Perceived barriers and facilitators to accessing and utilising sexual and reproductive healthcare for people who experience homelessness: a systematic review

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ABSTRACT

Introduction People who experience homelessness face disproportionately poor reproductive health and adverse pregnancy outcomes, including but not limited to unintended pregnancy, abortion, low birth weight and preterm birth, as well as a higher risk of sexually transmitted infections (STIs). Precarious living conditions are known to contribute to poor uptake and engagement with sexual and reproductive healthcare (SRH) for this population.

Aim To identify and understand the perceived barriers and facilitators for accessing and utilising SRH for people who experience homelessness from their perspective, and the perspective of support staff/volunteers and healthcare professionals.

Methods Electronic databases and online sources were searched. Two reviewers independently carried out the screening, data extraction, critical appraisal, data synthesis and thematic analysis of findings.

Results Following deduplication and screening, 23 papers/reports were considered eligible for the review. Barriers for people experiencing homelessness to accessing and utilising SRH were identified within the themes of complexity, feelings and knowledge (ie, individual-level factors), as well as patient/provider interaction and healthcare system (ie, organisational factors). Facilitators were identified within all of the above themes except for complexity.

Conclusions Both population characteristics and attributes of the healthcare system influence access and utilisation of SRH by people experiencing homelessness. Given the complexity of living conditions associated with homelessness, greater efforts to improve access should be placed on healthcare systems and aspects of care delivery. This systematic review highlights current gaps in the literature and provides recommendations for enhancing future research and practice to meet the needs of this vulnerable group more effectively.

Key messages

- Utilisation of and access to sexual and reproductive healthcare (SRH) for people experiencing homelessness are influenced by both the characteristics of users and characteristics of the healthcare system.
- The precarious living conditions of homelessness amplify the barriers to accessing and utilising SRH.
- Robust evidence-based interventions to increase access to long-term contraceptive methods and family planning programmes, along with screening for sexually transmitted infections, are needed for people who experience homelessness.

INTRODUCTION

Currently there is a lack of consensus on how homelessness is defined due to its complexity, encompassing an array of living arrangements and transience.[1] A number of sociopolitical phenomena, many beyond an individual's control, contribute to people who experience homelessness in high-income countries facing extreme inequities across various health conditions.[2 3] A wealth of literature shows that they are more likely to

suffer from physical and mental health problems than the general population.[4–7] They face disproportionately poor reproductive health and adverse pregnancy outcomes,[8] such as unintended pregnancies, abortion and preterm births, and a higher risk of contracting sexually transmitted infections (STIs).[9] Compared with their housed peers, adolescents who experience homelessness are more likely to engage in high-risk behaviours including initiating sexual activity at a younger age, multiple partners, inconsistent contraception use, and engaging in sex while intoxicated or for survival (eg, trading sex for shelter).[10]

Despite these increased risks, the engagement of people who experience homelessness with sexual and reproductive healthcare (SRH) services is poor compared with the general population, with inadequate use of contraception.[11–13] Full understanding of the causes of these behaviours is lacking, yet is crucial to improving practices to meet the complex needs of this vulnerable population.

Systematic reviews of qualitative research are a valuable and necessary response to health service research questions, including access issues and understanding views/perceptions and experiences.[14–16] This systematic review aimed to answer the question: What are the perceived barriers and facilitators to accessing and utilising SRH for people who experience homelessness from their perspective, and the perspective of support staff/volunteers and healthcare professionals?

METHODS

Research protocol

Positionality statement

Our positionality statement can be found in online supplemental file 1.

Patient and public involvement statement

A community volunteer contributed to the interpretation and reporting of the review findings, as well as the research dissemination plans. She has been involved in the homelessness sector for over 10 years, and focuses on issues including sexual and reproductive health, dental health and nutrition.

Protocol and registration

The review protocol was registered a priori with PROSPERO (Registration Number: CRD42018104273). ENTREQ and PRISMA guidelines were followed to conduct and report the review.

Theoretical framework

The review adopted a phenomenological approach[17] to identify and understand the lived experiences and views of people experiencing homelessness, support staff, volunteers and healthcare professionals.

Eligibility criteria

The SPIDER (Sample, Phenomenon of Interest, Design, Evaluation, Research type) method (table 1) was chosen to define the eligibility criteria and inform the search strategy,[18] being developed to specifically

Table 1 Eligibility criteria

Sample	Adolescents and adults experiencing homelessness, healthcare professionals and other staff working with people who experience homelessness. The European Typology of Homelessness, adopted in this review, comprises a number of living situations: ► *"rooflessness (without a shelter of any kind, sleeping rough)* ► *houselessness (with a place to sleep but temporary in institutions or shelter)* ► *living in insecure housing (threatened with severe exclusion due to insecure tenancies, eviction, domestic violence)* ► *living in inadequate housing (in caravans on illegal campsites, in unfit housing, in extreme overcrowding)".*[51]
Phenomena of interest	Access and utilisation of sexual and reproductive healthcare (SRH) among people who experience homelessness. In the context of healthcare, and hence in this review **access** was considered as *"Access to a service, a provider or an institution" ("the opportunity or ease with which consumers or communities are able to use appropriate services in proportion to their needs"*[52]); and **utilisation/use** as a proxy of access (realised access).[52] The review adopted the definition by the Faculty of Sexual and Reproductive Healthcare: **Sexual and reproductive healthcare** *"supports all people in having a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of infection, coercion, discrimination and violence; enabling them to decide if, when and how often to have children by informing them of, and providing access to, safe, effective, affordable and acceptable methods of contraception of their choice. It also signposts women to the necessary support and care to go safely through pregnancy and childbirth, thus maximising the chance of having a healthy infant".*[53]
Design	Inclusion: empirical studies using qualitative analytic methods and mixed-methods evaluations that were conducted in countries of very high Human Development Index (HDI),[54] to improve transferability of findings and develop recommendations for policy and practice applicable to advanced SRH services.[55] Exclusion: countries of high, medium or low HDI.[54]
Evaluation	Perceived barriers (factors that hinder access and or utilisation to SRH) and facilitators (factors that enhance access and or utilisation to SRH) to accessing and utilising SRH for people experiencing homelessness from their perspective, and those from support staff and volunteers and healthcare providers.
Research type	Inclusion: qualitative research studies and mixed-methods evaluations with clearly distinguishable qualitative findings – as they use the most appropriate methodology to understand views, perceptions and experiences of accessing SRH.[55 56] Exclusion: quantitative studies, narrative reviews, letters, commentaries and editorials, conference proceedings.

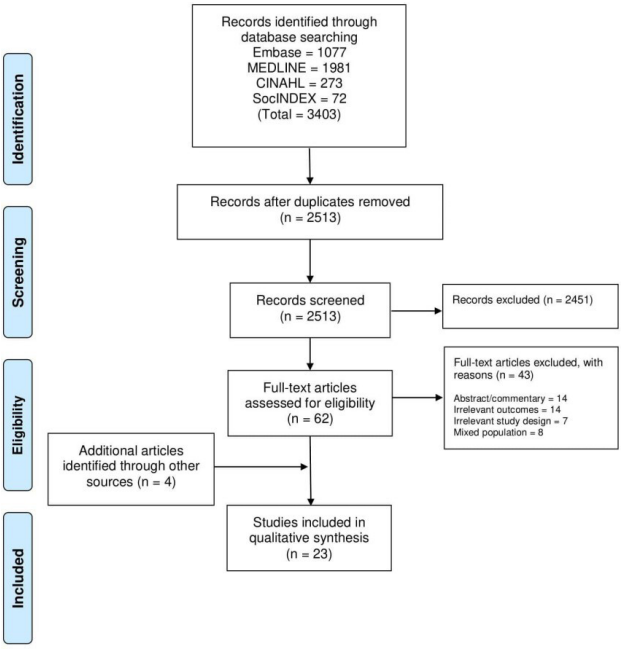

Figure 1 PRISMA flow chart. From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: the PRISMA statement. PLOS Med 6(7): e1000097. doi:10.1371/J0urnal.pmed1000097. For more information visit www.prisma-statement.org.

identify relevant studies of qualitative or mixed-methods design, which are the focus of this review.

There were no limitations in terms of language or date, and both peer-reviewed and grey literature were eligible.

Search strategy

Information sources

Searches were undertaken by an information specialist and conducted on 17 May 2018, then updated on 22 April 2020 for potential new papers.

The following databases were used: Embase, MEDLINE, CINAHL and SocINDEX, with further searches using Google, EThOS, Open Grey, the Health Foundation, Social Care Online, and the Faculty of Sexual and Reproductive Healthcare. Following screening, bibliographies of included studies were searched.

Search

The search strategy, comprising terms for homelessness including synonyms for hostels, and terms for contraceptive, sexual and reproductive care, can be found in online supplemental file 2.

Study selection

Study selection and data collection process

Search results were collected, deduplicated in EndNote and then screened via the Rayyan systematic review web application.[19] Two reviewers (MP, JMM) independently screened the titles, abstracts and then full texts against the inclusion criteria. When there was a disagreement, discussion was held to reach consensus. If not possible, a third reviewer (JS) was consulted. A data extraction form was pilot-tested prior to its application (MP, JMM).

Critical appraisal

Studies were appraised by two reviewers independently (MP, JMM) using the Critical Appraisal Skills Programme,[20] a third reviewer (JS) resolving any cases of disagreement. Critical appraisal was not used to weigh or exclude any papers but to improve transparency since, currently, no consensus exists on its use in the synthesis of qualitative research.[14 21] Similarly to other studies, our review focused on conceptual relevance rather than methodological rigour.[22] To examine whether inclusion of studies of lower quality studies influenced the results, sensitivity analysis was conducted.[14]

Synthesis of findings

The full texts of included studies were uploaded to NVivo 12 software (QSR International Pty Ltd, 2020). The results were synthesised using thematic analysis,[14 23] chosen for its flexibility and ability to aid identification and interpretation of patterns or themes in a dataset.[23] Using an inductive process and mindful of the research aim to develop an understanding of the barriers and facilitators to accessing and utilising SRH, the researcher (MP) immersed herself in the data, coded the data line by line, grouped the codes into themes, reviewed, defined and named them, and produced the report. Direct results were coded, plus authors' conclusions provided they were supported by the results of the respective study. To ensure rigour in the analysis, a second experienced researcher (JMM) reviewed the emergent codes and themes, and questioned the assumptions and rationale for decisions made.

