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Factors influencing health-seeking behaviours of asylum seekers, refugees, and undocumented immigrants

A systematic review of peer-reviewed articles

Abstract
This review investigates the impact of personal and contextual factors on health-seeking behaviours in terms of health-related information and healthcare service needs and utilization among asylum seekers, refugees, and undocumented immigrants using an adapted framework based on an extended Longo health information model. The 73 peer-reviewed records included in this systematic review were obtained from WoS, Ebsco, and Scopus. This review shows that culture, religion, policy, and systematic inequalities may play three different roles for our studied population, including facilitators, barriers, and health-related information sources. The findings indicated that providing universal health-related information and healthcare services may not meet all of the healthcare needs of our study population. As a result, healthcare providers must take a cross-cultural approach when designing, developing, and delivering specific health promotion programmes, treating patients with respect and attention, and providing health-related information and healthcare services based on ethnic, cultural, religious, and migration statuses.

Keywords: Asylum seekers, contextual factors, health-seeking behaviour, personal factors, refugees, three-part impact, undocumented immigrants

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Introduction

By 2020, over 84 million people had been forcibly displaced worldwide, including 26.6 million refugees and over 4 million asylum-seekers on six continents, according to the UN High Commissioner for Refugees (UNHCR, 2022). Undocumented immigrants are another vulnerable minority living in other countries. In 2017, the Pew Research Center reported over ten million undocumented immigrants in the US (Lopez et al., 2021). Asylum seekers, refugees, and undocumented immigrants need access to healthcare and health information to stay healthy (Barkensjö et al., 2018; Biswas et al., 2011; Claassen & Jäger, 2018; Teunissen et al., 2014; Wong et al., 2016).

Our prior systematic review of 57 peer-reviewed papers within the EU context highlighted a significant gap in research pertaining to the health information behaviour of these populations in Europe (Ahmadinia et al., 2021), unlike the more extensive studies conducted in the United States, Australia, African and Asian countries (e.g., Chandler et al., 2012; Doocy et al., 2016; Furuta & Mori, 2008; Tomasi et al., 2022). This underscores the need for further research, which our current study addresses.

Health information-seeking behaviour (HISB) and healthcare-seeking behaviour (HSB) are the main focus of this study, where HISB is considered any possible situation in which a person needs, uses, finds, selects, or ignores any health-related information (Lalazaryan & Zare-Farashbandi, 2014). Healthcare-seeking behaviour is described as “any activity undertaken by people who perceive themselves to have a health issue or to be sick for the purpose of finding an appropriate remedy” (Ward et al., 1997). Studies on health-seeking behaviour have examined coping with a health-threatening situation, behaviour change, and preventive behaviour, as well as factors or predictors of information seeking (Zimmerman & Shaw, 2020). The health information acquisition model (Freimuth et al., 1989), Johnson's comprehensive model of information seeking (Johnson, 1997), Lenz's information-seeking patterns of clients (Lenz, 1984), and the transtheoretical model of health behaviour change (Prochaska & Velicer, 1997) were used to study various aspects of people's health-seeking behaviour. These models have examined patient health seeking behaviour from various angles, including stimulus, coping styles, goals, stages of change to live a healthier life, actively seeking health services or information, and expectations and health beliefs (Jones et al., 2015; Miller, 1989).

Building on our previous work, this study utilises an adapted version of the extended Longo health information model (Longo et al., 2010) to explore the health-seeking process of asylum seekers, refugees, and undocumented immigrants on a global scale, including both active and passive responses from users. This model examines how context and personality affect health information and service seeking. Health, care delivery, the information environment, and networks are contextual factors, while socioeconomic and behavioural factors are personal (Hirvonen, 2015). These two categories of factors are considered to influence information behaviour, either in terms of active health seeking or passive reception of health-related information.

"Users" in this study are asylum seekers, refugees, and undocumented immigrants living in different countries. This study compares health-related information or service-seeking behaviour among this population, which may face similar or different challenges based on personal or contextual factors in different countries. We aim to answer three broad research questions:

***RQ 1**: What personal and contextual factors influence the health-related information-seeking behaviour of asylum seekers, refugees, and undocumented immigrants?*
***RQ 2**: How do asylum seekers, refugees, and undocumented immigrants seek and use health information and services?*
***RQ 3**: Which health-related information sources do asylum seekers, refugees, and undocumented immigrants use to actively seek or passively receive health information?*

Methods
A literature search was conducted on March 11, 2022, and both the search and analysis of the found material followed the PRISMA guidelines (Moher et al., 2009) (see Supplementary 6 for more details). The inclusion criteria for this systematic review were adapted from the data collection process described by Lambert and Loiselle (2007) and were as follows: (a) published in English; (b) focus on actual behaviours of asylum seekers, refugees, and/or undocumented immigrants when seeking health-related information or healthcare services; (c) scholarly works published in peer-reviewed journals; (d) the inclusion of "health information seeking behaviour or health seeking behaviour or health utilisation or health need" (or with the US spelling of behavior and utilization) in the title or text; and (e) be original studies, not a brief review of an original study published in a conference paper.

This systematic review included original research articles that reported any personal or contextual factors influencing asylum seekers, refugees, and undocumented immigrants' healthcare-seeking behaviour without excluding any specific health-related need or utilization. The included studies investigated our target population's health-related information or health service-seeking activities rather than healthcare providers' interpretations. Studies on health-related information, needs, or utilisation were included if personal or contextual factors influenced our target population's healthcare-seeking behaviour. Indigenous ethnic minorities, subcultures, immigrants, and seasonal workers were excluded from studies on health-seeking behaviour. We excluded systematic reviews, literature reviews, editorial notes, and conference posters. All studies that did not focus on health-seeking behaviour were also excluded (i.e., human rights, health law, ambulatory care, safety science, mediators, health information systems, and health policy).

Research Model
We adapted the extended Longo health information model for our research (Longo et al., 2009). The expanded model addresses a new trend toward healthcare consumerism, where patients learn about their health issues and make treatment and management decisions (de Haes, 2006; Drain, 2003; Maly et al., 2004; Neuberger, 2000). This model accounts for both active seeking and passive receipt of health-related information, as well as individual characteristics that affect information use, and provides a more complete and accurate model of people's health-seeking behaviours and healthcare decision-making (Longo et al., 2009). This study used the main components of the extended Longo health information model to identify personal and contextual factors affecting active and passive health information reception among asylum seekers, refugees, and undocumented immigrants all over the world. Figure 1 presents an expanded Longo model-based framework for studying asylum seekers, refugees, and undocumented immigrants' health information and healthcare service-seeking behaviours. Contextual and personal factors influence health information and healthcare service needs and use in the adapted model. This systematic review excluded genetics, family medical history, and patient outcomes because we were unable to extract relevant data from the included studies. We also study our target population's health information sources. Thus, we modified the model to emphasise health-related sources in vulnerable populations' health-seeking rather than active seeking and passive receipt (Longo, 2005; Longo et al., 2009, 2010).

