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Published online: 09 Jan 2022.

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Exploring the application of the navigation model with people experiencing homelessness: a scoping review

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ABSTRACT

People experiencing homelessness are known to be at risk of disproportionately poor health outcomes and often face barriers in accessing healthcare. Patient navigation (PN) has been identified as a way to address health disparities and engage underserved populations with healthcare services . This scoping review aims to understand how PN models have been utilized with people experiencing homelessness and other comparable populations to date and more specifically identify (a) the defining features, (b) the barriers and facilitators in implementation, and (c) the outcomes associated with PN models. Database searches were conducted in Web of Science, PubMed and SCOPUS on 15th June 2021 and 21 papers, comprising nine reviews and 12 individual studies, were selected. Results indicate that PN has consistently been associated with improvements in a range of health-related outcomes, including timely access to healthcare. While the implementation and measurement of PN varies, a series of consistent features, facilitators and barriers are identified. Interventions to date have utilized a longitudinal approach and non-clinical navigators who share characteristics with the patient, and whose role is facilitatory. To maximize success in future use of PN, further research that focuses on the feasibility of the approach outside the USA is warranted.

Introduction

Across Europe, many underserved, marginalized people – including people experiencing homelessness – are at high-risk of poor health-related outcomes. For example, a systematic review carried out on housing improvements for health found that compared with the general population, those who are homeless or at risk of homelessness were at increased risk of respiratory conditions, depression, anxiety, and excess winter mortality (Thomson et al., 2013). Importantly, homelessness, and risk of, is associated with premature mortality, with the homeless population having an average age at death of just 47, 30 years lower than that for the general population (Thomas, 2011).

These poor health related outcomes may be explained both by the exposure to activities known to increase risk of cancer, and by the existence of barriers in accessing what are often highly complex and fragmented health and social care systems (Lebrun-Harris et al., 2013; Homeless Link, 2014). In particular, it has been found that people experiencing homelessness often present with symptoms that are missed by

primary and secondary prevention strategies and are therefore over-reliant on acute healthcare settings such as emergency hospital departments (Field et al., 2019). Issues with access to appropriate healthcare for this population are also often compounded by lack of insurance, legal problems, risk of stigmatization and experienced discrimination (Hwang et al., 2013; Lebrun-Harris et al., 2013). While it is essential that interventions are developed to prevent homelessness, there is also a pressing need for interventions to improve access to healthcare in those who are currently homeless.

In the last three decades, the patient navigation (PN) model has been promoted as a possible approach to address health disparities among underserved and marginalized populations and reduce barriers in access to diagnosis and treatment (Paskett et al., 2011; Freeman, 2012). Patient navigation is a community-based and person-centered intervention, whereby a named worker – the navigator – supports and guides individuals to overcome the barriers they face in accessing healthcare services and works to

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facilitate timely and appropriate access to care for the individual as well as their relatives, and caregivers, when needed (Freeman, 2012; Wang et al., 2015). Existing research has found that PN-based interventions are effective in improving health-related outcomes and patient satisfaction, decreasing no-show rates, and reducing disparities in care (Campbell et al., 2010; The Centre for Health Affairs, 2012). Moreover, and from a systems approach, the PN model has been associated with a reduction in hospital costs, and even in some cases, increased revenue (The Centre for Health Affairs, 2012). In this regard, the PN model has been shown to have potential to be scaled up for use with a wide variety of populations that are affected by healthcare disparities, and in targeting different diseases and health conditions.

The overall aim of this scoping review is to collate existing studies in order to better understand how the patient navigation model has been implemented with people experiencing homelessness and other comparable underserved populations, and the outcomes it has achieved. In doing so, this review will shed light on the necessary considerations for adapting this model so that it is appropriate and meaningful for this population.

As far as the authors are aware, this information has to date not been brought together in one place, meaning this paper fills a key gap in the existing literature. A scoping review format was chosen as the aim here is to explore and map current evidence relating to the topic, rather than to answer and synthesize findings in relation to a narrow research question. Scoping reviews are also particularly well-suited for identifying key characteristics or features relating to a concept or approach (Munn et al., 2018).

To this end, this scoping review is guided by the following research questions:

(1) What are the core features and components of the patient navigation model implemented in different interventions with people who are homeless, and other underserved populations?
(2) What factors are known to influence the outcomes of PN interventions with people who are homeless, and other underserved populations?
(3) How has the use of PN model impacted the health outcomes of people who are homeless, and other underserved populations?

Methods

Literature search strategy

The review followed a pre-designed but unpublished protocol, reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR). To identify relevant studies, comprehensive data searches were conducted in Web of Science, PubMed/Medline, and Scopus on 15th June 2021. The search strategy used across all the databases was: ("patient navigat*" OR "health navigat*") AND (homeless* OR marginali* OR vulnerable OR underserved). These terms were determined by trialing several combinations with the aim of casting a wide net over existing peer-reviewed research studies. To check that the database searches did not miss key texts, an author also scanned the reference lists of included studies identified through the search.

Study selection

Two authors (CC, LS) independently screened titles, abstracts and, where necessary, full texts for eligibility against pre-determined criteria. Any disagreements between authors were settled by a third reviewer (IG). Quantitative and qualitative studies and review papers were included, with no set restrictions on study design. This review is limited to studies published in peer-reviewed publications. Inclusion was based upon the following:

(a) Population: Adults over the age of 15 years who are homeless (defined as persons fitting any category in the ETHOS typology of homelessness (FEANTSA, 2006)), or who belong to a comparable underserved population (e.g. people with mental health conditions and/or substance abuse disorders, refugees, ex-offenders etc.)
(b) Project/intervention type: Evaluation or measurement of a PN model or intervention
(c) Timescale: Studies published between January 1st, 2000, and June 15th, 2021.