RESULTS

The search results at each stage are illustrated in figure 1.

The searches identified 3403 articles. After duplicates were removed, 2513 articles were screened and 23 included.

Included studies were of qualitative or mixed-methods design, the majority conducted in the USA (n=17), plus the UK (n=2), Australia (n=2) and Canada (n=2). Purposive sampling was used to recruit participants predominantly from homeless shelters or clinics providing care to people experiencing homelessness. Most participants were themselves experiencing homelessness (n=22) and ranged in age from 14 to 57 years.

In some studies (n=13), the sample comprised only of females, while others (n=12) focused only on young people. Of 16 studies reporting participants' race/ethnic background (all in the USA), in five the majority

of participants were White/Caucasian and in 11 they were mostly of mixed race (n=4) or Black, African American (n=7). Sexual orientation was reported in only four studies; in each, the majority of participants identifying themselves as heterosexual. No study focused exclusively on LGBTQ+ people. Although reported in only eight studies, participants commonly had a history of pregnancy (n=8) and adverse pregnancy outcomes (eg, miscarriage, abortion) (n=2). A few studies explored the views or experiences of healthcare providers (n=5), support workers or other stakeholders (n=5). Participant characteristics are detailed in online supplemental file 3.

Critical appraisal (results in online supplemental file 4) was frequently hindered by a lack of information and detail. Although aims and findings were clearly stated in all studies, the relationship between participants and researchers was not commonly reported, nor was it always possible to assess the rigour of data analysis. All studies informed the review to some extent. Sensitivity analysis indicated that including studies with lower-quality results did not affect this review's conclusions, although studies achieving higher-quality appraisal results contributed more to the findings' conceptual richness.

Based on the analysis, five themes grouped into two categories were generated (see table 2): (i) individual-level factors (ie, characteristics of the clients): complexity, feelings and knowledge and (ii) organisational factors (ie, characteristics of care providers

Table 2 Subthemes identified from data analysis

Theme	Subthemes
Complexity: refers to the precarious living conditions associated with homelessness, including but not limited to transient lifestyle, lack of routine, economic hardship, limited job opportunities, addiction, and prioritisation of immediate survival needs	
Barriers	Transient and unpredictable lifestyles Lack of routine Addiction to drugs and/or alcohol Prioritisation of immediate needs (accommodation, food) Limited income and/or lack of health insurance
Facilitators	None identified
Feelings: refer to individuals' perceptions of disease risk and treatment, and how welcome individuals felt when interacting with the healthcare system	
Barriers	Perceived stigma and lack of respect and understanding by healthcare providers Feelings of embarrassment about sexual behaviours and towards procedures involved Fear about screening process, results and disease Lack of personal efficacy and low self-worth Low perceived need of disease risk and treatment
Facilitators	Decision ownership Trusting relationships Fear of unintended consequences
Knowledge: refers to health literacy, and knowledge about service and treatment availability as well as navigation	
Barriers	Lack of knowledge on service availability (including access to contraceptives), navigation and location Limited health literacy Misconceptions Lack of knowledge on how to access health insurance
Facilitators	Improved knowledge about the range of birth control methods and availability of free services Timely information to young people
Patient/provider interaction: service users' experiences and views of healthcare consultations	
Barriers	Lack of understanding of people experiencing homelessness Lack of interaction opportunities for support workers Difficulties engaging in health conversations (healthcare staff)
Facilitators	Staff training Effective communication Consideration of context (people's life circumstances) Holistic, flexible, trauma-informed care
Healthcare system: this refers to the organisation, nature and delivery of the healthcare system, including hours of operation, resources, appointment systems, availability and accessibility	
Barriers	Lack of flexibility in service organisation and delivery (eg, restricted contraceptive practices, hours of operation, appointment system) Affordability (availability and costs of testing and treatment for sexually transmitted infections) Location Discontinuity of care
Facilitators	Improved accessibility (extending clinic hours, decreasing waiting times) Provision of care at familiar settings (eg, drop-in centres) Integration of sexual and reproductve healthcare (SRH) with other health services Accessible written information Provision of incentives and free supplies of contraceptives Involvement of people with lived experience of homelessness

Table 3 Illustrative quotations for each theme

Individual-level factors		Quotation and reference
Complexity	Barrier	*"Once you're homeless you don't think to go to a hospital or a GP or you don't think… Normal daily routine is missing for you. You're like all over the place really."* [Participant experiencing homelessness[27]] *"And when you're struggling for things like food and other stuff, well, um, then buying condoms is not gonna be the highest thing on the list of what you're doing."* [Participant experiencing homelessness[28]] *"And so if you have to just eliminate a couple of things just to keep my mind focused - children got to school, okay, I might have to go to work, I'm trying to get this housing….you can't stop to take care of your health sometimes."* [Service user[29]] *"Our findings suggest that hormonal contraception was not conducive to homeless lifestyles characterised by transience and unpredictability."* [Author[12]]
Feelings	Barrier	*"Seriously, I was like screaming, like 'OW' and the female told me that is couldn't be that bad. She was so rude. ….It was such a terrible experience."* [Service user[39]] *"I felt so disrespected and judged."* [Participant experiencing homelessness[28]]
	Facilitator	*"…the threat of rape as a trans man is so real that I just have to have the implant."* [Participant experiencing homelessness[28]] *"Once a year I get tested for HIV and hepatitis… you never know when you are going to have a disease…It's my life and I treasure it."* [25-year-old participant experiencing homelessness[30]]
Knowledge	Barrier	*"Many of the female participants whole-heartedly believed that herpes could not be spread unless the infected partner had visible lesions."* [Female health educator[25]]
	Facilitator	*"Participants' process of selecting birth control was further facilitated by knowledge gained from other drop-in centre staff members."* [Author[41]]
Organisational factors		
Patient/provider interaction	Barrier	*"I probably had stereotypes about homeless adolescents, viewing them as poor, unsophisticated and aimless."* [Male educator[25]] *"Feeling like doctors just think we're bad people, and that we don't know what we're talking about, you know? So some people just don't want to go have bad experiences in hospitals and with doctors who treat them like crap. So people just don't go then."* [Participant experiencing homelessness[28]]
	Facilitator	*"I think that the training that we experienced was extremely helpful in allowing me to begin to examine my biases and assumptions with homeless youth."* [Male educator[25]] *"If I went in there with my mom or an adult whatever, the doctor would talk to her in a way, now I'm going in there without her I want him to talk to me that way. I am the one grown up. I am the one in charge of my life and body."* [Service user[39]]
Healthcare system	Barrier	*"They want you to go through a process…but at times I be needing it at that moment."* [Service user[29]] *"Wait for an appointment at clinics serving homeless women was a minimum of 2 months."* [Author[36]]
	Facilitator	*"…knowing you can get the services for free, it's actually really useful and you feel safe."* [*Participant experiencing homelessness*[27]] *"Most useful and dignity-promoting healthcare services are those that account for the context of their lives."* [Author[39]]

GP, general practitioner.

and health services): patient/provider interaction and healthcare system.[24]

Selected quotations for each theme are presented in table 3.

Individual-level factors

Complexity

Barriers

The transient and unpredictable lifestyles that homelessness creates can render identification and location of SRH services and adhering to timed appointments difficult irrespective of age and gender,[12 25] as suggested by health educators and people experiencing homelessness. The latter suggest that maintaining dosing schedules or follow-up attendance for contraception (eg, implants, intrauterine methods) can be challenging due to lack of routine.[12]

Addiction issues can negatively affect people's sexual health decisionmaking and exacerbate risks[26] (eg, substance use among youth has been associated with reduced condom use[12]). Many reported using drugs or alcohol during their last sexual encounter, leading to pregnancy.[12]

Attempting to secure accommodation and meet immediate needs such as finding food can lead people experiencing homelessness to deprioritise contraception and STI testing across the age spectrum and irrespective of gender.[27–33] Furthermore, limited income and/or lack of health insurance (where applicable) impact ability to meet contraceptive costs and travel to attend screening, treatment and prenatal care.[8 12 31 34 35]

Facilitators

None were identified.

Feelings

Barriers

People experiencing homelessness highlight a perceived lack of respect by and trust in service providers to maintain confidentiality, deterring some, particularly

women, from seeking SRH.[36 37] Others feel stigmatised or judged,[26 28 38] believing that they receive substandard, uncaring services.[29] Encountering unwelcoming, insensitive or negative staff at clinics can deter them from further visits and engagement with the healthcare system.[27 28 39] Shame and embarrassment can prevent many young women from speaking to adults about their sexual behaviours.[39] Those identifying as homosexual encountered physicians holding assumptions of heteronormativity and ill-informed about their sexual health needs.[39]

Another common concern raised by people experiencing homelessness and staff was limited privacy in shelters.[40] Fear of the screening process, results[33 40] and the disease itself also negatively affected take-up.[33]

Lack of personal efficacy and low self-worth were associated with low utilisation of screening, with low self-worth and a history of trauma (eg, domestic abuse) also increasing the risk of neglect of health.[40] Low perceived need to attend services unless significant symptoms arise has been acknowledged by people experiencing homelessness as affecting their perception of the importance of accessing services.[26]

Facilitators

Service providers suggest that enabling young females experiencing homelessness to take ownership of their decisions can facilitate better sexual healthcare and contribute to increased contraceptive uptake,[10] as can establishing connection and trusting relationships with one another and with healthcare staff.[27 41] Fear of rape while on the streets, of infection or the consequences of unintended pregnancy can serve as motivators resulting in regular use of preventative measures and testing among youth, especially females.[28 30 41]

Knowledge

Barriers

A wide range of providers as well as people experiencing homelessness suggest that lack of knowledge of SRH service availability and location are barriers to accessing STI testing and contraceptives across the age spectrum, irrespective of gender.[25 26 33 38 42]