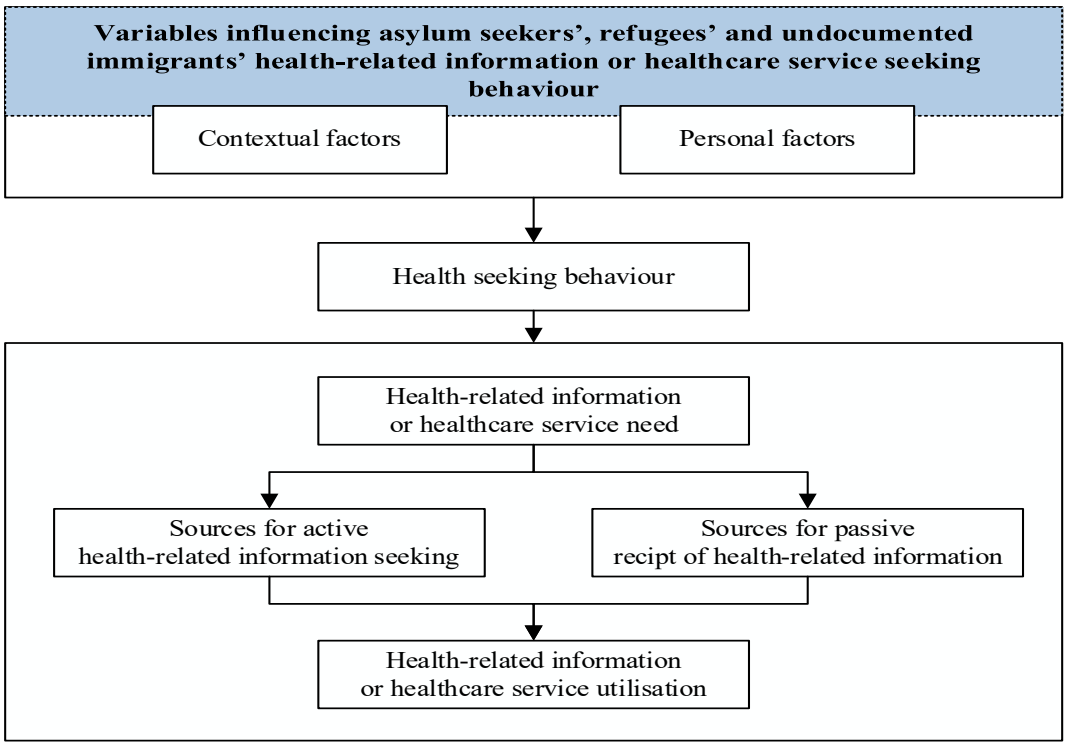

Figure 1. An adopted framework based on the expanded Longo model for investigating health-related information or healthcare service seeking, needs, and utilisation among asylum seekers, refugees, and undocumented immigrants in the world.

Information Sources and Search Strategy

We have employed three primary channels for data acquisition on scientific content including peer-reviewed journal articles, conference papers, books, and book chapters pertinent to our research, after consultation with information specialists. These channels include the Web of Science and Scopus platforms, as well as the use of EBSCOhost for accessing more specific datasets with studies relevant to our research.

- From the Web of Science, we strategically selected and searched databases such as the Web of Science Core Collection, KCI-Korean Journal Database, Medline, Russian Science Citation Index, and SciElo Citation Index to identify studies pertinent to our systematic review.
- From EBSCOhost, we accessed databases including Academic Search Complete, APA PsycInfo, APA PsycArticles, CINAHL, Communication & Mass Media Complete, and Library and Information Science & Technology Abstracts, which provide extensive coverage of Library and Information Science studies.
- Finally, we conducted searches in Scopus using our formulated search terms to locate relevant studies that might not be indexed in Web of Science, or the databases accessed through EBSCOhost (see Supplementary 5 for more details).

We included databases such as the KCI-Korean Journal Database and the Russian Science Citation Index to ensure comprehensive coverage of research on health-seeking behaviours, recognising that significant contributions might be published in different regions and might not be indexed in other databases. This review adapted a search statement consisting of free terms related to the main

objectives of the study, and truncation (*) as well as research subject terms and keywords. Asylum seekers, refugees, and undocumented immigrants' health-seeking behaviours were the primary research subjects in developing our search strategy. "Information literacy", "health behaviour", and "health communication" were the related MeSH (Medical Subject Headings) terms that we used to stay on track with this focus. The fundamental themes of our research field informed the selection of these subject terms. Moreover, we broadened the scope of our search to encompass a broader spectrum of terms that could be relevant, such as "health information", "health seeking", and "care seeking". This comprehensive approach, integrating both subject-specific terms and broader concepts, aimed to maximise the retrieval of pertinent studies. The adapted search terms were combined by using the Boolean operators AND and OR. Additionally, the terms “asylum seeker,” “refugee,” and “undocumented immigrant” along with all their synonyms and related terms were combined with proximity operators with a distance space of 10 (adj 10) to retrieve more results. The final search statement of this study was as follows:

((health information OR health seek* OR health help* OR care seek* OR health behavi* OR health commun* OR information practice* OR information literacy) AND (undocumented immigra* OR refuge* OR asylum seek*)).

We, furthermore, applied a backward reference search to identify relevant studies cited in the included studies extracted from the databases. This process was done after completing the full-text assessment of the records to search for additional relevant studies.

Selection of Studies

The studies were chosen based on the main components of our adapted framework, which included contextual factors, personal factors, health-related information or service needs, sources for actively seeking and passively receiving health-related information, and health-related information or service use by our target people. All selected databases were searched simultaneously, and articles were extracted either directly from EBSCO, Scopus, Web of Science or through Publish or Perish version 8 . Search results were imported into Rayyan, a web application for the initial screening of abstracts and titles for inclusion, and duplicates were removed. During the review phase, the first author conducted a preliminary screening of all records, while both the first author and the co-author to ensure accuracy performed the subsequent full-text screening independently. We evaluated titles, abstracts, keywords, and, in some cases, discussions and conclusions when selecting records, among other strategies. To clarify, the discussions and conclusions were referenced during the initial screening only when necessary to resolve uncertainties about a study's relevance. In the second step, both authors independently double-checked the abstracts of the selected articles. The full texts were then assessed for relevance by the first author, with subsequent verification by the co-author. This iterative process aimed to minimise errors and biases. We acknowledge the limitation of not conducting blinded double-screening and have discussed this in the limitations section.