The exclusion criteria therefore included removing papers published before 2000, those that took a conceptual or theoretical approach to navigation, and studies that involved the use of navigation models with general or unspecified populations. Papers of all languages were included.

Data charting

Once the final selection of studies for inclusion was determined, two authors (CC, LS) extracted key data from each publication into a standardized Excel spreadsheet. For each publication, study characteristics (including lead author, method, year, location, study population, outcome measures, etc.) and the characteristics of the intervention (setting, profile and training of navigator(s), core activities of navigator and key findings, etc.) were extracted.

Synthesis of findings

Data were analysed thematically and are summarized in a narrative format. Given that a scoping review was carried out, there is a wide variety in methods, population and information provided by each publication.

Results

The search strategy yielded an overall total of 1203 papers (PubMed/Medline – 254, Web of Science – 296, Scopus – 653). 475 duplicates were removed, leaving a total of 728 papers for screening (see Figure 1).

The initial search returned a high number of primary studies relating to a wide range of underserved populations, the majority of which were relatively broad in their remit (for example, interventions delivered in low-income areas, or areas with a high proportion of ethnic minorities or migrants). The authors therefore made the decision to focus on primary studies which had been used with or tailored to either (a) people who are homeless or (b) specific underserved populations with which comparisons with to homelessness may be drawn, or where overlaps with the homeless population are very well-established. Based on the studies identified through the search, this included people with serious mental health conditions and people with substance abuse disorders (Homeless Link, 2014; Mental Health Foundation, 2021). While those publications which focused on broader underserved populations do still hold relevance to the aims of this review, there was a need to manage the size of the scoping review. It was therefore decided that in the case of these broader underserved populations, inclusion would be limited to review papers only. These review papers were cross-checked against the primary studies selected for inclusion to avoid duplication which resulted in three primary study papers being removed from selection.

The screening process resulted in a total of ten primary study papers and nine review papers, which met the inclusion criteria listed above, being selected for analysis. An additional two primary study papers that met the inclusion criteria were then added after scanning reference lists, meaning a total of 12 primary study papers were included in the final selection (see Figure 1). As two pairs of papers report on distinct aspects or stages of the same study/intervention, the sample of primary study papers represents ten individual studies.

Review papers

A total of nine review papers which evaluate the use of navigation with underserved populations were included for review. Table 1 provides an overview of the descriptive characteristics of these papers. The review papers comprised four systematic reviews (Bush et al., 2018; Roland et al., 2017; Shusted et al., 2019; Thomas et al., 2019), two systematic scoping or scoping reviews (Louart et al., 2021; Shommu et al., 2016), one mixed method review (Falk, 2018), one qualitative meta-synthesis (Roland et al., 2020), and one unspecified/narrative review paper (Corrigan et al., 2014). Review papers were published between 2014 and 2021, and the vast majority ($n = 8$) were focused solely or predominantly on interventions that took place in the U.S.A. The most recent review included was the only paper to focus on low-income countries (Louart et al., 2021).

The underserved populations examined by the papers include ethnic minorities, immigrants, uninsured persons, patients of community/public health centers, residents of low-income countries, HIV patients with histories of offending and/or care, women in rural areas and non-specific vulnerable populations. Cancer (both prevention and treatment) was the most common health condition covered by review papers ($n = 4$). Other health issues/conditions included were primary care access, chronic disease management, HIV treatment, and general/non-specific health. Table 2 provides an overview of the key features of the navigation interventions as summarized in the review papers, as well as the key findings and outcomes reported on. The way in which navigation models have been implemented with general underserved populations (in terms of their core components) appears to be highly varied. To summarize the key findings of the review papers, the data charting process focused on extracting the most common and consistent features, meaning the information provided in Table 2 is not exhaustive. Moreover, and reflecting the wide range of stated aims across the review papers, the features of the interventions were not consistently reported on.