Being poorly informed and unaware of the asymptomatic nature of a disease (eg, chlamydia) and respective screening may result in young people experiencing homelessness not seeking care.[31] Being uniformed about STI risks (eg, HIV) or prospects of a cure (eg, chlamydia) can deter testing.[31 40] Misconceptions about specific conditions (eg, AIDS as a disease only experienced by homosexual people) may lead to denial about the need for testing.[40] Furthermore, erronerous beliefs such as associating birth control pills with abortion or increased risk of cancer can negatively affect use of contraception in women of any age.[36] Not knowing how to obtain and maintain health insurance can be a barrier to accessing sexual health services by youth.[33]

Facilitators

People experiencing homelessness suggest that improved knowledge about the range of birth control methods and availability of free services can help women of all ages feel safe and improve uptake.[27 41] For young teens it is important to obtain timely information about reproductive health and STIs.[33] Young people suggest social media platforms and text messaging as effective means of providing advice on sexual health, particularly when staff are engaging and helpful in explaining relevant concepts.[10]

Organisational factors

Patient/provider interaction

Barriers

A lack of cultural understanding of people experiencing homelessness can lead to stereotypical misconceptions and biases against them.[28 32] Lack of opportunity for support workers in shelters to have conversations about personal issues has been reported as a barrier to encouraging residents to obtain contraception.[26] Communication issues can raise barriers for healthcare service providers, including their own discomfort in talking about HIV, difficulties persuading patients to have blood tests, and in conveying the concept of self-efficacy to youth that experience homelessness.[43]

Facilitators

Staff training can promote self-awareness of unconscious biases and preconceptions towards people experiencing homelessness. Both providers and clients suggest that positive staff attitudes and effective communication can influence engagement of people experiencing homelessness with SRH, especially youth.[10] Valued professional attributes highlighted by young females as well as healthcare providers included being genuine, not overwhelming, sharing own experiences, and using 'soft words' when providing advice, particularly when discussing survival sex.[10 44] Both health educators and service users proposed that healthcare providers, including reception staff, needed to be respectful and non-judgemental, recognising young people as autonomous adults.[25 26 38 39 44]

Sufficient time for effective communication, allowing healthcare providers to take into account people's life circumstances, is considered important.[39] Given that many experiencing homelessness have histories of trauma and sexual and/or domestic abuse, personalised, compassionate care sensitive to individuals' concerns and preferences is recommended.[26] A trauma-informed, flexible approach is considered especially beneficial when working with adolescents.[34] Young females experiencing homelessness suggest that an environment conducive to discussing sex rather than one inciting fear can reduce existing anxieties and enable them to ask questions and seek care.[39] Youth, as well as programme providers, suggest that adopting

a holistic approach and treating the client as an equal conveys a sense of genuine care.[34]

Healthcare system

Barriers

An important barrier for women experiencing homelessness, exacerbated by precarious living conditions, is the inflexibility of service organisation and delivery, including restricted contraceptive practices (eg, being unable to obtain contraception in one visit), limited clinic hours and long waiting times.[27 29 36] Other barriers perceived by people experiencing homelessness relate to affordability such as the availability and costs of testing and treatment for STIs, the price of condoms, health insurance plans that do not cover purchase, as well as proximity of clinics and discontinuity of care.[12 28 36 38]

Facilitators

People experiencing homelessness suggest that improving accessibility by extending SRH clinic hours (eg, to evening and weekends), decreasing waiting times, testing by default and opt-out testing can improve access and uptake.[36 43] Both they and support staff, as well as programme providers, suggest that SRH provision in familiar settings such as shelters or drop-in centres providing convenient, on-site healthcare can break down barriers.[26 34] They also recommend integrating sexual health promotion with other disciplines, in the context of promoting overall health and well-being.[34]

Accessible written information can increase knowledge, awareness and uptake of services. Peer mentors (eg, a programme provider close in age) can play a key part in providing basic information and connecting young people to healthcare providers.[34] Women experiencing homelessness suggest that free bus tokens, organised transport to SRH centres and use of mobile clinics are all initiatives that can overcome distance and financial barriers.[36] Similarly, programme providers and users both support provision of incentives (eg, phones, vouchers) to motivate young people experiencing homelessness to initially get involved in a sexual health programme.[10 31 34 41]

Patient recommendations include a need for increased availability and distribution of condoms and lubricant supplies, with greater targeting of youth who are injecting substances.[12 28] Actively involving individuals with current or previous experiences of homelessness in the development or delivery of a SRH programme increases its likelihood of meeting the needs of the target population.[34]

DISCUSSION

This review suggests that access to and utilisation of SRH for people who experience homelessness are influenced by both individual-level and organisational barriers. Themes identified include complexity, feelings, knowledge, patient/provider interaction and the healthcare system. Notably, every theme except for complexity has both facilitators and barriers, showing their duality.

Interpretation of the findings indicates a significant proportion of barriers mirroring conceptualisations of access to SRH for the general population.[24] However, people experiencing homelessness find themselves in living conditions marked by survival, precariousness and stigmatisation, plus external constraints that disproportionately limit their access to and utilisation of SRH.[28 30] For example, although long waiting times are a barrier for everyone,[36 45] the transient nature of homelessness makes it harder for people experiencing homelessness to attend SRH services; they are forced to prioritise whether the best use of their time is to wait for treatment or to meet a basic need (eg, find a bed for the night).[36] This highlights the need for a tailored approach that takes into account the complexity of the living conditions and the psychosocial needs of patients.

Although difficulties in accessing and utilising SRH appear similar across the whole spectrum of people experiencing homelessness, specific personal characteristics raise additional barriers. For example, there are reports that young people feel a lack of autonomy when it comes to decisions about their sexual health, which is worsened if healthcare providers treat them in a paternalistic way and/or make stereotypical assumptions.[25 46] In addition, Begun and colleagues[28] recently found that discussion around contraception can be incomprehensible to young people who also lack knowledge on how and where to access contraceptive services.

Some evidence suggests a lack of awareness among healthcare professionals of the sexual health needs of young people of sexual orientations different from heterosexuality, creating barriers for these groups who need sexual advice the most.[39] Also, some of the SRH experiences and needs of women compared with men experiencing homelessness may differ. For example, younger women are particularly at risk of violence and sexual assault[47] as well as adverse pregnancy outcomes, making them particularly vulnerable to resumed substance use, which can affect decision making over SRH.[12] These findings support a need to reconfigure SRH and education in ways that are considerate of people's diverse experiences, concerns, needs and trauma history. Building meaningful and trusting relationships appears crucial to any efforts aiming to promote engagement of people who experience homelessness with SRH and to remove barriers to accessing care.[28 34 44]

We recognise the influence of both the characteristics of the population and the healthcare system on the utilisation of SRH by people who experience homelessness. However, although increased knowledge and awareness are needed especially among

youth,[36] our findings suggest that healthcare systems and care delivery should receive greater attention to improve access.[24] Moreover, any successful programme developed to meet the sexual health needs of people experiencing homelessness must begin with basic needs (eg, shelter) and a better understanding of how homelessness may impact motivation to access and use SRH.[36] Given that people experiencing homelessness are among the most marginalised and vulnerable in high-income societies, with severe inequities across a wide range of health outcomes,[2] it is important for interventions to begin early in life with policies to address the upstream causes of exclusion.[48] In parallel, it is important to provide holistic healthcare, and intensive "cross-sectoral policy and service action to prevent exclusion and improve health outcomes in individuals who are already marginalised".[2]

FUTURE RESEARCH

Existing research points to the effectiveness of community sexual health programmes for youth experiencing homelessness informed by a participatory action process and based on holistic, trauma-informed care.[10 34] Further research into patterns of SRH, predictors of service utilisation, and attrition of treatment could help establish services that better meet the needs of those experiencing homelessness, including triage and/or tailored services for specific subgroups. This could support commissioners and policymakers in understanding how to best direct resources towards the most vulnerable and bring about necessary structural/policy changes.

The studies included in this review lacked diversity particularly regarding people who identify as LGBTQ+. Yet transgender and gender-nonconforming people have twice the risk of experiencing homelessness compared with the general population,[49] with homophobia and other negative attitudes "often normalised in shelters, creating significant barriers to safe, accessible, and supportive services".[50] Research into the specific SRH needs of this group are warranted, as are the needs of people with disabilities and couples, through exploring innovative models of SRH to meet diverse characteristics and contexts.

Future studies could also investigate: (1) mental health as a comorbidity and driver of behaviour; (2) the influence of partners on an individual's autonomy regarding their healthcare; (3) whether seeing women in a women's centre might be beneficial and, conversely, whether seeing couples could help with supporting healthy relationships and reducing cross-infection; and (4) whether past experiences of losing children to social services care affect attitudes towards and willingness to engage with healthcare services.

STRENGTHS AND WEAKNESSES

The review's systematic and methodologically robust approach has synthesised the barriers associated with low uptake of care and access to services in a transparent and detailed way, and provides recommendations on how the barriers can be overcome to facilitate better SRH outcomes for people who experience homelessness, including through changes in practice and further research.

The fact that most studies were conducted in the USA is a limitation. As the characteristics of healthcare systems and policies for the target population vary among countries, some findings may not be transferable to other countries. Transferability of findings to, for example, people with disabilities and those from LGBTQ+ communities, may also be limited. In mitigation, we have provided as many details as possible about the context and study characteristics to enable assessment of the relevance and appropriateness of the review findings to other setting and populations.

CONCLUSIONS

Both individual and organisational factors influence the utilisation of and access to SRH for people experiencing homelessness. Considering the complexity and diversity of the living conditions associated with homelessness, greater emphasis in efforts to improve access could best be placed on factors related to health services and provision of care.

Robust evidence-based interventions that increase this group's access to long-term SRH as well as screening for STIs are needed, along with the engagement of people experiencing homelessness in their design and implementation.

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Contributors MP was responsible for the conception and design of the study, acquisition of data, data analysis and interpretation, and drafting the article. JMM was responsible for the conception and design of the study, acquisition of data, data analysis and interpretation, and critically reviewing the article. LB was responsible for the design of the study, acquisition of data, and critically reviewing the article. ESC was responsible for the design of the study and critically reviewing the article. LW was responsible for data interpretation, critically reviewing the article, and advising on dissemination plans. JS was responsible for the conception and design of the study and critically reviewing the article. All authors read and approved the final manuscript.