Data Extraction and Search Results

We retrieved 3,274 studies that were potentially relevant to our research. This number includes 3,269 records obtained from searching across 13 different databases and an additional 5 records identified through backwards reference searching. We used 'Publish or Perish' software to retrieve academic citations for the identified studies and downloaded the records in BibTeX format when direct download from investigated databases was not available. The next step involved uploading these BibTeX files into the Rayyan platform, which is a tool that assists with the screening and selection of studies in systematic reviews. After a thorough review process that involved removing duplicates and studies that did not directly address the health-seeking behaviours of asylum seekers, refugees, and undocumented immigrants or were not peer-reviewed, we narrowed the list down to 699 articles. Further detailed screening based on the relevance and accuracy of the content reduced this list to 73

final articles. These selected studies were then downloaded in full paper form as PDFs and imported into NVivo version 1.6.1 for in-depth qualitative data analysis. In NVivo, we initially created a coding framework that consisted of two principal categories. The first category, manuscript author and publication information, encompassed nine distinct codes. The second category was aligned with the components of the extended Longo health information model, comprising six codes to specifically extract data related to personal factors, contextual factors, active and passive health-seeking sources, health-related information needs, and the utilisation of health-related information. This coding structure enabled us to systematically dissect and analyse the qualitative data, ensuring a robust synthesis of the evidence. Figure 2 presents a complete overview of the whole screening and selection process.

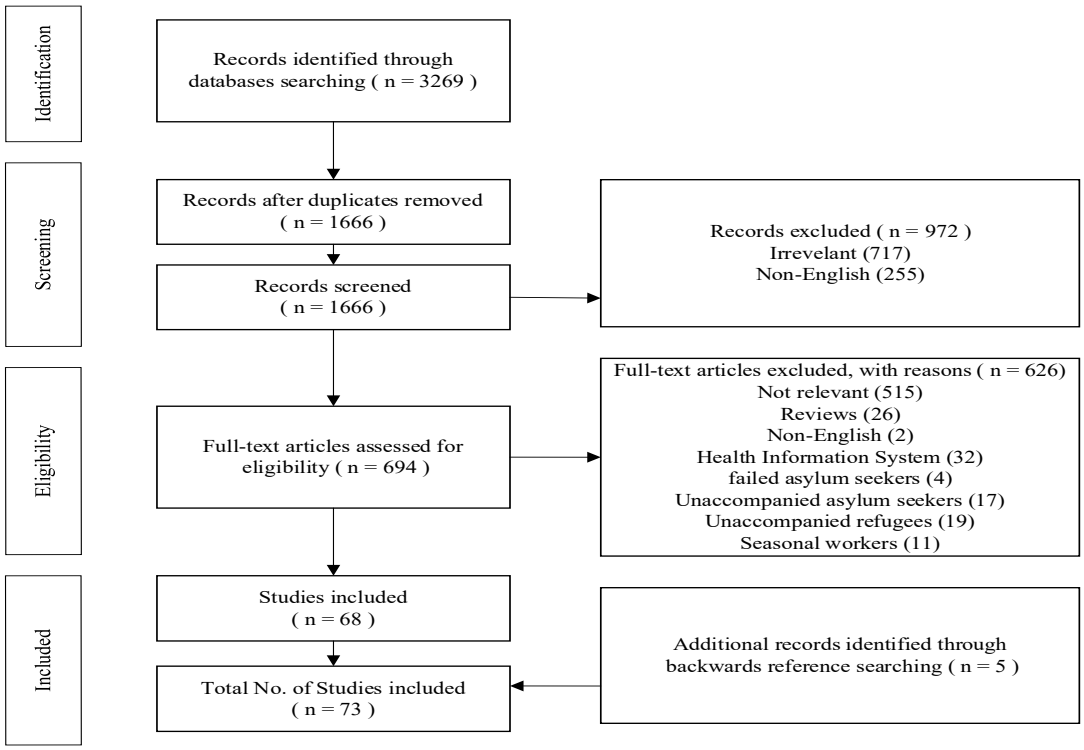

Figure 2. A PRISMA flow chart reports the final inclusion of 73 studies in this review.

Characteristics of the Included Studies

The final list (73 articles) included topics such as mental health and women's health. The majority of studies (64 percent) identified mental health issues among participants. Next were chronic diseases and women's health concerns. The least common explored health condition was related to communicable diseases (e.g., hepatitis). Figure 3 depicts a tree map of asylum seekers, refugees, and undocumented immigrants' health-related information and healthcare service needs.

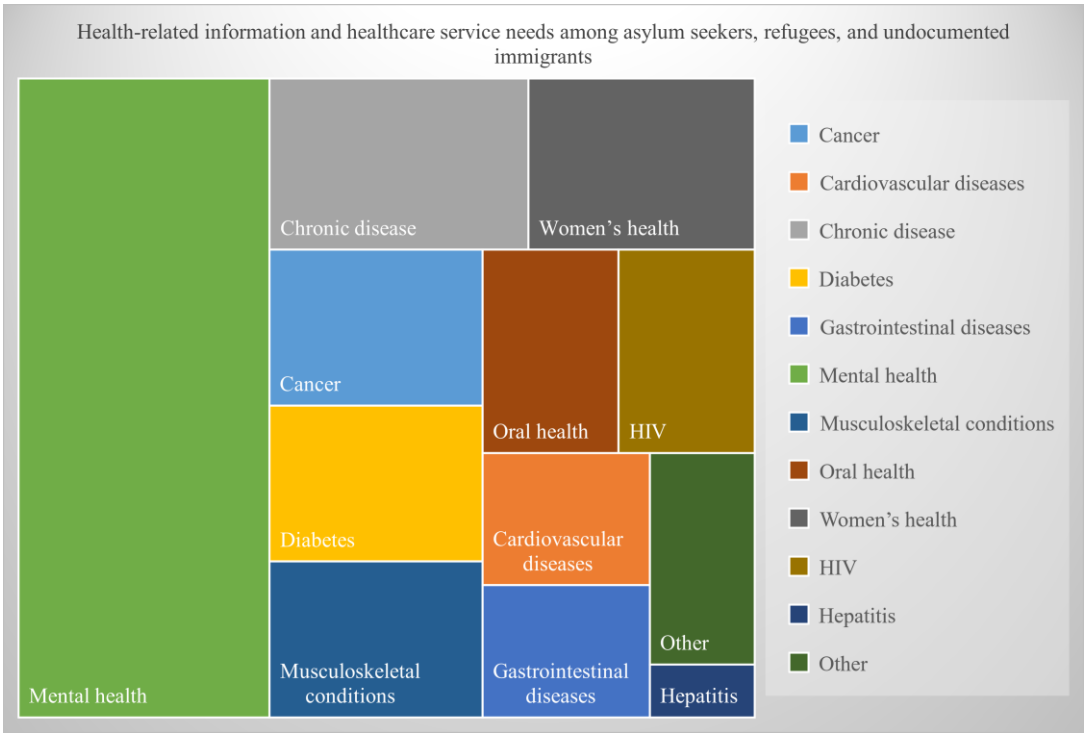

Figure 3. Health-related information and healthcare service needs among asylum seekers, refugees, and undocumented immigrants

We grouped study participants into five ethnic groups based on shared characteristics. The groups are African, Asian, Eastern and Balkan European, Indian subcontinent, Latin American and the Caribbean, and (Greater) Middle Eastern (Omi & Winant, 1986). Supplementary 1 lists ethnic groups, abbreviations, and nationalities from this review's studies. Supplementary 2 and 3 list the articles' source, continent, country, sample size, data collection method, theme, and participants' gender, ethnicity, and residency grounds.