Six of the nine papers provided details of the person (s) who acted as navigators in the studies reviewed. This was highly varied, but commonly included non-clinical lay persons or community members, clinical professionals, or a mixed team combining clinical professionals and lay persons. In several of the reviews, it was noted that both professionals and community members often also represented a peer, that is a person with lived experience similar to the participant population. The training provided to navigators was only fully detailed by one review paper (Roland et al., 2017), which reported that the most common content of training was general education around cancer and cancer screening, but often also included interpersonal skills such as communication, motivational interviewing and support/counseling. The same review paper also noted that ongoing supervision was common, and most often delivered by the research/project manager (Roland et al., 2017).
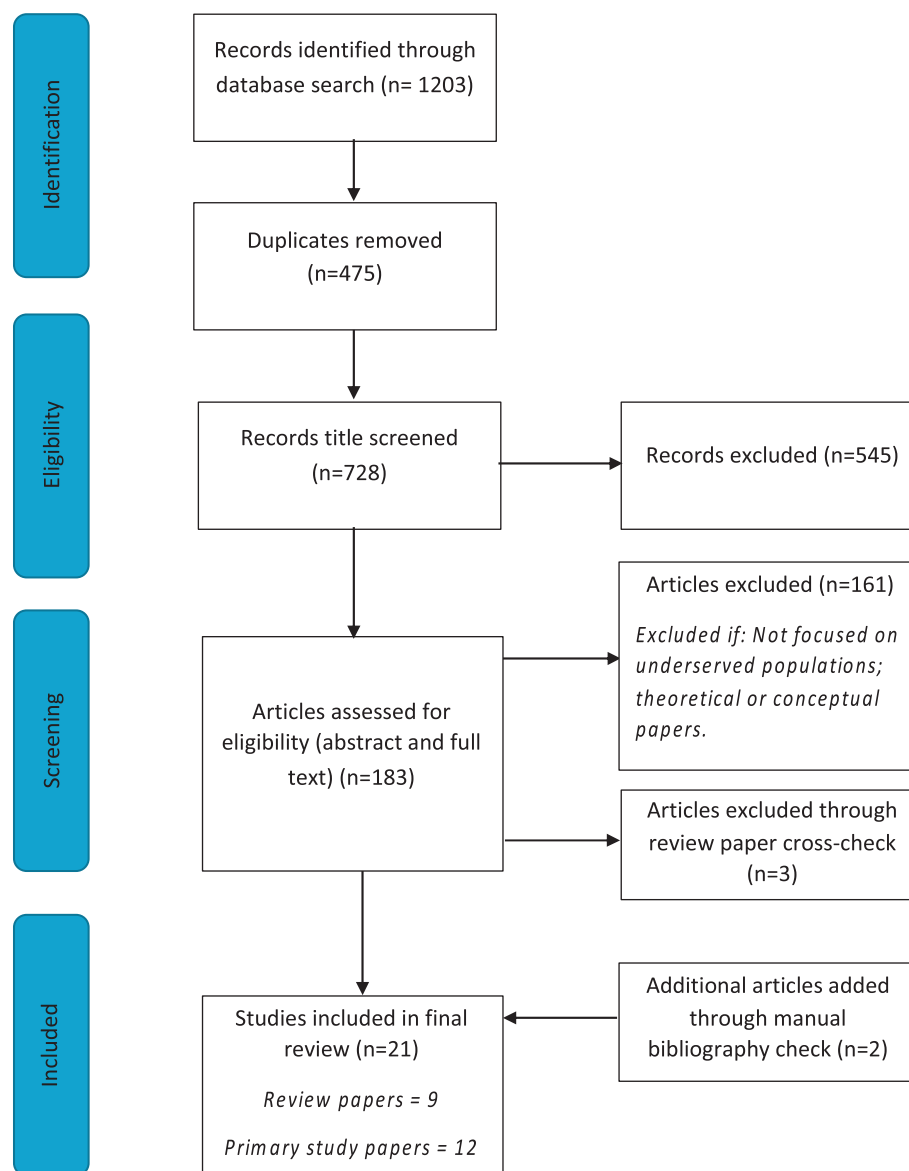
Figure 1. Flowchart of search process.

Four papers provided some information regarding the setting of the intervention, although this was often in very general terms. Both clinical and community settings had been utilized, with one paper specifically mentioning the use of both home visits and walking and support groups (Shommu et al., 2016). Two papers also mentioned that navigation activities commonly took place both in person and over the phone. Most of the papers ($n = 5$) reported on the most consistent activities/functions that took place as part of the navigation. Common functions included: identifying and addressing barriers to healthcare, providing tailored health education, organizing and attending appointments and facilitating self-care/self-management.

Regarding specific outcome measures, review papers consistently reported that patient navigation is associated with a wide range of positive effects including engagement/linkage into healthcare, timeliness of screening, diagnosis and treatment, and overall health outcomes. The benefit of utilizing peers and/or community members who are culturally competent to deliver was a consistent theme across several of the review papers, although one paper also noted that the use of peers can reinforce stigmatized attitudes towards treatment (Louart et al., 2021). The importance of the relationship between the participant and the navigator was repeatedly noted as being particularly key to the success of interventions (Roland et al., 2020).

Primary studies

A total of 12 papers which report on and evaluate the use of a navigation model/intervention were included for review. As two pairs of papers report on distinct aspects/outcomes of the same study (Corrigan et al., 2017a, 2017b; Compton et al., 2016; Reed et al., 2014), this sample comprises ten individual studies.

Table 1. Descriptive characteristics of review papers.

