was to examine the use of patient navigators to facilitate access to primary care; how they were defined and described, their components, and the extent to which they were patient-centred.

Setting and Participants

We used the Arksey and O’Malley scoping review method. Searches were conducted in MEDLINE, Embase, ProQuest Medical, other key databases, and grey literature, for studies reported in English from January 2000 – April 2016. We defined a patient navigator as a person or process creating a connection or link between a person needing primary care and a primary care provider. Our target population was people without a regular source of, affiliation or connection with primary care. Studies were included if they reported on participants who were connected to primary care by patient navigation, and attended or made an appointment with a primary care provider. Data analysis involved descriptive numerical summaries and content analysis.

Results

Twenty studies were included in the final scoping review. Most studies referred to “patient navigator” or “navigation” as the mechanism of connection to primary care. As such, we grouped the components according to Freeman’s nine-principle framework of patient navigation. Seventeen studies included elements of patient-centred care: informed and involved patient, receptive and responsive health professionals, and a coordinated, supportive health care environment.
Conclusions

Patient navigators may assist to connect people requiring primary care to appropriate providers and extend the concept of patient-centred care across different health care settings. Navigation requires further study to determine impact and cost-effectiveness, and explore the experience of patients and their families.
Article summary

Strengths and limitations of this study

- This is the first scoping review to explore how patient navigators are defined, described and used to facilitate access to primary care for people without an affiliation to a primary care provider.

- It is a comprehensive overview of sources covering peer-reviewed and grey literature.

- Sources were included only if the outcome of the navigation was reported; sources describing patient navigation without reporting of outcomes were excluded.

- The inclusion of a description of the patient-centredness of the sources is a unique addition to this review of patient navigators.
INTRODUCTION

Primary care is the first level of access to health care, delivered in the community most often by family physicians or general medical practitioners. However, not all people access primary care that best meets their health care needs, where and when they need it. Some people, such as those living in poverty, with a long-term disability, from a culturally and linguistically diverse background, or located in rural and remote areas, have difficulty accessing primary care services and resources.

Access to health care is the opportunity to reach and obtain appropriate health care in situations of perceived need. Access to primary care is important to reduce health care disparities, mortality, morbidity, hospitalisation rates, and health care costs. Recent reforms to primary care have focused on trialling new processes and models of care to improve access. These include integrated care models, after-hours telephone consultations, walk-in centres and nurse-led initiatives. However, disparities in care remain for many, such as people having low literacy and numeracy, cognitive deficits, being a member of a marginalized group or not understanding the need for primary care.

A new approach to improve access to primary care is patient navigation, a process where a person (navigator) engages with a patient to determine barriers to care and provides information to improve access to components of the health system, not just primary care. A patient navigator has been described as a type of ‘broker’, who uses a biopsychosocial approach to provide a range of instrumental and relational functions and processes to not only support patients to access primary care but directly identify providers willing to treat vulnerable people requiring care.

Patient navigator tasks can include educating patients about early symptoms of cancer (in preventive care) or facilitating and coordinating appointments with providers to improve access to a regular primary care provider. Originating in the 1990s, Freeman developed patient navigation as a strategy to reduce barriers to breast cancer care in Harlem, New York. Since then, patient navigators have been used for the screening of various cancers and through the cancer care continuum, with mixed success. In primary care, navigators may have a role in improving access.
and coordination of care, especially for vulnerable populations whose access to care may be compromised by a range of geographic, demographic, socioeconomic or cultural characteristics.\(^2\)

Patient-centred care is a core element of high-quality primary care, facilitates access to appropriate care,\(^1\) and has been identified as one of six areas of focus for improving health care systems.\(^2\) In primary care, patient-centred care consists of interactions and relationships between providers and patients to share information, explore values and preferences, facilitate access to appropriate care, and address health care disparities.\(^3\) While numerous frameworks of patient-centred care have been described,\(^4\) Epstein's succinct model of patient-centred care comprising: an informed and involved patient, receptive and responsive health professionals, and a coordinated, supportive health care environment, sits well within the context of patient navigation and its extension beyond the patient-clinician relationship to the setting in which care is delivered.

While navigators have been used in population health promotion and prevention programs,\(^5\) there has been recent interest in their use in facilitating access to primary care for vulnerable people without a regular primary care provider.\(^6\) Understanding the components of these programs can assist those interested in designing or implementing similar programs. Therefore, we performed a scoping review of the use of patient navigation to facilitate access to primary care. Given its importance and relevance to navigation, we included an additional focus on the extent to which identified patient navigation interventions were patient-centred.