Summary of Findings Based on the Research Model

In the following sections, we present findings based on our model of study.

Personal Factors

We identified and classified personal factors influencing health-related information or healthcare-seeking behaviours of our studied population into thirteen groups, including culture, ethnicity, formal education, gender, health literacy, language barriers, marital status, psychological factors, religion, residency status, segregation, social health and behavioural factors, and tradition. The sub-sections that follow provide more information about each personal factor, mostly from the standpoint of residency ground or ethnic background.

Culture: cultural norms, values, stigma, and taboos were described as having significant roles in shaping the health seeking behaviour of study participants, particularly in the context of mental health (Assefa et al., 2021; Behnia, 2003; Mahajan, 2021; Mulé, 2021; Poudel-Tandukar, 2019; Teunissen, 2014; Tomasi, 2022). In Middle Eastern refugees and asylum seekers, cultural factors, country of origin, and religion affected perinatal health and oral health help-seeking (Due et al., 2020; Ejike et al., 2020). Asylum seekers and refugees who are more integrated into their host country's

culture, where mental health issues are not taboo, are more likely to seek mental health information and care (Fox et al., 2020). Finally, children of asylum seekers and refugees, who quickly adapt to the new culture, may help asylum seekers access and use healthcare early in resettlement (Kindermann et al., 2020).

Ethnicity: the most influential personal factors in the health-related information or healthcare service seeking behaviour of all ethnic groups were psychological factors, religion, and culture (e.g., Al Laham et al., 2020; Claassen & Jager, 2018; Ejike, 2020; Nikendei, 2019; Shrestha-Ranjan, 2017). Marital status and tradition had the least influence on the health information and healthcare service-seeking behaviour of vulnerable individuals (e.g., Hawkes et al., 2021; Marume et al., 2018; Slewa-Younan et al., 2017; Thikeo et al., 2015; Wang, 2005). Tradition was cited more frequently in studies with African, Asian, and Indian Subcontinent participants (e.g., Ballard-Kang et al., 2018; Furuta & Mori, 2008; Poudel-Tandukar et al., 2019; Thikeo et al., 2015; Wang, 2005), whereas social health and behaviour were cited more frequently in studies with African, Asian, and Greater Middle Eastern participants (e.g., Gottlieb et al., 2020; Hassan & Wolfram, 2020; Muuo et al., 2020; Nickerson et al., 2020; Wong et al., 2016).

Formal Education: many studies concluded that higher education affected asylum seekers, refugees, and undocumented immigrants' healthcare identification, access, and use (e.g., Devillanova, 2008; Due et al., 2020; Marume et al., 2018; Mattila et al., 2016; Suphanchaimat et al., 2020). Higher-educated Syrian refugees actively sought chronic disease care more often, according to Doocy et al. (2015). Other researchers found that individuals with a lower educational background, comprehensive health literacy, health awareness, or higher risk behaviours are more likely to report poor health conditions and use more outpatient or inpatient healthcare services (Wångdahl et al., 2018; Wong, 2016).

Gender: the majority of included studies recruited a mixture of participants of both genders. However, a few studies reported issues related to only one particular gender (e.g. Biswas et al., 2011; Chandler et al., 2012; Furuta and Mori, 2008; Hawkes et al., 2021; Nickerson et al., 2020). First, family stigma, fear of future violence, helplessness, insecurity, and being denied health services were common barriers to healthcare seeking for female asylum seekers and refugees in various health contexts, from women's health to mental health (e.g. Barkensjo et al., 2018, 2018; Chandler et al., 2012; Furuta and Mori, 2008; Hawkes et al., 2021; Lee et al., 2013; Muuo et al., 2020; Shrestha-Ranjit et al., 2017). For Syrian refugee women, “families play large roles in teaching and providing health-related information about Canada's health system, including mental health services, and social networks influence assumptions about mental and physical health services and may act as alternatives to seeking formal mental and emotional health care,” according to Mahajan et al. (2021).

Older age and female gender were positively associated with professional help-seeking among Afghan and Iraqi refugees in Australia (Tomasi et al., 2022). Second, family and community stigma significantly impacted male asylum seekers and refugees' mental health help-seeking (Byrow et al., 2019; Nickerson et al., 2020). Finally, undocumented male immigrants cited limited medical rights, arbitrariness in healthcare professionals' attitudes, fear of being reported to the police, poor language skills, a lack of network with locals, a lack of knowledge about the healthcare system, and a lack of knowledge about informal networks of healthcare professionals as their common barriers to accessing healthcare (Biswas et al., 2011).

Health Literacy: many studies have highlighted improved health literacy, particularly mental health literacy, as an important skill for asylum seekers, refugees, and undocumented immigrants, especially in empowering their skills in navigating healthcare systems and promoting well-being (e.g., Kindermann et al., 2020; Martensson, 2020; Slewa-Younan, 2017; Wångdahl, 2018; Yun, 2016).

Language Barriers: many included studies have confirmed that language barriers significantly impact asylum seekers, refugees, and undocumented immigrants' healthcare access and behaviour (Hassan and Wolfram, 2020; Kleinert et al., 2019; Niedermaier et al., 2020; Shrestha-Ranjit et al., 2017). Professional mental health services were particularly affected (Hawkes et al., 2021). Web-based interpretation services may help refugees access health care, according to an Austrian study (Kohlenberger et al., 2019).

Marital Status: marital status as a factor in health-seeking behaviour was not extensively studied, but some research reported that married refugee women experienced more prearrival trauma and violence than unmarried women, which may increase their mental health needs (Hawkes et al., 2021; Slewa-Younan et al., 2017).

Psychologial Factors: anxiety disorders, depressive disorders, and posttraumatic stress disorders are three types of psychological factors that can influence individual health-seeking behaviour (Strijk et al., 2011). The included studies examined the effects of fear, depression, psychological disorder, anxiety symptoms, mental stress, addiction disorder, and posttraumatic stress on these vulnerable people's health-seeking behaviours (e.g., Byrow et al., 2019; Claassen and Jäger, 2018; Führer et al., 2020; Nickerson, 2020; Shrestha-Ranjit, 2017; Toar, 2009). Psychological factors significantly affected the mental health-seeking behaviour of study participants from all ethnic groups in most reviewed studies (e.g., Al Laham et al., 2020; Bernardes et al., 2010; Misra et al., 2006; Nikendei et al., 2019; Wong et al., 2016). These psychological factors may affect perinatal and sexual health information or healthcare-seeking behaviour in the studied population (e.g., Barkensjo et al., 2018; Biswas et al., 2011; Devillanova, 2008; Huschke, 2014; Teunissen et al., 2014).