Authors (year)	Stated aim of review	Review type	No. studies	Types of study	Areas covered	Year of last publication	Health issue	Study population(s)
Bush et al. (2018)	To systematically assess the efficacy of PN and similar models to improve diagnosis and treatment of diseases affecting medically underserved populations	Systematic	16	All primary studies	U.S.A.	2011	Cancer care adherence	Uninsured, non-English speaking, and underserved residents from urban or rural locations
Corrigan et al. (2014)	To examine PN's key ingredients for cancer care for relevance to patients of color for application of peer services to psychiatric goals	Unspecified / narrative	8	Randomized control trials	U.S.A.	2013	General physical health	Ethnic minorities with serious mental health illness
Falk (2018)	To identify and compare programs aimed at improving mammogram and Pap screening rates for rural women	Mixed methods	30	RCTs, quasi-experimental and qualitative studies	U.S.A.	2016	Cancer screening	Women living in rural communities
Louart et al. (2021)	To synthesize what is known about PN interventions to facilitate access to modern health systems for vulnerable populations in low-income countries	Scoping	60	Intervention studies	Low-income countries	2019	Not specified	Residents of low-income countries
Roland et al. (2020)	To understand and describe client experiences with HIV PN	Qualitative meta-synthesis	7	Interview-based qualitative studies	U.S.A.	2018	HIV	HIV patients, predominantly with a history of offending or care.
Roland et al. (2017)	To identify studies of cancer related CHW/PN interventions in FQHCs, and to describe the components of those interventions	Systematic	24	Intervention studies	U.S.A.	2013	Cancer outcomes	Patients served by federally qualified health centers
Shommu et al. (2016)	To search and summarize the literature on community navigators to help immigrant and ethnic minority groups in Canada and the United States overcome barriers to healthcare	Systematic Scoping	30	Intervention studies	U.S.A. and Canada	Not stated	Chronic disease management and/or primary care access	Immigrants and/or ethnic minorities
Shusted et al. (2019)	To identify quality metrics used in navigation programs, as well as to recommend standardized metrics, and to define excellence in lung cancer navigation	Systematic	26	Randomized control trials, retrospective chart reviews	U.S.A., Denmark and Canada	Not stated	Cancer screening	Ethnic minorities or other broadly vulnerable populations
Thomas et al. (2019)	To identify whether a Health Service Broker working with health and social service providers in the community can (a) identify individuals experiencing vulnerability who may benefit from improved access to quality primary care, and (b) link these individuals with appropriate PCPs	Systematic and realist synthesis	11	All primary studies	Australia and U.S.A.	2015	Primary care access	Vulnerable populations

As above, these were selected on the basis that the intervention reported on was used with or tailored to either (a) people who are homeless or unstably housed ($n = 7$) or (b) a specific underserved population with which comparisons with to homelessness may be drawn, or where overlaps between populations are well-established ($n = 5$). To report on these results, studies have been organized under two headings: *homelessness*, and *mental*

Table 2. Details of navigation intervention – review papers.

Author	Navigator details	Training/ supervision received	Setting of navigation	Length of navigation	Core functions/activities of navigator	Reported outcomes/ key findings
Bush et al. (2018)	Most commonly lay persons/ peers, nurses or a mixed lay/peer and nurse team	Not reported	Not reported	Not reported	Assisting with transportation, overcoming issues relating to insurance, co-ordinating healthcare appointments, explaining follow-up process, assisting with language barriers.	Timing of initial contact with a PN after diagnostic or screening testing is correlated to the effectiveness of the navigator intervention. Majority of studies reported significantly shorter time intervals to diagnosis and to treatment with patient navigation.
Corrigan et al. (2014)	Not reported	Not reported	Not reported	Not reported	Not reported	Among cancer patients, navigators lead to greater treatment engagement and improved health outcomes for ethnic minority groups. Peers can improve integrated care by providing effective psychiatric services to individuals with mental illness.
Falk (2018)	Not reported	Not reported	Not reported	Not reported	Not reported	Rural areas need greater implementation and evaluation of screening interventions. Significant variation in the implementation of PNs, but all reported successful screening improvements.
Louart et al. (2021)	Most commonly CHWs (16) or peers/community members (13) Mix between volunteers and employed workers.	Not reported	Not reported	Not reported	Identifying at risk members of the community, providing health promotion and education, accompanying and transporting patients to appointments, carrying out home visits to facilitate treatment adherence.	PN interventions act on several barriers and are effective in enhancing the abilities of poor and vulnerable populations in low-income countries to access healthcare. Importance of familiarity with local context; however, use of peers associated with both facilitators and barriers to health access.
Roland et al. (2020)	Non-medical professionals, nurses or clinical social workers. Some professionals also represent peers or near-peers.	Not reported.	Phone and/or in person.	Ranging from a single meeting to 10 months.	Not reported.	The unifying theme across all studies was the value and impact of the client – navigator relationship on client experience and quality of life.
Roland et al. (2017)	Most commonly lay workers, community members or nurse assistants.	General education on cancer (11), patient support (4) motivational interviewing (4). Ongoing supervision often delivered by research project manager.	Clinic and/or community settings	Not discussed	Health education, identifying and addressing barriers to care, scheduling, reminding of and attending appointments, facilitating referrals or linkage to health and social care services, motivational support and encouragement.	Community Health Worker/ PN interventions can improve completion and timeliness of cancer screening and diagnosis. Barriers to screening identified include inflexible programs, housing instability and concerns about immigration status.
Shommu et al. (2016)	Non-clinical community members.	Training by health professionals	Phone and/or in person.	Highly varied, ranging from 65 days to 88 months; 6 months as most common.	Providing culturally tailored health education, lifestyle workshops, self-care training, guidance to overcome barriers to accessing healthcare.	The majority of studies reported substantial improvements in the health outcomes. Culturally competent guidance provided by navigators from a patient's own ethnic community might play a major role in overcoming barriers to healthcare.
Shusted et al. (2019)	Not reported	Not reported	Not reported	Not reported	Not reported	Authors propose seven metrics for measuring PN relating to lung cancer: (1) screening rate, (2) compliance with follow-up, (3) time to treatment

Table 2. Continued.