**METHODS**

We chose the scoping review method to map the extent, range and nature of published research on the use of patient navigation to further understand how it links people to primary care.\(^7\) When compared to systematic reviews, scoping reviews address broader topics and are less reliant on detailed research questions or quality assessments.\(^8\) The work was structured around the five stages of the Arksey and O’Malley framework: (1) identify the research question, (2) identify relevant studies, (3) study selection, (4) chart the data, and (5) collate, summarize and report the
results. The review was also informed by Levac et al’s.\textsuperscript{36} refinements to Arksey and O’Malley’s framework.

**Stage 1: Identify the research question**

Patient navigation has been defined as a “process, by which an individual, a patient navigator, guides patients in overcoming barriers to health care services access to facilitate timely access to care”\textsuperscript{37}. We expanded this definition to include a patient navigator as a person or process creating a connection or link between a person needing primary care and a primary care provider.

Our target population was people without a regular source of or affiliation or connection with primary care. The outcome of interest was the person needing care attended an appointment or made contact with the referred primary care provider. These definitions helped us to clarify the focus of the review, confirm the inclusion criteria adopted and establish parameters for the search strategy\textsuperscript{36}. This review did not focus on the impact or effectiveness of patient navigation programs in this context. We asked three questions to guide the scoping review:

1. How have patient navigators been defined and described in connecting people who are unattached to primary care to a primary care provider for regular care?
2. What are the components of these patient navigation programs?
3. To what extent has patient-centredness been incorporated into the design, implementation and analysis of patient navigation programs?

**Stage 2: Identify relevant studies**

We identified relevant studies through a search of electronic databases, grey literature, and reference lists of key articles sourced (Supplementary File 1).

A three-step search strategy was used. Firstly, we undertook an initial limited search of MEDLINE, Embase and CINAHL using terms and variants of “navigator”, “broker”, “link worker” and “community health worker”. We analysed the text in the titles and abstracts of retrieved studies and
index terms used to refine key terms. The terms most common were related to navigation, linkage, and access to care. We completed a second search of the same databases and extended the search to include related medical and social science databases and grey literature using the key terms and variants (Table 1) identified by the initial search strategy (Supplementary File 2).
Table 1: Key search terms

<table>
<thead>
<tr>
<th>Concept, program or intervention</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navigator/navigation</td>
<td>Community health</td>
</tr>
<tr>
<td>Patient navigator/navigation</td>
<td>Family practice/practitioner</td>
</tr>
<tr>
<td>Peer navigator/navigation</td>
<td>General practice/practitioner</td>
</tr>
<tr>
<td>Broker</td>
<td>Primary care</td>
</tr>
<tr>
<td>Health broker</td>
<td>Primary health care</td>
</tr>
<tr>
<td>Health services broker</td>
<td></td>
</tr>
<tr>
<td>Community health worker</td>
<td></td>
</tr>
<tr>
<td>Community navigator/navigation</td>
<td></td>
</tr>
<tr>
<td>Lay health worker</td>
<td></td>
</tr>
<tr>
<td>Linkage to care</td>
<td></td>
</tr>
</tbody>
</table>

Finally, we checked the reference lists of all identified studies (and their citations) for additional studies.

**Stage 3: Study selection**

Inclusion criteria were applied as a basis for which studies were considered relevant to the review questions. Studies were included if they:

- Were published in English from January 2000-May 2016. The start date of 2000 reflects the increasing interest in patient-centred care in the last two decades. Reforms of primary care commenced around this time\(^2^9\) along with the emergence of navigator-type approaches\(^3^8\);
- Reported on patients who did not have a regular source of primary care (provider or practice);
- Connected patients to primary care by a process (for example, navigation) or a person (for example, navigator); and,
• Reported an outcome of patients attending or making at least one appointment with primary
  care providers.

We excluded studies if they originated in countries who were not members of the Organisation for
Economic Cooperation and Development (OECD), as their primary care systems differ significantly
from those of OECD countries. Other exclusion criteria were applied to studies where:

• Patients lived in residential care, or incarcerated with no imminent release date, as their primary
care needs were assumed to be met by institutional providers;
• A navigator was attached to a primary care provider or practice as this indicated the patient was
  already connected to primary care; and,
• A navigator referred patients to health screening or assessment services only, and not to a
  primary care provider.

Author 1 reviewed titles and abstracts of studies, and Author 4 independently reviewed abstracts
where there was uncertainty for inclusion.

**Stage 4: Chart the data**

Data extracted was entered into a template developed in Microsoft Excel specifically for this review.