Religion: in the reviewed studies, religion played two roles in asylum seekers', refugees', undocumented immigrants' health-seeking behaviour. On the one hand, religious associations or following a certain religion might facilitate access to health-related information or following healthier behaviour (Devillanova, 2008; Noh et al., 2015). On the other hand, religious beliefs and religious actors were identified in many studies on asylum seekers and refugees as significant influencing factors shaping health beliefs and health-seeking behaviour (e.g., Al Laham et al., 2020; Assefa et al., 2021; Ballard-Kang et al., 2018; Fox et al., 2020; Poudel-Tandukar et al., 2019). For example, a study on health-seeking cultural patterns in the use of available healthcare services among refugees from diverse ethnic backgrounds highlighted that use of spiritual folk healers or folk remedies affects the health outcomes of refugees (Ejike et al., 2020). Religious helpers and rituals may play a role as an alternative health remedy or treatment for mental health issues among asylum seekers, refugees, and undocumented immigrants (e.g., Ballard-Kang et al., 2018; Hawkes et al., 2021; Laban et al., 2008; Poudel-Tandukar et al., 2019; Teunissen et al., 2014). However, religion and family were the least commonly cited sources of social support among LGBTQ asylum seekers in North America (Fox et al., 2020). Finally, a study on professional mental health support seeking in Australia argued that older Afghan refugees may seek health support more from informal sources than from professional sources such as religious leaders and prayer sessions (Hawkes et al., 2021).

Segregation: social isolation, lack of emotional support, identity disclosure, discrimination, feeling trapped, and separation from family and community have a major impact on vulnerable people's mental health (e.g., Al Laham et al., 2020; Hassan and Wolfram, 2020; Knipscheer et al., 2015; Mulé, 2021; Poudel-Tandukar et al., 2019). Isolation and discrimination were observed to be the biggest factors affecting LGBTQ asylum seekers' mental health (Fox et al., 2020; Mulé, 2021). LGBTQ+ asylum seekers, refugee claimants and refugees in Canada face health barriers such as minoritized status, systemic inequities, and structural disparities (Mulé, 2021). Refugees and asylum seekers without visas showed symptoms of post-traumatic stress disorder and depression, which can affect

integration and a safe and normal childhood (Barkensjo et al., 2018; Bauhoff & Göpffarth, 2018; Byrow, 2019; Knipscheer, 2015; Shrestha-Ranjit, 2017).

Social Health and Behavioural Factors: Getting along with the local community and integration with different ethnicities were mentioned as factors influencing adoption or changing health behaviour toward more favourable behaviour among vulnerable people (e.g., Furuta & Mori, 2008; Gottlieb et al., 2020; Muuo et al., 2020; Nickerson et al., 2020; Wong et al., 2016). Studies on the health-seeking behaviour of asylum seekers and refugees have highlighted changes in attitudes and behaviour in terms of acceptance and utilization of healthcare (e.g., Gottlieb et al., 2020; Hassan & Wolfram, 2020; Nickerson et al., 2020; Poudel-Tandukar et al., 2019; Wang, 2005).

Tradition: many studies on the health-seeking behaviour of asylum seekers and refugees identified that these vulnerable people would actively preserve and practise their culture and traditions after settling in a new country (e.g., Ballard-Kang et al., 2018; Furuta & Mori, 2008; Poudel-Tandukar et al., 2019; Thikeo et al., 2015; Wang, 2005). After resettlement, vulnerable Asian and African people may use traditional healers and shamans (e.g., Ballard-Kang et al., 2018; Wang, 2005). A study on help-seeking attitudes among Cambodian and Laotian refugees found that women asylum seekers may continue their traditional role as carers to their children and husbands (Thikeo et al., 2015). Finally, a study on Bhutanese refugees seeking mental health care found that "younger adult refugees balance their own traditional cultural values and beliefs while trying to assimilate to the new cultural context of the United States" (Poudel-Tandukar et al., 2019).

Contextual Factors and Health Seeking Behaviour

Our studied population's health-related information or healthcare-seeking behaviours were influenced by eight contextual factors: "Financial Factors", "Policy and Systematic Inequality", "Health Service-Related Issues", "Migration-Related Issues", "Healthcare Provider Communication Issues", "Attitudes and Behaviours", "Social Network and Support", and "Sociocultural Factors". In included studies, policy and systematic inequality were the most influential contextual factors in the health-related information or healthcare services seeking behaviour of all ethnic groups, especially asylum seekers and refugees with African, Asian, and Greater Middle Eastern backgrounds (e.g., Furuta & Mori, 2008; Muuo et al., 2020; Nikendei et al., 2019; Tomasi et al., 2022; Wang, 2005). Health-related information and healthcare service-seeking behaviour were least affected by healthcare provider communication issues in our studied populations (e.g., Bernardes et al., 2010; Mahajan et al., 2021; Martensson et al., 2020; Poudel-Tandukar et al., 2019; Toar et al., 2009). The sub-sections that follow provide more information about each contextual factor, mostly from the standpoint of residency grounds or ethnic backgrounds.

Financial Factors: out-of-pocket medical costs, unaffordable treatment costs, insurance access, and insurance coverage were cited as the most significant obstacles to healthcare access and utilisation (e.g., Correa-Velez et al., 2008; Doocy et al., 2015, 2016; Karaki et al., 2021; Lyles et al., 2018, 2020, 2021). The significant proportion of asylum seekers and refugees referenced financial barriers to accessing and utilising healthcare services for noncommunicable diseases such as diabetes and mental health (e.g., Correa-Velez et al., 2008; Doocy et al., 2016; Due et al., 2020; Fox et al., 2020; Suphanchaimat et al., 2020).

Policy and Systematic Inequality: many studies have revealed that minority status, systematic inequality, and structural disparities have a significant impact on healthcare access and utilisation (e.g., Bauhoff & Göpffarth, 2018; Biswas et al., 2011; Gottlieb et al., 2020; Mulé, 2021; Tomasi et al., 2022). Different examples of systemic inequality were given, such as difficulties in obtaining referrals to health services, adopting healthy behaviours, and using healthcare (e.g., Correa-Velez et al., 2008; Furuta and Mori, 2008; Gottlieb et al., 2020; Muuo et al., 2020; Suphanchaimat et al., 2020).

Health Service-related Issues: health service-related issues were described as obstacles to accessing primary health care, such as lack of awareness of the structure and function of the healthcare system, complex health insurance access, payment problems, limited healthcare-related life skills, scheduling conflicts, long waiting lists, a lack of knowledge about doctors, and difficulties in accessing both information and healthcare services (Biswas et al., 2011; Kohlenberger et al., 2019; O'Donnell et al., 2007; Yun et al., 2016).