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REFERENCES

1 Collins J. *Characterising homeless people in Scotland: can oral health, health and psycho-social wellbeing enhance the ethos typology of homelessness*. Dundee: University of Dundee, 2012.
2 Aldridge RW, Story A, Hwang SW, *et al*. Morbidity and mortality in homeless individuals, prisoners, sex workers, and individuals with substance use disorders in high-income countries: a systematic review and meta-analysis. *Lancet* 2018;391:241–50.
3 Freeman R, Doughty J, Macdonald ME, *et al*. Inclusion oral health: advancing a theoretical framework for policy, research and practice. *Community Dent Oral Epidemiol* 2020;48:1–6.
4 Link H. *The health and wellbeing of people who are homeless: findings from a national audit*. London: Homeless Link, 2010.
5 Rosengard A, Laing I. *Bridging the gaps and improving the response. Independent evaluation of NHS Lanarkshire's Health and Homelessness Team*. Lanarkshire: North Lanarkshire Council, 2010.
6 Partnership HL. *Health care and people who are homeless. commissioning guidance for London*. London: Healthy London Partnership, 2016.
7 Burrows M, Edgar R, Fitch T. *More than a statistic*. London: Healthy London Partnership, 2016.
8 Stringer M, Averbuch T, Brooks PM, *et al*. Response to homeless childbearing women's health care learning needs. *Clin Nurs Res* 2012;21:195–212.
9 Noell J, Rohde P, Ochs L, *et al*. Incidence and prevalence of chlamydia, herpes, and viral hepatitis in a homeless adolescent population. *Sex Transm Dis* 2001;28:4–10.
10 Aparicio EM, Kachingwe ON, Phillips DR, *et al*. Holistic, trauma-informed adolescent pregnancy prevention and sexual health promotion for female youth experiencing homelessness: initial outcomes of Wahine Talk. *Child Youth Serv Rev* 2019;107:104509.
11 Pleace N, Jones A, England J. *Access to general practice for people sleeping rough*. York: The University of York, 1999.
12 Hathazi D, Lankenau SE, Sanders B, *et al*. Pregnancy and sexual health among homeless young injection drug users. *J Adolesc* 2009;32:339–55.
13 Carlson JL, Sugano E, Millstein SG, *et al*. Service utilization and the life cycle of youth homelessness. *J Adolesc Health* 2006;38:624–7.
14 Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Med Res Methodol* 2008;8:45.
15 Methley AM, Chew-Graham C, Campbell S, *et al*. Experiences of UK health-care services for people with multiple sclerosis: a systematic narrative review. *Health Expect* 2015;18:1844–55.
16 Denny E, Khan KS. Systematic reviews of qualitative evidence: what are the experiences of women with endometriosis? *J Obstet Gynaecol* 2006;26:501–6.
17 Lin C. Revealing the "essence" of things: using phenomonology in LIS research. *QQML* 2013;2:469–78.
18 Cooke A, Smith D, Booth A. Beyond PICO: the spider tool for qualitative evidence synthesis. *Qual Health Res* 2012;22:1435–43.
19 Ouzzani M, Hammady H, Fedorowicz Z, *et al*. Rayyan—a web and mobile app for systematic reviews. *Syst Rev* 2016;5:210.
20 Critical Appraisal Skills Programme. CASP qualitative research checklist, 2017. Available: http://docs.wixstatic.com/ugd/dded87_25658615020e427da194a325e7773d42.pdf [Accessed 2 Mar 2018].
21 Dixon-Woods M, Bonas S, Booth A, *et al*. How can systematic reviews incorporate qualitative research? A critical perspective. *Qual Res* 2006;6:27–44.
22 Flemming K, McCaughan D, Angus K, *et al*. Qualitative systematic review: barriers and facilitators to smoking cessation experienced by women in pregnancy and following childbirth. *J Adv Nurs* 2015;71:1210–26.
23 Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77–101.
24 Penchansky R, Thomas JW. The concept of access: definition and relationship to consumer satisfaction. *Med Care* 1981;19:127–40.
25 Rew L, Rochlen AB, Murphey C. Health educators' perceptions of a sexual health intervention for homeless adolescents. *Patient Educ Couns* 2008;72:71–7.
26 McGregor F, Stretch R, Robinson A, *et al*. Nurse-led sexual health clinics in hostels for homeless people. *Nurs Times* 2018;114:42–6.
27 Shah P, Koch T, Singh S. The attitudes of homeless women in London towards contraception. *Prim Health Care Res Dev* 2019;20:e131.
28 Begun S, Combs KM, Torrie M, *et al*. "It seems kinda like a different language to us": homeless youths' attitudes and experiences pertaining to condoms and contraceptives. *Soc Work Health Care* 2019;58:237–57.
29 Kennedy S, Grewal M, Roberts EM, *et al*. A qualitative study of pregnancy intention and the use of contraception among homeless women with children. *J Health Care Poor Underserved* 2014;25:757–70.
30 Côté P-B. Sexual health services for homeless youth: a qualitative analysis of their experiences. *J Soc Serv Res* 2019;45:429–43.
31 Henning D, Alice R, Sanci L, *et al*. Screening for Chlamydia trachomatis: barriers for homeless young people. *Aust J Adv Nurs* 2007;24:8–13.
32 HartwellSW. Homeless men and HIV: barriers to adopting safer practices. *Res Sociol Health Care* 1994;11:89–104.
33 Dang MT, Amos A, Dangerfield M, *et al*. A youth participatory project to address STIs and HIV among homeless youth. *Compr Child Adolesc Nurs* 2019;42:222–40.
34 Aparicio EM, Phillips DR, Okimoto T, *et al*. Youth and provider perspectives of Wahine Talk: a holistic sexual health and pregnancy prevention program developed with and for homeless youth. *Child Youth Serv Rev* 2018;93:467–73.
35 Dasari M, Borrero S, Akers AY, *et al*. Barriers to long-acting reversible contraceptive uptake among homeless young women. *J Pediatr Adolesc Gynecol* 2016;29:104–10.
36 Gelberg L, Browner CH, Lejano E, *et al*. Access to women's health care: a qualitative study of barriers perceived by homeless women. *Women Health* 2004;40:87–100.

37 Ensign J, Panke A. Barriers and bridges to care: voices of homeless female adolescent youth in Seattle, Washington, USA. *J Adv Nurs* 2002;37:166–72.
38 Rew L, Chambers KB, Kulkarni S. Planning a sexual health promotion intervention with homeless adolescents. *Nurs Res* 2002;51:168–74.
39 Oliver V, Cheff R. Sexual health: the role of sexual health services among homeless young women living in Toronto, Canada. *Health Promot Pract* 2012;13:370–7.
40 Draucker CB, Johnson DM, Johnson-Quay NL, *et al*. Rapid HIV testing and counseling for residents in domestic violence shelters. *Women Health* 2015;55:334–52.
41 Kachingwe ON, Anderson K, Houser C, *et al*. "She was there through the whole process:" exploring how homeless youth access and select birth control. *Child Youth Serv Rev* 2019;101:277–84.
42 Killion CM. Poverty and procreation among women. An anthropologic study with implications for health care providers. *J Nurse Midwifery* 1998;43:273–9.
43 Leidel S, Leslie G, Boldy D, *et al*. 'We didn't have to dance around it': opt-out HIV testing among homeless and marginalised patients. *Aust J Prim Health* 2017;23:278–83.
44 Holger-Ambrose B, Langmade C, Edinburgh LD, *et al*. The illusions and juxtapositions of commercial sexual exploitation among youth: identifying effective street-outreach strategies. *J Child Sex Abus* 2013;22:326–40.
45 Cassidy C, Bishop A, Steenbeek A, *et al*. Barriers and enablers to sexual health service use among university students: a qualitative descriptive study using the theoretical domains framework and COM-B model. *BMC Health Serv Res* 2018;18:581.
46 Manov A, Lowther L. A health care approach for hard-to-reach adolescent runaways. *Nurs Clin North Am* 1983;18:333–42.
47 Coates J, McKenzie-Mohr S. Out of the frying pan, into the fire: trauma in the lives of homeless youth prior to and during homelessness. *J Sociol Soc Welf* 2010;37:65–96.
48 Luchenski S, Maguire N, Aldridge RW, *et al*. What works in inclusion health: overview of effective interventions for marginalised and excluded populations. *Lancet* 2018;391:266–80.
49 Begun S, Kattari SK. Conforming for survival: associations between transgender visual conformity/passing and homelessness experiences. *J Gay Lesbian Soc Serv* 2016;28:54–66.
50 Abramovich A. Understanding how policy and culture create oppressive conditions for LGBTQ2S youth in the shelter system. *J Homosex* 2017;64:1484–501.
51 European Federation of National Organisations Working with the Homeless (FEANTSA). Ethos typology on homelessness and housing exclusion, 2005. Available: https://www.feantsa.org/en/toolkit/2005/04/01/ethos-typology-on-homelessness-and- housing-exclusion [Accessed 14 Aug 2020].
52 Levesque J-F, Harris MF, Russell G. Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *Int J Equity Health* 2013;12:18.
53 Faculty of Sexual and Reproductive Healthcare (FSRH). *Better care, a better future: a new vision for sexual and reproductive healthcare in the UK*. London: FSRH, 2015.
54 United Nations Development Programme (UNDP). Human Development Reports. Table 1: Human Development Index and its components. Available: http://hdr.undp.org/en/composite/HDI [Accessed 3 May 2018].
55 Robertshaw L, Dhesi S, Jones LL. Challenges and facilitators for health professionals providing primary healthcare for refugees and asylum seekers in high-income countries: a systematic review and thematic synthesis of qualitative research. *BMJ Open* 2017;7:e015981.
56 Hammarberg K, Kirkman M, de Lacey S. Qualitative research methods: when to use them and how to judge them. *Hum Reprod* 2016;31:498–501.

Supplementary File 1. Positionality statement

The authorship team consists of individuals with an academic, clinical and/or third sector background, all of whom have experience conducting research or providing healthcare to people experiencing homelessness. The first author (MP) who was also involved in the analysis of data is a researcher whose work mainly focuses on improving access to healthcare for vulnerable groups. In the last four years, she has also been actively involved as a volunteer with two services providing support to people experiencing homelessness, and those working on the streets (also known as 'sex workers'). Through this work, the researcher has become acutely aware of the impact of homelessness on people's health and the difficulties they encounter in accessing mainstream healthcare services. She recognises the importance of patient-centred care and values an approach where the individual's living situation, needs and wishes are taken into consideration when providing care.