Author	Navigator details	Training/ supervision received	Setting of navigation	Length of navigation	Core functions/activities of navigator	Reported outcomes/ key findings
						initiation, (4) patient satisfaction, (5) quality of life, (6) biopsy complications, and (7) cultural competency.
Thomas et al. (2019)	Lay workers	Not reported	Hospital or public health clinics; community health centers.	Not reported	Linking to primary care or screening services, raising awareness of services through referral, arranging and transporting to appointments, facilitating self-management.	The majority of studies successfully linked their target group to primary care. Interventions predominantly focused on assisting patients to reach services, rather than considering how health services could alter the way they deliver care to improve access. Individual advocacy may be a key element in the success of these types of interventions.

health-related conditions, the latter of which takes a broad view of mental health to include substance related disorders (National Institute of Mental Health, 2021).

Homelessness

Table 3 provides an overview of the study characteristics of the seven papers (six individual studies) which focused on or included participants who were experiencing homelessness. Research design varied across the papers, with three randomized pilot or control trials (Corrigan et al., 2017a, 2017b; Kelly et al., 2018), two non-randomized interventions (Asgary et al., 2017; Rajabiun et al., 2018), one observational cohort study (Shah et al., 2019), and one paper presenting a case study to exemplify a navigation intervention that had taken place (Shearer et al., 2019). Following the pattern noted in the review papers, all but one of the studies (Shah et al., 2019) took place in the U.S.A.

Notably, all studies focused on a particular subsection of the homeless population such as women, youth, or African Americans, with the majority (n = 5) also specifically focusing on people who were both homeless and experiencing some form of mental ill health. In terms of the specific health conditions targeted, these included cancer screening, HIV screening and/or treatment, reduction of hospital utilization and improving general health and/or access to healthcare. Outcome measures also varied, but commonly included rates of screening and engagement with and/or utilization of healthcare services. In the three randomized trials, the control measure was usual care, although in one study, participants in the control arm were also waitlisted to the intervention (Kelly et al., 2018). Each of the seven papers provided a substantive explanation of the navigation that took place. Table 4 provides an overview of the key features of the navigation intervention, and briefly summaries the outcomes reported on.

Every paper provided details of the person(s) who acted as navigator, with this most commonly being a peer (n = 4). The remaining studies employed a clinical professional, multiple clinical professionals, or a combination of peers and clinical professionals. The majority of papers (n = 6) reported on the training received by the navigation which was usually wide-ranging, and often involved a formal or certificated program. Three studies also explicitly mentioned ongoing coaching/ mentoring/ supervision by clinical professionals.

With regards to the setting of the navigation, that is where navigators engaged and met with service users, this was usually either a clinical setting (health center, HIV clinic) or a field-based location. One study, for example, described navigators attending a variety of locations including parks, pavements, and homeless encampments (Shah et al., 2019). Two papers, reporting on the same study, described the setting as being flexible in response to the preferences of the participants (Corrigan et al., 2017a, 2017b), and one took place solely within a homeless shelter (Asgary et al., 2017). In terms of the length of the navigation, all but one study reported a set timeframe, ranging from 90 days to 12 months. In the case of the observational cohort study, the navigation intervention was described as ongoing (Shah et al., 2019).

All papers described the core functions/activities of the navigator in extensive detail. While the language used to describe these activities varied across the papers, common functions included: providing tailored education, working collaboratively to identify/review health needs, goal setting, organizing and accompanying to health-related appointments, providing practical assistance (for example, transportation or phones), providing emotional support, and facilitating linkage to broader health and care providers.

In terms of the outcome measures, all seven papers reported that navigation had some degree of positive

Table 3. Descriptive characteristics of primary study papers – homelessness.

Authors (Year)	Country	Research design	Health condition/ issue targeted	Study population(s)	Sample size	Outcome measures	Control
Asgary et al. (2017)	U.S.A.	Non-randomized intervention study	Breast and cervical cancer screening	Women experiencing homelessness	162	Rates of breast and cervical cancer screening	N/A
Corrigan et al. (2017a)	U.S.A.	Randomized control trial	General health	African Americans with serious mental illness experiencing homelessness	67	General medical illness; psychiatric disorder; recovery; quality of life	Usual care
Corrigan et al. (2017b)	U.S.A.	Randomized control trial	General health/ access to healthcare	African Americans with serious mental illness experiencing homelessness	67	Engagement with PCPs (scheduling and achieving healthcare appointments)	Usual care
Kelly et al. (2018)	U.S.A.	Randomized pilot study	General health/ access to healthcare	People with serious mental illness and experiencing housing instability	20	Engagement in intervention; services utilization; PCP relationship; health screenings; pain; healthcare management	Usual care + waitlisted for intervention
Rajabiun et al. (2018)	U.S.A.	Non-randomized intervention study	HIV treatment	People living with HIV who are unstably housed, with co-occurring substance abuse and psychiatric disorders	700	HIV-related outcomes including linkage and retention in care; initiation of ART; viral suppression	N/A
Shah et al. (2019)	Kenya	Observational cohort study	HIV screening and treatment	'Street-connected' youth	781	HIV testing; initiation of ART; retention in care	N/A
Shearer et al. (2019)	U.S.A.	Case study	Reduction of hospital utilization	People experiencing homelessness with psycho-social issues	1	Hospital utilization	N/A

effect on some of or all the stated measures. Recorded effects included increased rates of screening, increased usage of and retention in care, improved relationships with primary care providers, and improvements in self-reported physical and mental health. There are also a few notable outcomes in relation specifically to the homeless population. One study found that retention in (HIV) care was twice as likely when participants had access to stable housing, indicating that there may be specific difficulties associated with engaging people who are homeless with routine healthcare (Rajabiun et al., 2018). Conversely, another study reported that the rate of reduction in pain and improvement in self-management were both greater for those experiencing homelessness compared to those who were not (Kelly et al., 2018). However, this is potentially be explained by a lower overall standard of health among the homeless population.