Migration-related Issues: different migration-related issues, including housing instability, insecure visa status, employment, and difficulties in accessing public services, were highlighted as factors reducing care seeking among the studied population (e.g. Byrow et al., 2019; Hassan & Wolfram, 2020; Lyles et al., 2021; Strijk et al., 2011; Teunissen et al., 2014). According to Knipscheer et al. (2015), "severity of posttraumatic stress disorder (PTSD) and depression symptoms were significantly associated with lack of refugee status and the accumulation of traumatic events". According to Knipscheer et al. (2015), "severity of posttraumatic stress disorder (PTSD) and depression symptoms were significantly associated with lack of refugee status and the accumulation of traumatic events".

Healthcare Provider Communication Issues: communication problems between healthcare providers and asylum seekers, refugees, and undocumented immigrants were frequently mentioned (e.g., Bernardes et al., 2010; Kiss et al., 2013; Martensson et al., 2020; O'Donnell et al., 2007; Shrestha-Ranjit et al., 2017). Bockey et al. (2020) argued that "due to the language restrictions of the medical personnel and the lack of a permanent interpreter, language remains a barrier to non-English speaking asylum seekers and refugees".

Healthcare Provider Attitudes and Behaviours: studies showed that treating asylum seekers, refugees, and undocumented immigrants with empathy, personal attention, and listening to them increased patient satisfaction (Barkensjö et al., 2018; Bockey, 2020; Teunissen, 2014; Wong, 2016). When healthcare professionals showed empathy and listened, female undocumented immigrants felt empowered, acknowledged, and encouraged (Barkensjö et al., 2018).

Social Networks and Support: social networks and support shaped assumptions about physical and mental health services, alternative health seeking, mental health strategies, and quality of life (e.g., Behnia, 2003; Bernardes et al., 2010; Fox et al., 2020; Mahajan et al., 2021; Shrestha-Ranjit et al., 2017). Undocumented Latin American migrants' health-seeking behaviour showed that "social capital emerges as the key factor in undocumented immigrants developing the specific illegality knowledge needed to access medical care" (Huschke, 2014). Finally, the LGBTIQ shelter's health and social support services could enhance LGBTIQ asylum seekers' healthcare use (Gottlieb et al., 2020).

Sociocultural Factors: sociocultural factors that were influencing the health-seeking behaviour of our target population were described as stigma by family and community, fear of further violence from perpetrators, feelings of helplessness or insecurity, cultural competence, cultural differences, poor interprofessional communication, distrust, cultural or religious norms, and psychological or physical barriers (e.g. Kohlenberger et al., 2019; Muuo et al., 2020; Nickerson et al., 2020; Shrestha-Ranjit et al., 2017; Thikeo et al., 2015).

Health-related Information Sources

Twenty-eight articles discussed and covered the various types of health-related information sources that asylum seekers, refugees, and undocumented immigrants actively used to seek health care (e.g., Behnia, 2003; Byrow et al., 2019; Devillanova, 2008; Muuo et al., 2020; Poudel-Tandukar et al., 2019). Seven categories and sub-categories representing common health-related information sources are displayed in Supplementary 4. Some studies identified religious actors and activities as the most

preferred information source for participants seeking mental health-related information or healthcare services (e.g., Al Laham et al., 2020; Byrow et al., 2019; Hassan & Wolfram, 2020; Hawkes et al., 2021; Poudel-Tandukar et al., 2019). Community ties, family members, and prayer were identified by Zimmerman (2018) as significant resources used to seek and maintain women's health. Asylum seekers and refugees from Asia, Latin America, and the Caribbean sought health-related information primarily from family members, friends, and community connections (e.g., Ballard-Kang et al., 2018; Behnia, 2003; Fox et al., 2020; Huschke, 2014; Thikeo et al., 2015). Participants with African, Indian Subcontinent, and Greater Middle Eastern backgrounds preferred religious actors and activities and integration officials as sources of health-related information (e.g., Al Laham et al., 2020; Byrow et al., 2019; Muuo et al., 2020; Nickerson et al., 2020; Poudel-Tandukar et al., 2019). Eastern and Balkan European asylum seekers and refugees preferred other health-related information sources over religious actors, activities, and integration officials (e.g., Barkensjo et al., 2018; Behnia, 2003; Devillanova, 2008; Fox et al., 2020; Strijk et al., 2011).

Passive Receipt of Health-related Sources

Eleven articles addressed passive health information receipt through two main channels: the community and network of support (including local community newspapers) and health promotion and educational programmes by our target population (Devillanova, 2008; Furuta & Mori, 2008; O'Donnell et al., 2007; Slewa-Younan et al., 2017; Wang, 2005). In studies with participants from the Greater Middle East, the Indian Subcontinent, and Latin America and the Caribbean, community and support were the most common ways to passively receive health information. Health promotion and educational programmes were the main sources of passive health information for African, Asian, Eastern, and Balkan Europeans (e.g., Al Laham et al., 2020; Byrow et al., 2019; Devillanova, 2008; Lee et al., 2013; Mattila et al., 2016). On one hand, health promotion or educational programmes were described as improving refugees' health, including during pregnancy and safe child delivery, changing attitudes, improving mental health literacy, and promoting Western medicine, thereby encouraging early and appropriate help-seeking (Furuta & Mori, 2008; Slewa-Younan et al., 2017; Wang, 2005). Refugees preferred interpersonal communication, interactive talks or presentations, and written, audio-visual, and web-based health information. Refugees preferred interpersonal communication, interactive talks or presentations, and written, audio-visual, and web-based health information (Lee et al., 2013b). However, community and support were noted as having a significant impact on traumatised refugees' positive attitudes toward psychological help-seeking or removing barriers to mental health treatment (Nickerson et al., 2020; Yun et al., 2016). Nickerson et al. (2020) suggested health education, service improvement, and advocacy to create a supportive political, social, and educational environment for safe motherhood. Finally, continuous educational programmes from early childhood to boost self-efficacy, self-esteem, and coherence are essential for developing self-managed health systems (Nickerson et al., 2020).

Health-related Information and Healthcare Service Needs

Sixty-five articles discussed and covered the various types of health-related information and healthcare services required by the study's target populations. Forty-seven articles identified mental health-related information and healthcare services as the most prevalent health need among all ethnic groups. Sixty-five articles discussed and covered the various types of health-related information and healthcare services required by the study's target populations (e.g., Al Laham et al., 2020; Byrow et al., 2019; Correa-Velez et al., 2008; Harris & Telfer, 2001; Hawkes et al., 2021). Chronic health-related information and healthcare services were cited as the second most common health-related need among individuals of African, Eastern European, and Balkan European descent (e.g., Doocy et al., 2015, 2016; Lyles et al., 2018; Niedermaier et al., 2020; Wong et al., 2016). Cancer-related health information and healthcare services were identified as the second most prevalent health-related need among asylum seekers and refugees with Asian and Indian subcontinent backgrounds (e.g., Bauhoff & Gopffarth, 2018; Blackwell et al., 2002; Kiss et al., 2013; Lyles et al.,