Supplementary File 2. Search histories

Database	Search results 17/05/2018	Search results 22/04/2020	Total results
Embase	910	167	1077
Medline	1782	199	1981
Cinahl	233	40	273
SocINDEX	67	5	72
Total results	2992	411	3403
Total after deduplication	2213	300	2513

Embase <1974 to 2020 April 21>
Search history sorted by search number ascending

#	Searches	Results	Type
1	exp homeless person/	1898	Advanced
2	homelessness/	10933	Advanced
3	homeless*.ab,kw,ti.	12717	Advanced
4	(rough adj3 sleep*).ab,kw,ti.	86	Advanced
5	(street adj1 (person or people or youth)).ab,kw,ti.	355	Advanced
6	halfway house/	979	Advanced
7	hostel*.ab,kw,ti.	1105	Advanced
8	night shelter*.ab,kw,ti.	44	Advanced
9	winter shelter*.ab,kw,ti.	9	Advanced
10	(seek* adj1 shelter).ab,kw,ti.	144	Advanced
11	emergency accommodation.ab,kw,ti.	22	Advanced
12	temporary accommodation.ab,kw,ti.	62	Advanced
13	supported accommodation.ab,kw,ti.	170	Advanced
14	supported housing.ab,kw,ti.	379	Advanced
15	(vulnerabl* adj1 hous*).ab,kw,ti.	212	Advanced
16	(precarious* adj1 hous*).ab,kw,ti.	78	Advanced
17	unstable housing.ab,kw,ti.	475	Advanced
18	underhous*.ab,kw,ti.	10	Advanced
19	roofless.ab,kw,ti.	13	Advanced
20	no fixed abode.ab,kw,ti.	58	Advanced
21	no fixed address.ab,kw,ti.	32	Advanced
22	supported lodging.ab,kw,ti.	1	Advanced
23	sofa surf*.ab,kw,ti.	5	Advanced
24	(bed adj2 breakfast).ab,kw,ti.	34	Advanced
25	(liv* adj3 squat*).ab,kw,ti.	49	Advanced
26	squatter*.ab,kw,ti.	329	Advanced

27	runaway*.ab,kw,ti.	1667	Advanced
28	(risk adj3 evict*).ab,kw,ti.	23	Advanced
29	soup kitchen*.ab,kw,ti.	106	Advanced
30	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29	20412	Advanced
31	sexual health/	15800	Advanced
32	reproductive health/	16918	Advanced
33	family planning/	34511	Advanced
34	exp contraception/	152688	Advanced
35	condom/	19744	Advanced
36	exp sexually transmitted disease/	87613	Advanced
37	sexual health*.ab,kw,ti.	15866	Advanced
38	reproductive health*.ab,kw,ti.	19989	Advanced
39	(contraception or contraceptive).ab,kw,ti.	64907	Advanced
40	family planning.ab,kw,ti.	18753	Advanced
41	"condom*".ab,kw,ti.	24457	Advanced
42	safe sex.ab,kw,ti.	1599	Advanced
43	"sexually transmitted disease*".ab,kw,ti.	19424	Advanced
44	"sexually transmitted infection*".ab,kw,ti.	18448	Advanced
45	unintended pregnanc*.ab,kw,ti.	4865	Advanced
46	abortion*.ab,kw,ti.	64072	Advanced
47	(HIV adj3 screening).ab,kw,ti.	5982	Advanced
48	Human immunodeficiency virus/ and Screening/	5364	Advanced
49	31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48	393217	Advanced
50	30 and 49	1078	Advanced
51	limit 50 to yr="2018 -Current"	167	Advanced

Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Daily and Versions(R) <1946 to April 21, 2020>

Search history sorted by search number ascending

#	Searches	Results	Type
1	exp homeless person/	8743	Advanced
2	homelessness/	7567	Advanced
3	homeless*.ab,kf,ti.	10464	Advanced
4	(rough adj3 sleep*).ab,kf,ti.	64	Advanced
5	(street adj1 (person or people or youth)).ab,kf,ti.	289	Advanced
6	halfway house/	1057	Advanced
7	hostel*.ab,kf,ti.	819	Advanced
8	night shelter*.ab,kf,ti.	37	Advanced
9	winter shelter*.ab,kf,ti.	5	Advanced
10	(seek* adj1 shelter).ab,kf,ti.	134	Advanced
11	emergency accommodation.ab,kf,ti.	14	Advanced
12	temporary accommodation.ab,kf,ti.	50	Advanced
13	supported accommodation.ab,kf,ti.	110	Advanced

14	supported housing.ab,kf,ti.	312	Advanced
15	(vulnerabl* adj1 hous*).ab,kf,ti.	183	Advanced
16	(precarious* adj1 hous*).ab,kf,ti.	67	Advanced
17	underhous*.ab,kf,ti.	8	Advanced
18	unstable housing.ab,kf,ti.	314	Advanced
19	roofless.ab,kf,ti.	14	Advanced
20	no fixed abode.ab,kf,ti.	44	Advanced
21	no fixed address.ab,kf,ti.	25	Advanced
22	(risk adj3 evict*).ab,kf,ti.	20	Advanced
23	supported lodging.ab,kf,ti.	1	Advanced
24	sofa surf*.ab,kf,ti.	2	Advanced
25	(bed adj2 breakfast).ab,kf,ti.	25	Advanced
26	(liv* adj3 squat*).ab,kf,ti.	46	Advanced
27	squatter*.ab,kf,ti.	362	Advanced
28	runaway*.ab,kf,ti.	1631	Advanced
29	soup kitchen*.ab,kf,ti.	92	Advanced
30	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29	17153	Advanced
31	Sexual Health/	866	Advanced
32	Reproductive Health/	3224	Advanced
33	Family Planning Services/	24696	Advanced
34	Reproductive Health Services/	1861	Advanced
35	exp Contraception/	26632	Advanced
36	Condoms/	10185	Advanced
37	exp Sexually Transmitted Diseases/	337972	Advanced
38	"sexual health*".ab,kf,ti.	9929	Advanced
39	"reproductive health*".ab,kf,ti.	14760	Advanced
40	(contraception or contraceptive).ab,kf,ti.	60930	Advanced
41	family planning.ab,kf,ti.	40990	Advanced
42	"condom*".ab,kf,ti.	21473	Advanced
43	safe sex.ab,kf,ti.	1368	Advanced
44	"sexually transmitted disease*".ab,kf,ti.	17102	Advanced
45	"sexually transmitted infection*".ab,kf,ti.	13857	Advanced
46	"unintended pregnanc*".ab,kf,ti.	3661	Advanced
47	"abortion*".ab,kf,ti.	61858	Advanced
48	(HIV adj3 screening).ab,kf,ti.	4197	Advanced
49	HIV/ and mass screening/	355	Advanced
50	31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49	496939	Advanced
51	30 and 50	1969	Advanced
52	limit 51 to yr="2018 -Current"	199	Advanced

Database - CINAHL Plus with Full Text; SocINDEX

Search Screen - Advanced Search

#	Query	Results
S1	(SU "Sexual Health")	8,544

S2	(SU "Reproductive Health")	9,005
S3	(SU "Family Planning")	8,233
S4	(SU "Contraception")	12,732
S5	(SU "Condoms")	10,179
S6	(SU "Sexually Transmitted Diseases, Bacterial+")	21,958
S7	TI "sexual health" OR AB "sexual health"	9,525
S8	TI "sexual healthcare" OR AB "sexual healthcare"	102
S9	TI "reproductive health" OR AB "reproductive health"	9,266
S10	TI "reproductive healthcare" OR AB "reproductive healthcare"	332
S11	TI (contraception or contraceptive*) OR AB (contraception or contraceptive*)	26,415
S12	TI "family planning" OR AB "family planning"	10,009
S13	TI condom* OR AB condom*	15,390
S14	TI "safe sex" OR AB "safe sex"	1,208
S15	TI ("sexually transmitted" N1 (disease* or infection*)) OR AB ("sexually transmitted" N1 (disease* or infection*))	15,885
S16	TI (unintended N1 pregnanc*) OR AB (unintended N1 pregnanc*)	3,256
S17	TI abortion* OR AB abortion*	20,586
S18	TI HIV N3 screening OR AB HIV N3 screening	2,084
S19	(SU "Human Immunodeficiency Virus")	5,229
S20	(SU "Health Screening")	48,745
S21	S19 AND S20	211
S22	(S19 AND S20) OR (S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18)	101,535
S23	((SU "Homeless Persons") OR (SU "Homelessness") OR (SU "HOMELESS shelters")) OR TI homeless* OR TI rough N3 sleep* OR TI (street N1 (person* or people or youth*)) OR TI "halfway house" OR TI hostel* OR TI ((night OR winter) N3 shelter*) OR TI "emergency accommodation" OR TI "supported accommodation" OR TI "temporary accommodation" OR TI "supported housing" OR TI "supported lodging" OR TI vulnerabl* N1 hous* OR TI precarious* N1 hous* OR TI underhous* OR TI "unstable housing" OR TI roofless OR TI "no fixed abode" OR TI "no fixed address" OR TI risk N3 evict* OR TI sofa N3 surf* OR TI bed N3 breakfast OR TI ((live OR living) N3 squat*) OR TI squatter* OR TI runaway* OR TI "soup kitchen* OR AB homeless* OR AB rough N3 sleep* OR AB (street N1 (person* or people or youth*)) OR AB "halfway house" OR AB hostel* OR AB ((night OR winter) N3 shelter*) OR AB "emergency accommodation" OR AB "supported accommodation" OR AB "temporary accommodation" OR AB "supported housing" OR AB "supported lodging" OR AB vulnerabl* N1 hous* OR AB precarious* N1 hous* OR AB underhous* OR AB "unstable housing" OR AB roofless OR AB "no fixed abode" OR AB "no fixed address" OR AB risk N3 evict* OR AB sofa N3 surf* OR AB bed N3 breakfast OR AB ((live OR living) N3 squat*) OR AB squatter* OR AB runaway* OR AB "soup kitchen*	17,541
S24	S22 AND S23	401
S25	Limiters - Published Date: 20180101-20201231	45
	Cinahl	40
	SocINDEX	5