In terms of specific barriers to successful implementation, evidence from these studies suggests that navigation may be less successful with both women in general (Shah et al., 2019), and older women (Asgary et al., 2017). It is also notable that one study reported no change in behaviors until three months into the intervention (Corrigan et al., 2017b), suggesting longevity may be a key component in achieving positive outcomes.

Mental health-related conditions

Table 5 provides an overview of the study characteristics of the five papers (four individual studies) which included participants with mental health-related conditions, including substance abuse disorders.

Briefly, the sample consists of three randomized pilot or control trials (Abuelo et al., 2020; Binswanger et al., 2015; Kelly et al., 2017), one non-randomized intervention study (Compton et al., 2016) and a single qualitative study (Reed et al., 2014), which reported on qualitative interviews with staff and service users involved in a navigation intervention. Consistent with the pattern noted above, all studies took place in the U.S.A. Study populations included people with severe mental illness, people with histories of inpatient psychiatric stays, and people with histories of substance abuse including ex-offenders. In terms of the health conditions targeted, the majority (n = 4) focused on general health, often orientated towards recovery and/or access to healthcare, with the remaining study focusing on cancer screening (Abuelo et al., 2020). Outcome measures again varied and included rates of screening and/or service use, self-reported barriers to care, attitudes and behaviors, and various measures of recovery. In the three randomized trials, the control measure was usual care, although in one study, participants in the control arm also received facilitated enrollment into a general care program (Binswanger et al., 2015).

Table 6 provides an overview of the key features of the navigation intervention for each of the five papers, and briefly summaries the outcomes reported on. All the papers provided details on the person(s) who acted as navigator. Within this sample, the use of peer navigators was slightly less common than in the

Table 4. Details of navigation intervention – homelessness.

Authors (Year)	Navigator details	Training/supervision received	Setting of navigation	Length of navigation	Core functions/activities of navigator	Reported outcomes
Asgary et al. (2017)	Clinical professional	Not reported	Homeless shelter	Up to 6 months	Tailored education and counseling; scheduling and reminding of appointments; preparing for screening tests; arranging transportation and accompanying to appointments; documenting results of screening; co-ordinating with other professionals	High rate of screening amongst participants, although older women more likely to refuse screening.
Corrigan et al. (2017a)	Peer	Training on 'helping skills' and local resources	Flexible	12 months	Reviewing health concerns and goal setting; reflective listening; motivational interviewing, strengths assessment; and advocacy	Improvement in physical and mental health self-report measures compared with control.
Corrigan et al. (2017b)	Peer	Training on 'helping skills' and local resources	Flexible	12 months	Reviewing health concerns and goal setting; reflective listening; motivational interviewing, strengths assessment; and advocacy	No change reported for first three months; increase in scheduling and achieving appointments in final nine months compared with control.
Kelly et al. (2018)	Peer	Formal training program and coaching	Usual care settings	6 months	Use of a collaborative electronic health record. Screening, engagement, goal setting and designing of care plan (for 1–4 months); then regular coaching and ongoing support as needed	Increase in visits and improved relationship with primary care providers compared with control. No substantive change to self-management of healthcare. Intervention significantly more impactful for reducing pain and increasing self-management for those who were homeless, compared to those who were not.
Rajabiun et al. (2018)	Mixed team of clinical professionals and peers.	Training on harm reduction, trauma-informed care, and motivational interviewing	Public health center	12 months	Providing practical assistance; assisting with access to cell phones; providing education and support around risk behaviors; linkage to housing, social care, and health providers	High proportion of participants linked to and retained in care; prescribed ART and reached viral suppression. Participants who achieved stabilized housing were twice as likely to be retained in care.
Shah et al. (2019)	Peer	Extensive multi-disciplinary training and mentoring by Social Worker	HIV clinic; outreach/field locations	Ongoing	Initial meeting to establish HIV status, offer condoms, discuss prevention, and provide linkage to counseling and testing services; assistance with scheduling appointments; providing emotional support and assistance; accompanying to appointment	High proportion of HIV-positive participants linked to care. Navigator being known to participants recognized as a facilitator. Females less likely to accept HIV testing than men. Adherence to treatment low among population, potentially due to stigma associated with HIV.
Shearer et al. (2019)	Clinical professionals	Formal training program and clinical supervision	Outreach/field locations	90 days	"Talking story"; establishing patient's strengths; encouraging patients to identify needs and barriers; design and implementation of a co-designed action plan to meet needs	Case study participant's hospital utilization decreased.

homelessness studies, with only one study employing a peer navigator alone (Kelly et al., 2017). The remaining studies employed either a "near peer," a team of clinical professionals, or a mixed team comprising clinical professionals, a "near peer" and a peer. Here, the term "near peer" is used to refer to a person with indirect experience of the study population, for example, a family member who has been incarcerated (Binswanger et al., 2015). Less detail was provided about the training of navigators within this sample,

although one paper mentioned the use of a formal training program delivered by experienced navigators, and two mentioned ongoing supervision.

Four papers reported on the setting of the navigation, which was either described as taking place in a professional clinical or non-clinical setting (healthcare center, probation center), or in field-based locations such as participant's homes. Two studies also explicitly mentioned the use of regular phone calls to contact participants. The lengths of the navigation were

Table 5. Descriptive characteristics of primary studies – mental health related conditions.