Information on authors, year of publication, study location and context, aims or purpose of the
research, study type or design, population and sample size, methodology, conceptual model,
intervention type and duration, measures used, and key findings were recorded on this form. We
also extracted data relevant to the research questions: definitions and descriptions of navigators,
components of navigator programs, and elements of patient-centred care. Charting the data was an
iterative process that we updated as studies revealed useful data categories. Studies were
reviewed a number of times to ensure all relevant data was captured.
Stage 5: Collate, summarize and report the results

We collated the data using a Microsoft Excel spreadsheet. Excerpts of text were coded deductively by Author 1 to identify concepts and themes related to the research questions. Author 4 checked the coding scheme and the themes raised.

RESULTS

Our initial search terms generated 6,355 records from electronic databases and grey literature (Figure 1). We removed 664 duplicates, leaving 5,691 records to be screened. Of these, 5,613 records were excluded based on the title and/or abstract review, as they were not relevant to the question, did not meet inclusion criteria, or originated in non-OECD countries. Of the remaining 78 records, full-text review excluded 44 where participants were not linked to primary care and 16 where participants already had a primary care provider or did not indicate a need for primary care.

We searched references and citations of the remaining 18 records, adding two additional studies. This resulted in 20 selected for inclusion in the scoping review. The selection process is shown in the flow chart (Figure 1).

Of the 20 included studies, three reported on the same randomized controlled trial at different phases. These three studies were counted as unique studies as each reported on different elements of the same trial: preliminary findings, qualitative analysis of interviews, and longitudinal findings.

Eleven studies were descriptions or evaluations of programs, eight were intervention studies, and one was a retrospective study. Thirteen were programs based in emergency departments, six were community-based programs, and one was delivered in an inpatient setting. All studies were conducted in the United States. Table 2 outlines characteristics of the included studies.
<table>
<thead>
<tr>
<th>Author</th>
<th>Context</th>
<th>Study type</th>
<th>Population and sampling</th>
<th>Primary outcome</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bishop</td>
<td>Private, non-profit, community homeless</td>
<td>Description of</td>
<td>Homeless and near-homeless people,</td>
<td>People connected</td>
<td>Volunteer navigator (student or community member) completed a training course, engaged person by building relationships, assessed health needs, guided to providers, translated confusing information, coordinated follow-up, empowered people to understand health system and self-care.</td>
</tr>
<tr>
<td>Chan</td>
<td>Emergency department in low-income, urban area served by 3 community clinics</td>
<td>Non-randomized, non-blinded interventional trial to improve primary care access for underserved patients</td>
<td>Patients with no primary care provider assessed by emergency physician days to benefit from clinic</td>
<td>Patients follow-up at community clinic within 14 days</td>
<td>Internet-based secure referral system between emergency department medical record and clinic appointment systems. System accessed clinic availability and</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Study</th>
<th>Setting</th>
<th>Study Design</th>
<th>Patient Population</th>
<th>Patient Follow-up</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doran</td>
<td>Urban, public, safety-net hospital emergency department with primary care clinic in same building complex</td>
<td>Quasi-experimental trial to navigate willing patients from emergency waiting room to clinic. Patients assigned to physician who addressed current problems, established care plan and gave card with name and telephone number.</td>
<td>Adults with no primary care provider, presenting with low-acuity problems, assigned to intervention or usual care based on where care expected to result in least delay ($n=965$)</td>
<td>Patients follow-up at primary care clinic within 1 year</td>
<td>Trained patient navigator escorted patients from emergency waiting room to clinic.</td>
</tr>
<tr>
<td>Elliott</td>
<td>Urban emergency department, serving high proportion of vulnerable population</td>
<td>Retrospective study using full electronic medical record</td>
<td>Patients with no primary care provider, discharged and transitional care</td>
<td>Patient completed follow-up visit in transitional care clinic</td>
<td>Transitional care clinic staff worked with patients to determine preferences and locate convenient,</td>
</tr>
</tbody>
</table>