Searches undertaken 17/05/18

Embase <1974 to 2018 May 16>

Search history sorted by search number ascending

#	Searches	Results
1	exp homeless person/	895
2	homelessness/	9843
3	homeless*.ab,kw,ti.	10599
4	(rough adj3 sleep*).ab,kw,ti.	65
5	(street adj1 (person or people or youth)).ab,kw,ti.	336
6	halfway house/	1125
7	hostel*.ab,kw,ti.	1071
8	night shelter*.ab,kw,ti.	37
9	winter shelter*.ab,kw,ti.	6
10	(seek* adj1 shelter).ab,kw,ti.	113
11	emergency accommodation.ab,kw,ti.	15
12	temporary accommodation.ab,kw,ti.	53
13	supported accommodation.ab,kw,ti.	123
14	supported housing.ab,kw,ti.	324
15	(vulnerabl* adj1 hous*).ab,kw,ti.	151
16	(precarious* adj1 hous*).ab,kw,ti.	61
17	unstable housing.ab,kw,ti.	343
18	underhous*.ab,kw,ti.	9
19	roofless.ab,kw,ti.	13
20	no fixed abode.ab,kw,ti.	58
21	no fixed address.ab,kw,ti.	26
22	supported lodging.ab,kw,ti.	1
23	sofa surf*.ab,kw,ti.	4
24	(bed adj2 breakfast).ab,kw,ti.	30
25	(liv* adj3 squat*).ab,kw,ti.	45
26	squatter*.ab,kw,ti.	322
27	runaway*.ab,kw,ti.	1463
28	(risk adj3 evict*).ab,kw,ti.	17
29	soup kitchen*.ab,kw,ti.	99
30	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29	17630
31	sexual health/	12936
32	reproductive health/	14089
33	family planning/	36802
34	exp contraception/	153088
35	condom/	18670
36	exp sexually transmitted disease/	88571
37	sexual health*.ab,kw,ti.	12790
38	reproductive health*.ab,kw,ti.	16636
39	(contraception or contraceptive).ab,kw,ti.	61851
40	family planning.ab,kw,ti.	17920

41	"condom*".ab,kw,ti.	21303
42	safe sex.ab,kw,ti.	1440
43	"sexually transmitted disease*".ab,kw,ti.	18337
44	"sexually transmitted infection*".ab,kw,ti.	15077
45	unintended pregnanc*.ab,kw,ti.	4040
46	abortion*.ab,kw,ti.	65420
47	(HIV adj3 screening).ab,kw,ti.	5133
48	Human immunodeficiency virus/ and Screening/	5274
49	31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48	388294
50	30 and 49	910

Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily, Ovid MEDLINE and Versions(R) <1946 to May 16, 2018>

#	Searches	Results
1	exp homeless person/	7887
2	homelessness/	6796
3	homeless*.ab,kf,ti.	9038
4	(rough adj3 sleep*).ab,kf,ti.	46
5	(street adj1 (person or people or youth)).ab,kf,ti.	275
6	halfway house/	1049
7	hostel*.ab,kf,ti.	773
8	night shelter*.ab,kf,ti.	36
9	winter shelter*.ab,kf,ti.	3
10	(seek* adj1 shelter).ab,kf,ti.	108
11	emergency accommodation.ab,kf,ti.	10
12	temporary accommodation.ab,kf,ti.	40
13	supported accommodation.ab,kf,ti.	88
14	supported housing.ab,kf,ti.	273
15	(vulnerabl* adj1 hous*).ab,kf,ti.	129
16	(precarious* adj1 hous*).ab,kf,ti.	54
17	underhous*.ab,kf,ti.	7
18	unstable housing.ab,kf,ti.	234
19	roofless.ab,kf,ti.	13
20	no fixed abode.ab,kf,ti.	43
21	no fixed address.ab,kf,ti.	21
22	(risk adj3 evict*).ab,kf,ti.	16
23	supported lodging.ab,kf,ti.	1
24	sofa surf*.ab,kf,ti.	1
25	(bed adj2 breakfast).ab,kf,ti.	24
26	(liv* adj3 squat*).ab,kf,ti.	42
27	squatter*.ab,kf,ti.	354
28	runaway*.ab,kf,ti.	1460
29	soup kitchen*.ab,kf,ti.	82
30	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29	15190

31	Sexual Health/	180
32	Reproductive Health/	2394
33	Family Planning Services/	23858
34	Reproductive Health Services/	1543
35	exp Contraception/	25176
36	Condoms/	9485
37	exp Sexually Transmitted Diseases/	318741
38	"sexual health*".ab,kf,ti.	8175
39	"reproductive health*".ab,kf,ti.	12324
40	(contraception or contraceptive).ab,kf,ti.	57209
41	family planning.ab,kf,ti.	39456
42	"condom*".ab,kf,ti.	19630
43	safe sex.ab,kf,ti.	1271
44	"sexually transmitted disease*".ab,kf,ti.	16334
45	"sexually transmitted infection*".ab,kf,ti.	11701
46	"unintended pregnanc*".ab,kf,ti.	3081
47	"abortion*".ab,kf,ti.	58184
48	(HIV adj3 screening).ab,kf,ti.	3756
49	HIV/ and mass screening/	226
50	31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49	465920
51	30 and 50	1782

Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text;SocINDEX

#	Query	Results
S1	(SU "Sexual Health")	5,937
S2	(SU "Reproductive Health")	5,980
S3	(SU "Family Planning")	5,839
S4	(SU "Contraception")	9,515
S5	(SU "Condoms")	8,137
S6	(SU "Sexually Transmitted Diseases, Bacterial+")	16,446
S7	TI "sexual health" OR AB "sexual health"	6,805
S8	TI "sexual healthcare" OR AB "sexual healthcare"	69
S9	TI "reproductive health" OR AB "reproductive health"	6,428
S10	TI "reproductive healthcare" OR AB "reproductive healthcare"	196
S11	TI (contraception or contraceptive*) OR AB (contraception or contraceptive*)	19,874
S12	TI "family planning" OR AB "family planning"	7,980
S13	TI condom* OR AB condom*	11,867
S14	TI "safe sex" OR AB "safe sex"	973
S15	TI ("sexually transmitted" N1 (disease* or infection*)) OR AB ("sexually transmitted" N1 (disease* or infection*))	11,821
S16	TI (unintended N1 pregnanc*) OR AB (unintended N1 pregnanc*)	2,263
S17	TI abortion* OR AB abortion*	16,456
S18	TI HIV N3 screening OR AB HIV N3 screening	1,462
S19	(SU "Human Immunodeficiency Virus")	3,897
S20	(SU "Health Screening")	35,220
S21	S19 AND S20	124
S22	(S19 AND S20) OR (S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18)	77,776
S23	((SU "Homeless Persons") OR (SU "Homelessness") OR (SU "HOMELESS shelters")) OR TI homeless* OR TI rough N3 sleep* OR TI (street N1 (person* or people or youth*)) OR TI "halfway	

house" OR TI hostel* OR TI ((night OR winter) N3 shelter*) OR TI "emergency accommodation" OR TI "supported accommodation" OR TI "temporary accommodation" OR TI "supported housing" OR TI "supported lodging" OR TI vulnerabl* N1 hous* OR TI precarious* N1 hous* OR TI underhous* OR TI "unstable housing" OR TI roofless OR TI "no fixed abode" OR TI "no fixed address" OR TI risk N3 evict* OR TI sofa N3 surf* OR TI bed N3 breakfast OR TI ((live OR living) N3 squat*) OR TI squatter* OR TI runaway* OR TI "soup kitchen* OR AB homeless* OR AB rough N3 sleep* OR AB (street N1 (person* or people or youth*)) OR AB "halfway house" OR AB hostel* OR AB ((night OR winter) N3 shelter*) OR AB "emergency accommodation" OR AB "supported accommodation" OR AB "temporary accommodation" OR AB "supported housing" OR AB "supported lodging" OR AB vulnerabl* N1 hous* OR AB precarious* N1 hous* OR AB underhous* OR AB "unstable housing" OR AB roofless OR AB "no fixed abode" OR AB "no fixed address" OR AB risk N3 evict* OR AB sofa N3 surf* OR AB bed N3 breakfast OR AB ((live OR living) N3 squat*) OR AB squatter* OR AB runaway* OR AB "soup kitchen* 14,223

S24 S22 AND S23 300 (233 Cinahl 67 SocINDEX)