Authors (Year)	Country	Research design	Health condition/ issue targeted	Study population (s)	Sample size	Outcome measures	Control
Abuelo et al. (2020)	U.S.A.	Randomized pilot study	Colorectal Cancer Screening	Older people with mental illness and/or substance abuse disorders	251	Screening	Usual care
Binswanger et al. (2015)	U.S.A.	Randomized control trial	Access to healthcare	Recently released ex-offenders with histories of substance abuse	40	Self-reported barriers to care; rate of service use	Facilitated enrollment into care program
Compton et al. (2016)	U.S.A.	Non-randomized intervention study	General health orientated towards recovery and recidivism	People with a history of inpatient psychiatric recidivism	72	Number of hospitalizations; arrest numbers; various measures of recovery	N/A
Kelly et al. (2017)	U.S.A.	Randomized control trial	General health/ access to healthcare	People with serious mental illness	151	Service utilization; satisfaction with primary care provider; self-management attitudes and behaviors	Usual care
Reed et al. (2014)	U.S.A.	Qualitative study involving interviews with staff and service users	General health orientated towards recovery	Repeat psychiatric stay patients, people with serious mental illness	23	Participant and staff feedback on intervention	N/A

similar to that of the homelessness studies, ranging from three to 12 months.

All papers described the core functions/activities of the navigator in extensive detail. While the language used to describe these activities again varied across the papers, common functions were very similar to that described above and included: working collaboratively to identify/review health needs, goal setting, organizing and accompanying to health-related appointments, providing practical assistance (for example, transport or medication) and facilitating linkage to broader health and care providers. Notably, a number of these papers also mentioned activities that suggested a broad approach to health and wellbeing in that they were less explicitly related to accessing health services/treatment, for example, linkage to local police to reduce incarceration (Compton et al., 2016), encouraging vocational and volunteering activities (Reed et al., 2014), and assisting with access to housing (Reed et al., 2014).

Regarding the outcome measures recorded, all papers again reported that navigation had some degree of positive effect on some of or all the stated measures including increased screening, increased engagement with primary care, improvements in terms of measures of recovery, reduced usage of acute healthcare services/emergency hospitalization and reduced barriers to healthcare. One study also notably recorded an increase in diagnosis among those patients involved in the navigation intervention, explained by the tendency for chronic health conditions to go undetected amongst these populations (Kelly et al., 2017). Two studies also noted that for a few of the outcome measures reported on, the improvement was not apparent until late or the end of the intervention suggesting that navigation may

also be associated with delayed positive effects (Binswanger et al., 2015; Kelly et al., 2017).

Results from one paper indicate that navigation interventions may be more successful with young people, males, those with substance abuse disorders (Abuelo et al., 2020). Conversely, the navigation was noted as being less effective among participants who presented with a dual mental health and substance abuse diagnosis (Abuelo et al., 2020). Other reported barriers include the lack of availability among primary care providers and repeat incarceration on the part of participants (Binswanger et al., 2015). The single qualitative study in the sample reported specifically on the perceived barriers and facilitators to success, as relayed by both participants and navigators. Noted facilitators included a "joined-up" approach between relevant stakeholders and organizations, and a flexible approach to the delivery of the navigation, while barriers included issues around the implementation of technology, and a lack of consistency in approach across navigator teams (Reed et al., 2014).

Discussion

This scoping review has sought to map the existing literature relating to the implementation of the patient navigation model with underserved populations, and more specifically people experiencing homelessness. This is, to the authors knowledge, the first scoping review on the topic of PN that places a particular focus on this population, with the majority of other review papers to date instead focusing on broader underserved or vulnerable populations (e.g. low-income populations, people without insurance, ethnic minorities) as described

Table 6. Details of navigation intervention – mental health related conditions.

Authors (Year)	Navigator details	Training/ supervision received	Setting of navigation	Length of navigation	Core functions/activities of navigator	Reported outcomes / Key findings
Abuelo et al. (2020)	Clinical professionals	Formal training program delivered by experienced navigator; supervision by project manager	In person at healthcare center, and over the phone	6 months	Initial meeting to assess barriers to healthcare; appointment reminders; assisting with translation; resolving insurance issues; arranging transportation; attending to barriers as required	Higher level of cancer screening compared with control. Intervention most effective among participants with substance abuse disorders, young people and males. Less effective among participants with a dual diagnosis.
Binswanger et al. (2015)	'Near peer'	Supervision by experienced navigator and physician	In person at probation center and over the phone	3 months	Assessment of the self-reported treatment needs of participants; assistance with appointments and medication; providing social support and health education; linkage to primary care	Overall decrease in self-reported barriers to healthcare and decrease in rate of hospitalization compared with control. Repeat incarceration as key barrier to success of intervention. Increase in use of hospital/acute care explained by lack of primary care availability.
Compton et al. (2016)	Mixed team of clinical professionals, 'near peer' and peer	Not reported	Homes and other non-clinical settings	12 months	Provision of case management and recovery support; facilitating linkage to care providers; facilitating recovery and adequate treatment; linkage with local police to prevent incarceration	Reduction in hospitalization and improvements across all recovery measures; no significant change to arrest rate. Community ability improved, most quicky, whereas mental health recovery and quality of life took longer to improve.
Kelly et al. (2017)	Peer	Not reported.	Outreach/ field locations	6 months	Screening, engagement, goal setting and designing of care plan (for 1–4 months); then regular coaching and ongoing support as needed	Those in intervention arm significantly more likely to become and/or stay connected with primary care. Higher rates of diagnosis and decrease in level of reported pain compared to control. Evidence of delayed improvements (after six months) to self-management and reduced hospital usage. Variation in the time taken by participants to progress, suggesting need for flexibility in intensity of navigation.
Reed et al. (2014)	Mixed team of clinical professionals, 'near peer' and peer	Not reported.	Not specified.	6 months	Assisting with access to adequate treatment; assisting with access to housing; encouraging community involvement; developing a "meaningful day" through vocational, volunteer, or educational activities; supporting use of technology to aid recovery	Facilitators to success of intervention include partnerships among stakeholders with common goals, pooling of resources by agencies, a varied team of navigators, "whatever it takes" mentality, mobile 24hr availability. Barriers to success included slow pace of implementation of technology, lack of fidelity across teams.