2018; Saleh et al., 2021). Asylum seekers, refugees, and undocumented immigrants from Latin America and the Caribbean and the Greater Middle East ranked information on diabetes and health-related services as their second most pressing health-related need (e.g., Chandler et al., 2012; Doocy et al., 2015; Huschke, 2014; Jervelund et al., 2019; Karaki et al., 2021). Women's health information was identified as essential health-related information by African, Asian, and Greater Middle Eastern participants (e.g., Barkensjo et al., 2018; Furuta & Mori, 2008; Lee et al., 2013; Muuo et al., 2020; Thikeo et al., 2015). In Sweden, undocumented immigrants of diverse racial and ethnic backgrounds were aware of perinatal care and relaxation exercises to alleviate labour pains (Barkensjo et al., 2018). In a study of female refugees from diverse ethnic backgrounds in Australia, Lee et al. (2013) found that mental health, women's health, exercise and nutrition, and alcohol and other drug issues were the women's highest priorities for health-related information and support. Studies on asylum seekers and refugees with predominantly African, Asian, Indian subcontinental, and Greater Middle Eastern backgrounds highlighted information about the healthcare system, specific health risks, rights in health issues, and navigating the healthcare system (Bauhoff & Gopffarth, 2018; Due et al., 2020; Führer et al., 2020; Kiss et al., 2013; Martensson et al., 2020). In addition, studies conducted with people from Greater Middle Eastern nations revealed the greatest need for information regarding cardiovascular disease, gastrointestinal disease, and oral health (e.g., Bockey et al., 2020; Due et al., 2020; Goodman et al., 2018; Hassan & Wolfram, 2020; Mattila et al., 2016). Lastly, a study conducted in North America with African participants identified the need for information on hospital locations, identifying healthcare professionals, seeing a doctor, and filling a prescription (Hassan & Wolfram, 2020).

Health-related Information and Health Service Utilisation

Forty articles described the utilisation of various health-related information and healthcare services. A significant portion of the studies (25 articles) examined the use of mental health-related information and healthcare services by all ethnic groups (e.g., Byrow et al., 2019; Hawkes et al., 2021; Lyles et al., 2020; Mattila et al., 2016; Tomasi et al., 2022). Other significant health-related information or healthcare services used by all ethnic groups in the selected studies included chronic diseases (11 articles), cancer (6 articles), cardiovascular diseases (6 articles), musculoskeletal conditions (6 articles), oral health (6 articles), and women's health (7 articles) (e.g., Doocy et al., 2016; Furuta & Mori, 2008; Mattila et al., 2016; Niedermaier et al., 2016). From the refugees' perspective, Syrian refugees utilised primary health care centres for non-communicable diseases more frequently than members of Lebanon's host communities, who sought care primarily in private clinics. Syrian refugees utilised primary health care centres for non-communicable diseases more frequently than members of Lebanon's host communities, who sought care primarily in private clinics (Doocy et al., 2016). Bhutanese and Somalian refugees reportedly consult traditional healers prior to seeking professional medical care (Assefa et al., 2021; Poudel-Tandukar et al., 2019). Ballard-Kang et al. (2018) investigated refugee mental health service utilisation in the United States. Their research indicates that "female refugees are more likely to report and screen positive for psychological distress symptoms, but are not more likely than males to accept mental health services" (Ballard-Kang et al., 2018, p. 348). In a study of different groups of asylum seekers, Gottlieb et al. (2020) found that lesbian, gay, bisexual, transgender, intersex, and queer (LGBTIQ) asylum seekers had higher rates of chronic and mental illnesses than the other groups, and they utilised ambulatory and mental health services more frequently than the other groups. According to Mattila et al. (2016), asylum seekers had trouble scheduling dental appointments, had more dental issues, and were less satisfied with treatment and scheduling.

Discussion

This systematic review revealed that health services research, ethnic studies, and migration studies have examined the health-seeking behaviours of asylum seekers, refugees, and undocumented immigrants. Personal and contextual factors influenced health-seeking behaviour in the studied

population, but personal factors (73 articles) were reported more often than contextual factors (49 articles) (e.g., Chandler et al., 2012; Doocy, 2016; Mulé, 2021; Niedermaier, 2020; Saleh, 2021). Using an adapted version of the Longo model, we checked the influence of personal and contextual factors on health-seeking behaviour in this group. The modified framework enables observation of how personal characteristics, contextual factors, health-related information needs, sources, and utilisation, and passive health-related information reception influence healthcare decision-making (e.g., de Haes, 2006; Drain, 2003; Longo, 2005; Longo et al., 2009, 2010; Maly et al., 2004; Neuberger, 2000). The reviewed articles, the same as previous studies, emphasise the importance of psychological factors, religion, and culture in the studied groups' healthcare-seeking behaviour (e.g., Fox et al., 2020; Laban et al., 2007; Noh et al., 2015; Tomasi et al., 2022; Wong et al., 2016). However, this systematic review highlighted the three-part roles of culture and religion (e.g., Devillanova, 2008; Noh et al., 2015), barriers in health-seeking behaviour (e.g., Assefa et al., 2021; Behnia, 2003; Mahajan et al., 2021; Mulé, 2021; Tomasi et al., 2022), and sources for health-related information seeking (e.g., Due et al., 2020; Hawkes et al., 2021; Poudel-Tandukar, 2019; Samuel et al., 2018; Teunissen et al., 2014). Family members, acquaintances, and community connections had a three-part influence on how asylum seekers, refugees, and undocumented immigrants responded to their health issues. First, Ojaranta et al. (2020) suggested that language minorities with asylum-seeker, refugee, and immigrant backgrounds can use individuals as information sources. This systematic review confirmed the significance of individuals and community connections as sources of health-related information for the population under study (Barkensjo et al., 2018; Devillanova, 2008; Mahajan, 2019; O'Donnell, 2007; Thikeo, 2015). Secondly, family and community stigma and fear of future violence can be significant barriers to health-seeking behaviours (Byrow et al., 2019; Kohlenberger et al., 2019; Muuo et al., 2020; Nickerson et al., 2020; Shrestha-Ranjit et al., 2017; Thikeo et al., 2015). However, health promotion and educational programmes on the individual or community level can mitigate health-seeking barriers and facilitate health-seeking activities by facilitating the dissemination of reliable health-related information among the studied population (Al Laham et al., 2020; Byrow et al., 2019; Devillanova, 2008; Furuta & Mori, 2008; Lee et al., 2013; Mattila et al., 2016; O'Donnell et al., 2007; Slewa-Younan et al., 2017; Wang, 2005).