Supplementary File 3. Table of characteristics

Author, year	Country	Study design	Data collection method (s)	Participant characteristics	Other demographic data as reported by the authors	Type of homelessness	Barriers	Enablers
Aparicio et al., 2018	USA	Qualitative (part of a larger examination of Wahine Talk's)	Focus group interviews with homeless youth and an interdisciplinary team of providers One provider focus group Two group participants focus groups One individual participant interview (for one participants unable to meet during either focus group time offered)	N=11 young people experiencing homelessness Age (for the 20 youth participants who were enrolled in the bigger study): Mean age: 16.45 years (SD=1.57) (range: 14-19 years) Female N=4 female providers who deliver Wahine Talk: health educator, peer mentor, programme manager and medical provider.	The majority of participants were mixed race/ethnicity (65%) or Native Hawaiian and other Pacific Islander (30%). Sexually active participants (n=19) reported sexual initiation between 13 and 18 years old (M=14.9 years). 25% of study participants (n=5) were pregnant at least once prior to Wahine Talk - 15% of participants were pregnant once, 5% were pregnant twice, and 5% were pregnant three times. Fifteen percent of study participants had one to two miscarriages, 5% of participants had an abortion, 5% had one live births and 5% had two live births. 35% of participants (n=7) reported being in foster care at some point during their lives.	Homeless youth and youth at risk for homelessness	Complexity, Feelings, Patient-provider interaction, Healthcare system	Patient-provider interaction, Healthcare system
Aparicio et al., 2019	USA	Mixed-method quasi-experimental pilot study	In-depth individual and focus groups	N=51 young people experiencing homelessness Mean age: 17.74 (SD=2.47) (range: 14-22 years) Female (In depth interviews with 25 youth participants) N=7 providers involved in the Wahine Talk programme.	55% of participants identified as multi-racial, 37% identified as Native Hawaiian or other Pacific Islander (often of multiple ethnicities within this racial category), and 2% identified as Caucasian/White. Participants were allowed to select as many race and ethnicity categories as applied. 43% of participants identified as Native Hawaiian. 28% identified as Micronesian, 20% identified as Chinese, 12% identified as Japanese, and 14% identified as Samoan. Participants were aged, on average, 15.84 years at first sex. 39% of participants had a prior pregnancy, 22% had ever given birth to a child, 8% had ever had an abortion, and 29% had ever had a miscarriage. Nearly half (43%) of youth had been in foster care at some point during their lives.	Homeless youth that completed a newly developed, holistic sexual health program for homeless youth and youth at-risk for homelessness.	Patient-provider interaction, Knowledge, Healthcare system	Healthcare system, Patient-provider interaction, Feelings, Knowledge
Begun et al., 2019	USA	Phenomenological qualitative study	Semi-structured interviews using a topic guide	N=30 homeless youth aged 19.1 years (SD=0.8) 53.3% (n = 16) identified as women, 33.3% (n = 10) as men, and 13.3% (n = 4) as transgender, gender non-conforming, or gender-fluid.	The sample was diverse both in terms of racial identity and sexual orientation; however, most commonly reported was White (43.3%, n = 13), and straight/heterosexual (60.0%, n = 18). On average, youth had experienced homelessness for 8.9 (SD = 9.0) months. 30.0% (n = 9) has been in foster care at some point, and four young women (13.3%) indicated that they were currently pregnant. Pro-pregnancy attitudes were reported among 60% (N=18) of participants and 40% (N=12) hold anti-pregnancy attitudes.	Staying in an overnight youth shelter	Complexity, Knowledge, Feelings, Healthcare system, Patient-provider interaction	Healthcare system, Feelings

Author, year	Country	Study design	Data collection method (s)	Participant characteristics	Other demographic data as reported by the authors	Type of homelessness	Barriers	Enablers
Côté, 2019	Canada	Qualitative	Semi-structured interviews	N=33 homeless youth Mean age: 22 years (range: 18-25 years) 17 men and16 women	Time spent homeless: 1 month to 11 years. 32 participants were sexually active and 31 had already had sexual relationships within the context of homelessness. 29 youth had already experienced a romantic relationship within the context of homelessness and 18 had suffered violence (insults, threats, beatings, etc.) by one of their romantic partners. Six participants had already contracted an STBBI and eight young women had experienced a pregnancy in their lifetime. 12 participants, of which seven were women and five were men, had already engaged in prostitution within the context of homelessness. All of the participants had used sexual health services at least once during their homeless experience.	"situation and experience of young people between the ages of 13 and 24 who are living independently of parents and/ or caregivers, but do not have the means or ability to acquire a stable, safe or consistent residence" who have been homeless for more than three consecutive days within the past 6 months.	Feelings, Complexity	Feelings, Patient-provider interaction, Healthcare system
Dang et al., 2019	USA	Qualitative-youth participatory action research	Focus groups and in-depth interviews	Focus groups: N=22 homeless youth Mean age: 19.42 years. 68% were identified as male and 32% as female; Interviews: N=20 homeless youth Mean age: 20.75 years (range: 18-24 years) 70% males, 25% females and 5% transgender	Focus groups: 5% identified as multiracial, 32% as African American, 14% as Latino/Hispanic, and 9% as White. Interviews: 55% identified as African American, 25% as White and 20% as multiethnic. The majority were identified as heterosexual (60%). 30% and 10% were identified as non-heterosexual and other, respectively. 95% reported that they had received STI testing at least once in the past; 55% reported that they were tested within the past 3 months; 20% in the past 3–6 months; 5% in the past 6–12 months; 15% more than a year ago, and 5% reported that they had never been tested. The most frequently cited locations for STI testing were EDs, Planned Parenthood, and community clinics, respectively. The majority of participants (75%) reported that they had health insurance while only 15% reported that they had a "regular doctor."	Homeless youth attending a drop-in service.	Feelings, Complexity, Healthcare system, Knowledge	Knowledge, Healthcare system, Patient-provider interaction
Dasari et al., 2016	USA	Descriptive Mixed methods	(Survey=Quant) Interviews using semi structured interview guide with probes	N=15 homeless youth Mean age: 21 years (range:18-24 years) Female	8 identified as black, 5 as white and 2 as multiracial. Two of the 15 women were pregnant at the time of the study, 8 had a history of pregnancy, and of these four reported being pregnant more than twice.13 reported they did not pan on becoming pregnant in the next year. 9 reported currently using contraceptives and 6 not. 11 had intimate partner violence history and 4 (out of 15) had at some point experienced reproductive and/or sexual coercion.	Currently homeless or experienced recent homeless ness Defined as: occurrence of 2 or more nights within past 12 months when a women does not have a home , was told to leave her home, or was unable to stay at her home and forced to stay elsewhere.	Knowledge, Patient-provider interaction, Healthcare system	Healthcare system

Author, year	Country	Study design	Data collection method (s)	Participant characteristics	Other demographic data as reported by the authors	Type of homelessness	Barriers	Enablers
Draucker et al., 2015	USA	Qualitative Descriptive	Focus groups	N=18 Shelter residents- all were females Mean age: 35.8 years (SD = 10.40; range: 18 to 55 years) N=10 staf- all females	Eleven of the resident participants were White; four were African American; two were Biracial, and one was American Indian/Alaska Native. One participant identified as Hispanic. Eight of the shelter staff participants were White, and two were African American.	Resident in domestic violence shelter	Knowledge, Healthcare system	Patient-provider interaction, Healthcare system
Ensign & Panke, 2002	USA	Qualitative Ethnographic Descriptive	Focus groups & Individual Interviews	N=20 female adolescents experiencing homelessness Mean age: 18.2 years (range: 14-23 years)	The racial/ethnic mix of the women in the study was close to that of the clinic population overall (in the latter: 68% Caucasian, 12% each for native American and Hispanic, and 7% African American).	Clinic- based homeless. Self-identified as currently being homeless or having been homeless in the past 12 months, attending a youth clinic offering allopathic, naturopathic health care, mental health , HIV and substance abuse counselling	Complexity, Feelings, Patient-provider interaction, Healthcare system	Patient-provider interaction, Healthcare system
Gelberg et al., 2004	USA	Qualitative First stage of a mixed method study	Interviews	N=47 women experiencing homelessness Mean age: 35.6 (SD=10.6; range: 18-57 years)	22 women were African American, 12 European American, nine Latina, and one was Asian American. The ethnic background of three participants was missing. Eight of the 47 women were pregnant and 43%had at least one child under the age of 18. About 26% of the women reported some form of health insurance. Two women admitted being employed either full-time or part-time. One woman admitted to current prostitution as her current source of income. Other women in the sample were either on some form of public assistance (38%) or had no other stated source.	Chronically and episodically homeless pregnant women and non- pregnant women	Complexity, Feelings, Knowledge, Patient-provider interaction, Healthcare system	Patient-provider interaction, Healthcare system
Hartwell et al., 1994	USA	Ethnographic	Observation	2 homeless shelters Male Age range in the shelters: 18-65 years	The racial and ethnic composition within the shelter is relatively constant. On any given night, 60% of those who are sheltered are black, 20% are white, and the remaining 20% are Latino or of another ethnic background. Most are unemployed and the only structured activity many of the men have is Narcotics Anonymous or Alcoholics Anonymous.	Homeless males staying at night shelters	Complexity, Feelings, Knowledge, Healthcare system	Healthcare system

Author, year	Country	Study design	Data collection method (s)	Participant characteristics	Other demographic data as reported by the authors	Type of homelessness	Barriers	Enablers
Hathazi et al., 2009	USA	Qualitative Based on a 2 phased longitudinal study of young Injection drug users (IDUs)	Interviews Baseline interview with eligibility to participate for a series of 5 follow-up interviews.	N= 41 homeless young people injecting drugs Mean age: 21.7 (range: 16-28 years) 21 males and 20 females Injection drug users Injected ketamine at least once within past two years History of pregnancy	The majority (73.2%) were White/Caucasian, while 12.2% identified as of multiracial identity. 73.2% identified as heterosexual, 24.4% as bisexual, 4.9% as other/undecided and none as gay/lesbian. Young women were much likely to report being bisexual than young men (45% VS 4.8%). More men than women reported history of drug treatment (71.4% v. 50%) and mental health care (85.7% v. 65%). Although none had tested HIV positive 22% tested HCV positive (87.8% tested for HCV). Women were more likely to be tested for HCV than men (95% v. 81%), and women more commonly reported a positive result (30% v. 14.3%). The sample reported using a wide variety of drugs within the previous 30 days. A higher proportion of men than women reported using alcohol, marijuana and drugs. Twelve women became pregnant at least once for a total of 14 pregnancy events, which resulted in eight births, four miscarriages, one termination, and one current pregnancy. Among women, a birth was the most commonly reported outcome (10/20), whereas termination was the most common outcome reported among men (11/21). A higher proportion of women than men reported the most recent pregnancy ended in miscarriage (5/20 v. 3/21). Among women, pregnancy outcomes varied by age: women who gave birth to a child were older on average (21.8 year old) than women who terminated (18.8 years old) or experienced a miscarriage (18 years old).	Homeless at baseline interview. Majority self-identified as 'homeless travellers' who moved frequently between cities	Complexity, Healthcare system	Healthcare system
Henning et al., 2007	Australia	Qualitative	Semi structured interviews using 5 focus groups	N=25 young people experiencing homelessness Aged: 16-26 years 19 males and 6 females	Not reported.	Homeless young people who have lived in a variety of places since leaving home; with friends, on the street, youth refugees, or in supported accommodation; And attending an inner city clinic providing nurse led interventions to homeless young people	Complexity, Feelings, Knowledge, Healthcare system	Healthcare system
Holger-Ambrose et al., 2013	USA	Qualitative	Individual interviews-all four interviewers had extensive experience working with sexually exploited youth and came from diverse backgrounds	N=13 sexually exploited youth Aged: 14-22 years Female	6 identified their race as African-American, 2 Caucasian, 1 Native-American, and 4 multi-racial. 4 out of 13 participants identified their sexual orientation as gay, lesbian or bisexual. All of the participants experienced multiple types of sexual exploitation in venues ranging from private homes, spas, strip clubs, hotels, brothels and street prostitution. Most were exploited by 13 years of age. Nearly all had a pimp. All the participants experienced homelessness and substance use. The majority had been in government care in either a juvenile detention center, in foster care, hospitalized for mental health issues or in substance abuse treatment; most girls reported more than one type of placement.	Homeless youth from youth shelters, street corners or areas where exploited youth congregate as well as from a support group for girls who had been sexually exploited		Patient-provider interaction, Healthcare system