above (for example, Bush et al., 2018; Roland et al., 2017; Shusted et al., 2019; Thomas et al., 2019). Given the substantive and persistent health disparities faced by people experiencing homelessness (Thomas, 2011), examining how health-related interventions have been and could be applied with this population is of particularimportance.

In returning to the initial research questions set out at the beginning of this review, it has been highlighted that the way in which PN interventions have been implemented and reported on is highly varied and as such, it is somewhat difficult to draw clear comparisons, as also noted by other previous reviews (Falk, 2018; Louart et al., 2021). Having said that, a series

of common features and components can be identified. Indeed, while the language used to explain the role of the navigator varied across studies, most interventions involved a relatively similar set of activities/functions and took place longitudinally, generally for six months or more, rather than as a one-off meeting. Perhaps the most defining feature across the included studies is that the navigator role is almost always non-clinical, focused on case management and emotional support rather than the delivery of treatment.

The use of peer or "near-peer" navigators who share common characteristics with the study population was a common feature across the papers reviewed – particularly in those studies that targetted people who are homeless – and were associated with a range of positive outcomes. Given that a primary aspect of the navigator role is to provide emotional support and/or counseling, it is possible that peer navigators may be able to show a distinct level of empathy and understanding when compared with clinical professionals. Indeed, the importance of a strong relationship between participant and navigator was repeatedly noted. However, as discussed elsewhere (Corrigan et al., 2017a), it remains unclear as to what qualities of the "peer" are most important for achieving positive outcomes. Further research to elicit a greater understanding of this specific aspect of the model is warranted.

With regard to the setting of these interventions, it is notable that navigators often seemed to occupy a position – both physically and in terms of their activities – between more formal healthcare systems and the wider field. The need to be flexible in terms of location of delivery was regularly emphasized, with outreach and the use of less formal health settings (e.g. community health centers) both common. As with the use of peers, this aspect of previous interventions emphasizes the importance of familiarity in the success of the intervention with underserved and marginalized populations, a conclusion also drawn in the recent review of PN programs in low-income countries conducted by Louart et al. (2021).

In terms of health outcomes, and in line with the majority of literature to date, this review overall indicates that PN interventions have been successfully implemented with a range of underserved populations including people experiencing homelessness and have consistently been associated with increased and more timely access to healthcare, and improvements in a wide range of other health and wellbeing related outcomes. Particularly notable is that several of the interventions were focused on supporting a specific gender (e.g. homeless women), while those that did not often reported different outcomes depending on gender. This indicates that gender may be a significant factor in the success of PN models, and that gender-tailored interventions may yield more positive and consistent

outcomes. As two of the studies reported that their interventions were less successful with older people, a similar consideration of age may also be beneficial.

Overall, the use of patient navigation appears to be an extremely promising approach in overcoming health inequalities and addressing the unmet needs of people experiencing homelessness. It is however notable that to date there has been very limited literature on the application and evaluation of navigation interventions outside of the U.S.A., meaning there remains the need to explore how such this organizational model of care delivery could work in other contexts including in Europe. This is particularly important given that many countries have very distinct systems for delivering health and social care, and because the nature and scale of homelessness varies greatly country-to-country (Busch-Geertsema et al., 2014).

Limitations

The variety of search databases utilized, as well as extensive reference searches, reduced the risk of bias and are clear strengths of the present study. However, there are a number of limitations which should be noted. First, there is a potential influence of publication bias, with negative and null findings remaining in the "file drawer." Second, in order to manage the scale of the review, it was decided that primary studies which focused on broader underserved populations would be excluded. While review papers of this nature were still included in order to capture key themes from this body of research, it is possible that primary studies of relevance were missed, for example, those involving refugee or migrant populations. Third, it is possible that by focusing on the term "patient navigation/navigator model," which has to date predominantly been used in North America, the literature search may have missed similar interventions that have taken place in other settings using a different set of terminology.

Conclusion

In conclusion, findings from the present scoping review support the adoption and the implementation of the PN model among underserved communities and highlight a series of key considerations for the design and implementation with people experiencing homelessness. Interventions to date have utilized a longitudinal approach and a navigator who is a non-clinical expert, shares common characteristics with the patient, and whose key role is to focus on case management and emotional support. Finally, interventions tailored to gender and age may yield the greatest results. In order to maximize success with the implementation of future navigator interventions,

further research that focuses on the feasibility, acceptability, efficacy, scalability, and sustainability of the approach outside the U.S.A. and identifying important characteristics of the navigator (e.g. situation similarities, disease similarities or both) is warranted.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

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