Follow-up ($n=326$) allowed emergency physicians to give patients follow-up appointments at clinics.
<table>
<thead>
<tr>
<th>Patients</th>
<th>abstraction, randomly sampled</th>
<th>referred to transitional care clinic (n=660)</th>
<th>clinic as scheduled appropriate provider and made new appointment with chosen provider.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gany⁴⁶</td>
<td>Unused parking lot adjacent to JFK International Airport’s taxi holding lot</td>
<td>Description of Step On It! workplace intervention to increase health care access (n=466)</td>
<td>Health care access and case management to link drivers to providers, including referrals to low-cost (or free) culturally-appropriate clinics or hospitals.</td>
</tr>
<tr>
<td>Griswold³⁹-⁴¹</td>
<td>Urban Comprehensive Psychiatric Emergency Program (psychiatric assessment and management, targeted therapeutic approaches, links to community mental health services)</td>
<td>Randomized controlled trial comparing linkage with primary care with usual care after psychiatric emergency visit</td>
<td>Adults presenting with psychiatric disorder, with no primary care visited primary provider or, have not seen one within 6 months (n=101-175) Patients Care navigator trained in interviewing and case management provided information about low-cost care; facilitated access, reinforced patient education, information to providers about patient’s history, follow-up, peer connections to access community and social services.</td>
</tr>
<tr>
<td>Author</td>
<td>Type of Healthcare Setting</td>
<td>Description</td>
<td>Participant Characteristics</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>Horwitz</td>
<td>Level 1 urban trauma centre</td>
<td>Randomized study of intensive case management intervention to improve primary care use</td>
<td>Uninsured adults presenting to emergency department, excluding substance abuse or mental health issues only (n=230)</td>
</tr>
<tr>
<td>Kahn</td>
<td>Medicaid managed care organisation for people with mental health and/or substance abuse diagnoses</td>
<td>Evaluation to assess effectiveness of case management in linking new members with primary care provider within 12 months</td>
<td>New members with behavioural health diagnosis and no primary care provider (n=368)</td>
</tr>
<tr>
<td>Author</td>
<td>Setting</td>
<td>Study Design</td>
<td>Study Details</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td>--------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Kangovi</td>
<td>2 urban, academically-affiliated hospitals</td>
<td>2-armed, single-blind, randomized clinical trial</td>
<td>Newly-admitted low-income, uninsured, or Medicaid adult with primary care inpatients randomly approached until 3 per day enrolled (n=446)</td>
</tr>
<tr>
<td>Kim</td>
<td>5 hospital emergency departments in an affluent area with large and poor immigrant population</td>
<td>Analysis of Emergency Department-Primary Care Connect initiative</td>
<td>Merged data set (hospital discharge, clinic, navigator referral data) of low-income or uninsured patients with no primary care provider (n=10,761)</td>
</tr>
<tr>
<td>Marr</td>
<td>Urban emergency</td>
<td>Evaluation of program</td>
<td>Patients with no primary care provider (n=10,761)</td>
</tr>
</tbody>
</table>
 department with high rates of potentially avoidable hospitalizations and lack of community-based primary care providers

Treadwell’s Specialist outpatient clinics of urban tertiary teaching hospital

Overholser’s Patient navigators approach by navigator (n = 7,185) completed 3 or more visits to same clinic across 18-month period recruited from community, trained in emergency department, visited patients waiting for medical care or before discharge, offered referral within 18-clinic system.

Song group health education and coaching at risk or diagnosed with medical condition

Evaluation of Save Our African American community centre.

Treadwell’s 6-week community-based, culturally-responsive gender-specific health promotion program delivered by

Overholser’s Description of patient navigation program to overcome barriers to finding primary care for patients with sickle cell disease with no primary care provider or not seen regularly by specialist, referred by provider, referred or not.

Treadwell’s Adults with sickle cell disease with no primary care provider or not seen regularly by specialist, referred by provider, referred or not.

Overholser’s Patient navigators of various backgrounds trained in navigation proactively sought local providers, and established network through outreach, made appointments with new primary care provider, and established network through outreach, made appointments with new primary care provider.

Treadwell’s Participants (n = 21) African American men

Overholser’s 18-month period patients attending initial visit with new primary care provider with medical home.

Treadwell’s Patient navigators of various backgrounds trained in navigation proactively sought local providers, and established network through outreach, made appointments with new primary care provider, and established network through outreach, made appointments with new primary care provider.

Overholser’s Patients attended more visits to in emergency department, visited by provider, referred to new primary care provider, and established network through outreach, made appointments with new primary care provider, and established network through outreach, made appointments with new primary care provider.

Treadwell’s Diagnosis of patient: Adults with sickle cell disease with no primary care provider or not seen regularly by specialist, referred by provider, referred.

Overholser’s Participants connected to medical home.

Treadwell’s Objectives: Described importance of primary care, educated participants, sent reminders, educated participants, sent reminders, established local providers, and established network through outreach, made appointments with new primary care provider, and established network through outreach, made appointments with new primary care provider.

Overholser’s Patients attended initial visit with new primary care provider within 18-clinic system.

Treadwell’s Patient navigators of various backgrounds trained in navigation proactively sought local providers, and established network through outreach, made appointments with new primary care provider, and established network through outreach, made appointments with new primary care provider.