Author, year	Country	Study design	Data collection method (s)	Participant characteristics	Other demographic data as reported by the authors	Type of homelessness	Barriers	Enablers
Kachingwe et al., 2019	USA	Qualitative	In-depth focus group interviews (N=2) and one in-depth interview (N=1).	N=11 adolescents experiencing homelessness. Mean age: 15.64 years (SD= 1.29; range: 14-18 years) Female	Seven identified primarily as mixed race (N=7) or as Native Hawaiian and four as Pacific Islander (Micronesian, Samoan, or Tongan) (N=4) Number of pregnancies before 'Wahine Talk' sexual health program: 0-3. Number of pregnancies after entering 'Wahine Talk: 0). The majority of participants were sexually active (n=9), among whom age at first sex ranged from 13 to 18 years (M=15.1 years). None of the participants were using birth control when coming into the sexual health program, and the majority (n=8) had adopted a birth control method within the last five months while part of the larger program.	Homeless youth at a youth drop-in center that completed a newly developed, holistic sexual health program for homeless youth and youth at-risk for homelessness.	Feelings	Feelings, Patient-provider interaction, Healthcare system
Kennedy et al., 2014	USA	Qualitative Informed by Grounded Theory	Semi-structured interviews in English and Spanish	N=22 homeless women with children Mean age: 32 years (range: 20-44 years).	English or Spanish speaking. 5 identified as Black, 2 as Black, Native American, 5 as Hispanic, 3 as White, 1 as Black Native American, White, 1 as Asian, while 5 did not report their race. Had custody of at least one minor child. Sexually active with at least one man in the past year.	Currently housed or seeking housing in a family shelter	Complexity, Feelings, Knowledge, Healthcare system	Patient-provider interaction, Healthcare system
Killion,1998	USA	Ethnographic - Qualitative	Participatory Observation: including informal unstructured interviews with informants and interviews with a number of service providers.	Primary sample N=15 homeless pregnant women (in various staged of pregnancy) Aged: 18-39 years In addition: shelter administrators, landlords, social workers, nurses, physicians, housing officials, family members and significant others.	The primary sample consisted of African American, Latina, and Caucasian women. Three were married, two were cohabitating, four were divorced, and six were single; each had at least one other child. One woman had 13 children, although only 8 of them were with her during the time of the study. During the study, none of the women were employed and their education ranged from having attended high school to an associate degree.	Recruited from shelters	Complexity, Feelings, Knowledge	Healthcare system

Author, year	Country	Study design	Data collection method (s)	Participant characteristics	Other demographic data as reported by the authors	Type of homelessness	Barriers	Enablers
Leidel et al., 2017	Australia	Prospective Mixed Methods study	Semi structured Interviews by video chat a application	N=8 health care providers at a Homeless Health Care organisation (opt-out HIV testing study); 3 GPs, 4 practice nurses, and 1 practicioner	Not reported.	Health provision service for homeless and marginalised patients.	Patient-provider interaction	Healthcare system
McGregor et al., 2018	UK	Mixed-methods study (but only using data from qualitative part)	Semi structured interviews	14 residents (males and females) and 8 hostel staff	Not reported.	People living in hostels for homeless people	Complexity, Feelings, Knowledge	Patient-provider interaction, Healthcare system
Oliver & Cheff, 2012	Canada	Qualitative Multiple case study approach	Life history interviews & participant observation	N=8 young women experiencing homelessness living in Toronto	Not reported.	Recruited from shelters and from street visits to those not sheltered	Feelings, Knowledge, Patient-provider interaction	Patient-provider interaction, Healthcare system

Author, year	Country	Study design	Data collection method (s)	Participant characteristics	Other demographic data as reported by the authors	Type of homelessness	Barriers	Enablers
Rew et al., 2002	USA	Qualitative study based on a conceptual model of SH practices, synthesised from social learning behaviour and the theory of reasoned action.	Focus groups of 5 or 6 participants conducted over 6 months.	N=22 adolescents experiencing homelessness Randomly selected from the cross sectional sample of 425 participants in a survey study. Mean age: 16.18 years (range: 16-20 years) 11 females and 11 males	Most participants (82%) were White, one was American Indian, two were Hispanic, and one male did not indicate his ethnicity. The majority identified themselves as heterosexual; three (13.6%) were gay or lesbian, and four (18.2%) said they were bisexual. Focus group participants had been homeless an average of 37.8 months while those in the original sample reported being homeless for an average of 33.1 months.	Homeless adolescents who sought health and social services from a street outreach programme. Participants homeless an average 37.8 months	Complexity, Feelings, Knowledge, Patient-provider interaction, Healthcare system	Patient-provider interaction, Healthcare system
Rew et al., 2008	USA	Qualitative descriptive study	Data from qualitative open ended questions collected via email	N=13 health educators who had provided the street - based sexual health intervention to adolescents experiencing homelessness. 7 female (health educators) with a mean age: 35.7 years (range: 24-56 years) 6 male (health educators) with a mean age of 30.8 years (range: 29-34 years)	All the female educators had baccalaureate degrees in psychology or nursing and all but one had post-graduate education. One had completed a PhD in nursing. Six of the female educators were Caucasian and one was Hispanic. All male educators had baccalaureate degrees, 5 were enrolled in post-graduate education, and one had completed a PhD in social psychology. Four of the male educators were Caucasian, one was Hispanic, and one was Asian. Male and female educators were assigned to their respective gender-specific intervention groups. Only one male educator had previously worked with a group of homeless adolescents.	Homeless adolescents who sought social and health services from a street drop-in centre in an urban setting.	Complexity, Knowledge, Patient-provider interaction	Patient-provider interaction, Healthcare system
Shah et al., 2019	UK	Qualitative	Semi-structured interviews using a topic guide	14 English-speaking women with median age of 27 years, from two homeless shelters in central London.	Not reported.	Previously street homeless and/or living in temporary accommodation	Complexity, Healthcare system, Feelings, Patient-provider interaction	Patient-provider interaction, Healthcare system, Knowledge, Feelings

Author, year	Country	Study design	Data collection method (s)	Participant characteristics	Other demographic data as reported by the authors	Type of homelessness	Barriers	Enablers
Stringer et al., 2012	USA	Qualitative descriptive design	Self-administered brief demographic surveys and Focus Groups Guided by the Integrative Model of Behaviour Prediction and change	N=45 homeless, urban, childbearing women living in shelters Mean age: 28.7 years (range: 18-44 years)	English speaking The racial background included 73% (n = 33) Black, 9% (n = 4) White, 9% (n = 4) Hispanic, and 9% (n = 4) Other. The authors note that these demographic data are typical of women from the local community, with women being multiparous, Black, and heads of households. Approximately 87% of the participants had custody of their children. Approximately 87% (n = 39) of women were multiparous (parity range = 2-7 births), 9% (n = 4) of women were primiparous, and 4% (n = 2) nulliparous. All women (100%) considered themselves as heads of households.	Homeless, living in shelters	Complexity, Feelings, Knowledge, Healthcare system	Healthcare system

Supplementary File 4. Critical appraisal results

CASP elements	Aparicio et al., 2018	Aparicio et al., 2019	Begun et al., 2019a	Côté, 2019	Dang et al., 2019	Dasari et al.,2016	Draucker et al., 2015	Ensign & Panke, 2001	Gelbert et al., 2004	Hartwell et al., 1994	Hathazi et al., 2009	Henning et al., 2007
Was there a clear statement of the aims of the research?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Is a qualitative methodology appropriate?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Was the research design appropriate to address the aims of the research?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Was the recruitment strategy appropriate to the aims of the research?	Y	Y	Y	Y	Y	Y	Y	Y	Y	U	Y	Y
Were the data collected in a way that addressed the research issue?	Y	Y	Y	Y	Y	Y	Y	Y	Y	U	Y	Y
Has the relationship between researcher and participants been adequately considered?	Y	U	U	Y	Y	U	U	U	U	Y	N	U
Have ethical issues been taken into consideration?	Y	Y	Y	Y	Y	U	Y	Y	U	U	Y	Y
Was the data analysis sufficiently rigorous?	Y	Y	Y	Y	Y	Y	Y	U	Y	U	Y	U
Is there a clear statement of findings?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Supplementary File 4. Critical appraisal results

CASP elements	Holger-Ambrose et al.,2016	Kachingwe et al., 2019	Kennedy et al.,2014	Killion, 1998	Leidel et al., 2017	McGregor et al., 2018	Oliver & Cheff, 2012	Rew et al., 2002	Rew et al., 2008	Shah et al., 2019	Stringer et al.,2012
Was there a clear statement of the aims of the research?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Is a qualitative methodology appropriate?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Was the research design appropriate to address the aims of the research?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Was the recruitment strategy appropriate to the aims of the research?	Y	Y	N	Y	Y	U	Y	Y	Y	Y	U
Were the data collected in a way that addressed the research issue?	Y	Y	Y	Y	Y	Y	Y	Y	U	Y	Y
Has the relationship between researcher and participants been adequately considered?	Y	U	U	U	U	U	U	U	U	U	U
Have ethical issues been taken into consideration?	Y	Y	Y	U	Y	Y	U	Y	Y	Y	U
Was the data analysis sufficiently rigorous?	Y	Y	Y	U	Y	U	U	Y	Y	Y	Y
Is there a clear statement of findings?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y