Overholser’s Participants connected to medical home.
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<table>
<thead>
<tr>
<th>Intervention model to reduce incidence of diabetes and/or obesity, improve regular access to care, and build community networks</th>
<th>Community health workers, trusted community members provided links between health system and community.</th>
</tr>
</thead>
<tbody>
<tr>
<td>recruits at community event (n=42)</td>
<td></td>
</tr>
<tr>
<td>Wang</td>
<td>Community health centre providing comprehensive services to ethnically diverse population with low incomes or uninsured</td>
</tr>
<tr>
<td>Evaluation of patient navigation program to optimize health care utilization to patients with diabetes and/or hypertension not seen by provider in last 6 months</td>
<td>Patient navigator trained in chronic illness education, motivational interviewing, appointment scheduling. Telephoned patients, built rapport, educated patients, made appointment with provider, assessed need for specialist referrals, identified barriers to access, assisted to overcome barriers.</td>
</tr>
<tr>
<td>Wang</td>
<td>Community health centre providing comprehensive services to ethnically diverse population with low incomes or uninsured</td>
</tr>
<tr>
<td>Evaluation of patient navigation program to optimize health care utilization to patients with diabetes and/or hypertension not seen by provider in last 6 months</td>
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</tr>
</tbody>
</table>
Randomized controlled trial comparing health information technology intervention to improve access to primary care, with usual care, to Medicaid enrollees who did not have usual source of care, after discharge at emergency physician confirmed visit non-urgent, completed baseline survey; randomly assigned (n=148) at clinic based on patient location and preference. Patient given appointment reminder card and directions to clinic. Electronic message to clinic with information about patient and appointment. Patients attend emergency department electronic medical record to make appointment at clinic based on patient location and preference. Patient given appointment reminder card and directions to clinic. Electronic message to clinic with information about patient and appointment.

Navigator with customer service background assigned members to provider and made appointments. Patients scheduled to be seen by another provider.
<table>
<thead>
<tr>
<th>Navigator</th>
<th>Urban emergency department</th>
<th>News article on community health outreach worker</th>
<th>Patients with non-urgent problems who don't have a primary care provider, insured but don't have a provider and set up follow-up appointment for a provider but can't access him or her (n=1,500)</th>
<th>Self-pay patients who visit emergency department and or ED navigators help patients find a PCP to reduce 30-day readmissions and number of self-pay patients who visit emergency department</th>
<th>Community health outreach coordinator/navigator of varying cultures representing patients served. Met patient in emergency department, coordinated appointments, and set patients up in medical homes. Navigator worked with patients to discuss discharge and help facilitate follow-up appointments.</th>
</tr>
</thead>
<tbody>
<tr>
<td>reduces readmissions, inappropriate ED visits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Patients without insurance and primary care provider admitted to hospital through emergency department and or ED navigators help patients find a PCP to reduce 30-day readmissions and number of self-pay patients who visit emergency department.
for non-emergent care not admitted (no sample reported)
Patient navigators: Definition and descriptions

One study defined patient navigation as a “process, by which an individual, a Patient Navigator, guides patients in overcoming barriers to health care services access to facilitate timely access to care”\(^\text{37}\). The studies provided either a description of a navigator (person) or, for three of the studies, navigation process\(^\text{43,45,54}\). Descriptions varied in detail and often consisted of the type of person recruited as a navigator, the tasks they performed, and the training provided (Table 2).

Patient navigation program components

All of the studies outlined components of their programs; four provided detailed descriptions\(^\text{39,41,49}\).

We grouped program components according to Freeman’s consensus-based nine-principle framework of patient navigation, originally developed in response to the expansion of patient navigation as a community-based intervention\(^\text{16,58,59}\). These principles have been widely used in patient navigation programs. Each of these principles is outlined below with examples from the studies selected that included sufficient information to inform each principle in the framework.

Principle 1: Patient-centred health care service delivery model

Seventeen of the studies outlined aspects of patient-centred care. This will be discussed further in the section addressing research question three.

Principle 2: Integration of a fragmented healthcare system

This principle relates to a patient experiencing a seamless, timely flow through the continuum of care\(^\text{16}\). We grouped another principle (Principle 8: Connect disconnected health care systems) here with Principle 2, as the two are similar concepts and this has been done previously\(^\text{60}\). All studies in our scoping review reported on these principles grouped together. Two examples of integration in our scoping review were assisting patients to understand the entire health system\(^\text{42}\), and linking the emergency department with a primary care provider, as well as to community dental, mental health, substance abuse and other social services\(^\text{51}\).
Principle 3: Elimination of barriers

This principle is most effectively carried out through relationships with patients. While removing barriers to accessing primary care appears implicit in a navigator program, not all studies provided detail of what the barriers were and how they were addressed. One exception of note is the Step on It! intervention at JFK International Airport, which focused on the barriers taxi drivers faced. This intervention went to the airport holding lot, assisted drivers to locate providers with flexible hours, culturally and linguistically appropriate models of care, and at low-cost. Another study described a program that helped adults with sickle cell disease find primary care. The barriers addressed included patients not understanding why they needed a primary care provider when they already had a specialist, low literacy, difficulty filling out forms and forgetting appointments. These navigators used motivational interviewing to identify further barriers and help patients set priorities beyond accessing primary care.

Principle 4: Clear scope of practice

Three studies provided detail about the role and responsibilities of the navigator. The most detailed of these was a randomized clinical trial by Kangovi et al., providing a website link containing protocols for recruitment, training and standardized work practices for navigators, organisational directors and managers. Kangovi et al. created a community health worker model and tested its effect on post-hospital outcomes among general medical inpatients. This was based on qualitative participatory action research and had detailed protocols including standardized work practices in three stages: goal setting, goal support, and connection with primary care. A substantial component was to build relationships with patients to help set goals for recovery, develop an individualized action plan, and liaise between the patient and inpatient care team. The worker provided tailored support based on the patient goals. Patients were connected to primary care and coached to make and attend appointments.
appointments independently. Provider resources included a discharge summary and the patient’s action plan taken to the appointment.

**Principle 5: Cost-effective**

None of the studies evaluated the cost-effectiveness of their program.

**Principle 6: Defined level of skill**

Nine studies provided information on the skill level required of the navigators. This ranged from volunteers with in-house training, staff with customer service backgrounds, to college-accredited navigators. They were trained on topics such as navigation processes, disease-specific content such as diabetes education, or motivational interviewing. Similarly, seven studies presented strategies intentionally used to inform the development of resources to support the navigation intervention, including a needs assessment, software development, community-based participatory action research and provider collaboration to develop and test navigation mechanisms.

**Principle 7: Defined beginning and end**

Eleven studies outlined definite points at which navigation began and ended. Entry usually involved meeting a patient (in the emergency department or on a hospital ward, for example) to schedule an appointment. End points of the interventions included “patient has an appointment made” or “patient sees provider”.

**Principle 8: Connect disconnected healthcare systems**

This principle was combined with a similar principle, *(Principle 2 Integration of a fragmented healthcare system)*, for the purposes of this review.
**Principle 9: Coordinated system**

This principle relates to having an assigned coordinator to oversee all aspects of the intervention. This was evident in two studies: where navigators served as executive officers on a governing board and were supervised by a social worker as well as having weekly team meetings.

**Patient navigation: patient-centredness**

Our third question for this review was, ‘To what extent has patient-centredness been incorporated into the design, implementation and analysis of patient navigation programs?’ We focused on the three factors upon which patient-centred care depends: informed and involved patient, receptive and responsive health professionals, and a coordinated, supportive health care environment.

Seventeen studies included at least one of the three factors. Table 3 indicates the number of studies and some examples of approaches to patient-centred care for each of the three factors. The columns of the table indicate whether patient-centredness was included in the design, implementation, or analysis phase of patient navigation programs.
<table>
<thead>
<tr>
<th>Patient-centred care factor</th>
<th>Design phase examples</th>
<th>Implementation phase examples</th>
<th>Analysis phase examples</th>
<th>Total studies*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>2 studies: user-friendly and culturally-sensitive health materials; bilingual, bicultural community members</td>
<td>17 studies: provided information to patient on difference between emergency and primary care; identified barriers to access and help to overcome barriers</td>
<td>0 studies</td>
<td>19</td>
</tr>
<tr>
<td>Receptive and responsive health professionals</td>
<td>3 studies: clinics added capacity for walk-in appointments, navigator visited clinics to provide information and establish working relationship</td>
<td>6 studies: after connection, navigator worked with provider to schedule other visits as per care plan; assisted with patient education and follow-up</td>
<td>2 studies: providers wanted to continue in program; information to providers more complete and accessible than previously</td>
<td>11</td>
</tr>
<tr>
<td>Coordinated, supportive health care environment</td>
<td>4 studies: Collaborative organisation linked emergency department with 18 clinics; each hospital adopted unique</td>
<td>1 study: emergency physicians encouraged to establish relationships with clinics</td>
<td>1 study: community mobilized around population health issues through increased local media attention</td>
<td>6</td>
</tr>
</tbody>
</table>
provider arrangement
and approach

*Some studies included more than one instance of the patient-centred factor in more than one phase of the intervention.

The Kangovi et al. study had an explicit patient-centred focus. The intervention prioritised relationship building with patients through goal setting and development of action plans, liaising with inpatient staff to ensure the patient’s goals were at the forefront, and giving the action plan to a provider the patient chose based on needs and preferences.

Similarly, in the three studies reporting the same randomized controlled trial, Griswold et al. used a care navigator to connect patients with a history of psychiatric crisis to primary care. The navigator built relationships by meeting with patients routinely while admitted and also at primary care appointments, and maintaining regular contact via phone or in person. The navigator would take the patient to the appointment and reinforce any education provided. Patients were informed of low-cost clinics and further assistance was provided through coordinating follow-up and connecting patients to peer and social services. Provider resources included information to clinics on discharge diagnosis, medications and mental health treatment site referral.

Other studies included the three factors yet did not explicitly state patient-centredness as a driver.

**DISCUSSION**

Our scoping review identified 20 studies that used patient navigation to facilitate access, and connect vulnerable patients without regular primary care, to a primary care provider. All except three studies used a *person* to connect the patient to a provider; the remaining three used a navigation *process*. Most programs described components that could be included in a framework of patient navigation, and 17 of the 20 studies included factors inherent to patient-centred care in their design, implementation or analysis.
The level of detail in descriptions of the studies varied; this variation has been reported elsewhere. In the studies included in this review, different terms were used for the same role: patient or care navigator, advocate, case manager, or community health worker, for example. This presents challenges in clearly characterizing navigators and understanding what they do. Similarly, while there is no generally accepted definition of patient navigation, there is a call for descriptions of the tasks navigators do and the networks of contacts they use to support their actions. Valaitis et al. described the specific activities undertaken by patient navigators: facilitating access to health-related programs, promoting and facilitating continuity of care, identifying and removing barriers to care, and effective and efficient use of the health system. Our findings add to these activities: a key feature of patient navigation to facilitate access to primary care is a relationship-based approach, informing and involving patients in connecting them to care.

The studies in this scoping review included elements that seemed to match the components of Freeman’s patient navigation framework. This indicates the framework may be generalizable to the tasks of connecting vulnerable people without a primary care provider to regular care. An evaluation of these principles used in 10 self-identified breast cancer navigation programs using observation of patient navigator activities found the programs were consistent with individual-level principles (for example eliminating barriers, patient-centred care, integration of care), however program-level principles (for example skill level, scope of practice, coordinated system) were not consistent across the programs. We did not examine this level of detail for our scoping review, however, can see a role for this type of observation-based study to further contribute to this field. Generally, programs adhered to published criteria for patient-centred care. Although not overtly stated as an aim, almost all studies incorporated at least one of the three patient-centred care factors: an informed and involved patient, receptive and responsive health professionals, and a coordinated, supportive health care environment. We found these mostly in the implementation of the programs, to a lesser degree in the design phase and mentioned in only three studies in the analysis. Our assertion that a
navigator working with patients unattached to primary care is patient-centred, with a focus on connections and relationships, has some merit.

This scoping review has several limitations. Although a scoping review is iterative and involves revisiting the research question and key terms during searches, our search strategy may have missed studies that reported on interventions not designed to connect people to primary care, but where this connection may have been a secondary outcome of the intervention (for example, access to information on cancer screening may have prompted participants to link in with a primary care provider). Additionally, information in the title and abstracts of such studies may not have referred to primary care. This approach, however, allowed us to undertake a more targeted review. Similarly, while our search strategy sought to include all terms we determined could be synonymous with patient navigation, we may have missed studies where different names were used for the same function.

Studies where there was no indication patients attended a primary care appointment were not included in our review. While this strategy contributed to a more focused search, studies that reported the implementation of programs but not outcomes are missing. All of our included studies originated in the United States, which we acknowledge would impact on generalizability. These limitations highlight the need for consistent documentation of processes to improve access to care and the outcomes measured.

We did not look for or report on the effectiveness of the interventions or programs in our included studies. While we are unable to report on the impact, we consider our approach to looking at descriptions and uses of patient navigation in this specific context of connection to primary care, with a focus on patient-centred care, is consistent with the current focus on patient-reported outcome measures and acknowledging the patient experience of care.
This paper contributes to the discussion of access to primary care by considering patient navigation to connect vulnerable populations to providers in three ways. Firstly, we aligned components of the patient navigation studies reviewed to an existing generic navigation framework. This framework appears to be appropriate for considering navigators facilitating access for people without a primary care provider to regular care. Secondly, a relational approach acts as the backdrop to connecting vulnerable people to care, based on principles of patient-centred care. Finally, in the absence of a consistent definition of patient navigation in facilitating access to primary care, we have added to an existing description of patient navigation activities, which will assist clinicians and researchers to design and implement similar programs.

Implications for practice

The studies included in the review used navigators in a range of settings, from emergency departments, inpatient wards, outpatient services, and in the community. Most of these studies demonstrate established principles of patient navigation, and use a patient-centred approach, particularly when using a navigator (person) rather than a process, such as an electronic system. For providers and organisations wanting to link vulnerable people to primary care in a patient-centred way, navigators may assist in this process.

Future research

Analysis of cost effectiveness, while not a focus of this review, was nevertheless absent in the cited studies. As the concept of navigator continues to show promise, further research is required to measure impact and give direction to settings interested in using this intervention. For example, the link between patient navigation principles and outcomes of interest require further exploration.

CONCLUSION

Patient navigators may be used across health care settings to improve access to primary care.

Navigators are inherently patient-centred due to their relational approach and ability to connect
people to primary care. Interventions to improve access to primary care require further study to
determine their impact and cost-effectiveness.
Acknowledgements

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Competing interests

None declared.

Contributors

AP involved in writing protocol, searches, screening, extraction, drafting of results and writing of manuscripts. VL and TB involved in content expert input (methodology) and editing manuscripts. GR oversaw the project, assisted with screening, content expert input, drafting of results and editing of manuscripts.

Data sharing statement

Further details on studies included in this scoping review can be retrieved by contacting the corresponding author at annette.peart@monash.edu.

Figures

Figure 1: Flow of study selection.

References


55. ED navigators connect patients to better venues of care. *ED Manage* 2011;May:53-55.


57. ED navigators help patients find a PCP. *Hosp Case Manage* 2014;22(1):9-10.


Figure 1. Flow of study selection.

108x60mm (300 x 300 DPI)
Supplementary File 1

Databases searched
MEDLINE/PubMed
Embase
CINAHL
AMED
PsycINFO
Cochrane Library
Scopus
Web of Science Core Collection
ProQuest Dissertations & Theses
CIRRIE
PLoS
ProQuest Central

Grey literature sources
Agency for Healthcare Research and Quality National Guideline Clearinghouse
http://www.guideline.gov
Australian Commission on Safety and Quality in Health Care http://www.safetyandquality.gov.au
British Library E-theses Online Service http://ethos.bl.uk/Home.do
Canadian Institute for Health Information https://www.cihi.ca/en
Canadian Institutes of Health Research http://www.cihr-irsc.gc.ca/e/193.html
Centers for Disease Control and Prevention Wonder database http://wonder.cdc.gov/welcome.html
Commonwealth Fund http://www.commonwealthfund.org/

European Observatory on Health Systems and Policies http://www.euro.who.int/en/about-us/partners/observatory

Health Improvement and Innovation Resource Center http://www.hiirc.org.nz

Health Issues Center http://www.healthissuescenter.org.au

Health Systems Evidence http://www.healthsystemsevidence.org/

Institute for Clinical Evaluative Sciences http://www.ices.on.ca/

Institute for Healthcare Improvement http://www.ihi.org/Pages/default.aspx

Kings Fund http://www.kingsfund.org.uk/

MacColl Center for Health Care Innovation http://maccollcenter.org/

National Collaborating Centers for Public Health http://www.nccph.ca/2/home.ccncsp

National Institute for Health and Care Excellence https://www.nice.org.uk/

National Institute for Health and Care Excellence Evidence Search http://www.evidence.nhs.uk


Networked Digital Library of Theses and Dissertations http://ndltd.org

New Zealand Ministry of Health http://www.health.govt.nz

New Zealand Social Policy Evaluation and Research Unit http://www.superu.govt.nz

NHS Sustainable Improvement Team (formerly Improving Quality) http://www.nhsiq.nhs.uk/
Nuffield Trust [http://www.nuffieldtrust.org.uk/]

Open Grey [http://opengrey.eu]

Primary Health Care Research and Information Service [http://www.phcris.org.au/researchevidence/]


Robert Wood Johnson Foundation [http://www.rwjf.org/]

The Change Foundation [http://www.changefoundation.com/]

The Health Foundation [http://www.health.org.uk]

The Henry J. Kaiser Family Foundation [http://kff.org/]

The National Academies of Sciences Engineering Medicine, Health and Medicine Division [http://www.nationalacademies.org/hmd/]

The New York Academy of Medicine Grey Literature Report [http://www.greylit.org/]

Theses Canada [http://www.bac-lac.gc.ca/eng/services/theses/Pages/theses-canada.aspx]


World Health Organization Primary Health Care [http://www.who.int/topics/primary_health_care/en/]

For peer review only - http://bmjopen.bmj.com/site/about/guidelines.xhtml
**Supplementary File 2: Boolean search strategy**

**Database name and provider:** OVID Medline

Search conducted by the first author on 27 April 2016

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