As with individual factors, contextual factors, particularly policy and systematic inequality, influence the studied groups' healthcare-seeking behaviour (e.g., Bauhoff & Göpffarth, 2018; Biswas et al., 2011; Gottlieb et al., 2020; Mulé, 2021; Tomasi et al., 2022). Asylum seekers, refugees, and undocumented immigrants reported difficulties accessing and using healthcare services and increased health problems such as anxiety, depression, and posttraumatic stress disorder due to policy and systematic inequality and migration-related issues (e.g., Gottlieb et al., 2020; Hassan and Wolfram, 2020; Knipscheer, 2015; Mulé, 2021; Strijk, 2011; Tomasi, 2022). For example, issues related to mental health that are taboo topics in African and Asian cultures and a lack of knowledge or trust in physicians are general barriers to accessing and utilising healthcare services among asylum seekers and refugees (Behnia, 2003; Bernardes et al., 2010; Kiss et al., 2013; Mahajan et al., 2021; Martensson et al., 2020; O'Donnell et al., 2007; Shrestha-Ranjit et al., 2017). All ethnic groups reported that healthcare provider attitudes and behaviours, health literacy and health promotion, and psychological issues significantly affect their health-related seeking activities (e.g., Barkensjö et al., 2018; Bockey et al., 2020; Mattila, 2016; Slewa-Younan, 2017; Shrestha-Ranjit, 2017). The studies emphasised the importance of a cross-cultural approach in providing health-related information and healthcare services to asylum seekers, refugees, and undocumented immigrants, as well as in their integration into and adaptation to the local community (Bauhoff & Göpffarth, 2018; Claassen & Jäger, 2018; Fox et al., 2020; Kohlenberger, 2019; Mahajan, 2021). This study examines personal and contextual factors that may affect asylum seekers, refugees, and undocumented immigrants' health-related information and services, as well as cross-cultural adaptation and integration barriers and facilitators. This systematic review has several limitations. First, the inclusion criteria exclude non-English studies that may be relevant. The systematic literature search was comprehensive, but the

selected literature and findings of this study are not applicable to all asylum seekers, refugees, and undocumented immigrants in different countries. This systematic review used peer-reviewed articles and included qualitative and quantitative studies on the phenomenon as such meta-analyses were not possible. This review may not cover all relevant fields because the scientific databases used did not cover all key publications in the field. However, we are confident that the studies analysed here provide a comprehensive overview of academic publications in this multidisciplinary field.

Implications

Asylum seekers, refugees, and undocumented immigrants experience numerous health-related information and healthcare service needs, particularly related to non-communicable diseases. This systematic review highlighted the importance of addressing these issues by investigating the research topic from different angles, including individual and contextual levels. The results of this study have some implications for healthcare providers, health policymakers, and relevant authorities. First, this review identified a three-part impact of personal and contextual factors on health-seeking behaviour in the studied population, such as religion and culture as examples of personal factors and policy and systematic inequality as examples of contextual factors. Our findings revealed that providing universal health-related information and healthcare services will not meet all the healthcare needs of our studied population, and healthcare providers need to adopt a cross-cultural approach to design, develop, and provide specified health-related information and services based on ethnic, cultural, and religious factors and migration status. Secondly, this review identified that behavioural aspects of healthcare providers, such as attitudes and the ability to listen to patients from our studied groups, may influence the use of healthcare by different ethnic groups of vulnerable people, particularly women and LGBTQ asylum seekers who struggle with cultural and community taboos.

References

Ahmadinia, H., Eriksson-Backa, K., & Nikou, S. (2021). Health-seeking behaviours of immigrants, asylum seekers and refugees in Europe: a systematic review of peer-reviewed articles. *Journal of Documentation, 78*(7), 18-41. https://doi.org/10.1108/JD-10-2020-0168

Australian Government Department of Health. (2021). *Communicable diseases*. Australian Government Department of Health. Retrieved April 30, 2022, from https://www.health.gov.au/health-topics/communicable-diseases

Canadian Council for Refugees. (2022). *Refugee claimants: Comment on use of terms*. Canadian Council for Refugees. Retrieved April 30, 2022, from https://ccrweb.ca/en/refugee-claimants-comment-use-terms

CDC. (2022). *What is health literacy?* Centers for Disease Control and Prevention. Retrieved April 30, 2022, from https://www.cdc.gov/healthliteracy/learn/index.html

Cherry, K. (2020). *What does the LGBTQ+ acronym mean?* Verywell Mind. Retrieved April 30, 2022, from https://www.verywellmind.com/what-does-lgbtq-mean-5069804

Colpitts, E. & Gahagan, J. (2016). The utility of resilience as a conceptual framework for understanding and measuring LGBTQ health. *International Journal of Equity Health,* 15, 60. https://doi.org/10.1186/s12939-016-0349-1

de Haes, H. (2006). Dilemmas in patient centeredness and shared decision making: A case for vulnerability. *Patient Education and Counseling, 62*(3), 291–298. https://doi.org/10.1016/j.pec.2006.06.012

Drain M. (2003). Consumerism and patient satisfaction. Foreword. *The Journal of ambulatory care management, 26*(2), 96–99. https://doi.org/10.1097/00004479-200304000-00002

Freimuth, V. S., Stein, J. A., & Kean, T. J. (1989). *Searching for health information: The Cancer Information Service model*. University of Pennsylvania Press.

Lalazaryan A, Zare-Farashbandi, F. (2014). A review of models and theories of health information seeking behavior. *International Journal of Health System and Disaster Management, 2*(4), 193–203. https://doi.org/10.4103/2347-9019.144371

Longo, D. R. (2005). Understanding health information, communication, and information seeking of patients and consumers: A comprehensive and integrated model. *Health Expectations : An International Journal of Public Participation in Health Care and Health Policy, 8*(3), 189–194. https://doi.org/10.1111/j.1369-7625.2005.00339.x

Longo, D. R., Ge, B., Radina, M. E., Greiner, A., Williams, C. D., Longo, G. S., Mouzon, D. M., Natale-Pereira, A., Salas-Lopez, D. (2009). Understanding breast-cancer patients' perceptions: Health information-seeking behaviour and passive information receipt. *Journal of Communication in Healthcare, 2*(2), 184–206. https://doi.org/10.1179/cih.2009.2.2.184

Longo, D. R., Schubert, S. L., Wright, B. A., LeMaster, J., Williams, C. D., & Clore, J. N. (2010). Health Information Seeking, Receipt, and Use in Diabetes Self-Management. *Annals of Family Medicine, 8*(4), 334–340. https://doi.org/10.1370/afm.1115

Lopez, M. H., Passel, J. S., & Cohn, D. V. (2021). *Key facts about the changing U.S. unauthorized immigrant population*. Pew Research Center. Retrieved May 2, 2022, from https://www.pewresearch.org/fact-tank/2021/04/13/key-facts-about-the-changing-u-s-unauthorized-immigrant-population/

Maly, R. C., Umezawa, Y., Leake, B., & Silliman, R. A. (2004). Determinants of participation in treatment decision-making by older breast cancer patients. *Breast Cancer Research and Treatment, 85*(3), 201–209. https://doi.org/10.1023/B:BREA.0000025408.46234.66

Miller, S. M. (1989). Cognitive informational styles in the process of coping with threat and frustration. *Advances in Behaviour Research and Therapy, 11*(4), 223–234. https://doi.org/10.1016/0146-6402(89)90026-X

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *BMJ*, 339, b2535. https://doi.org/10.1136/bmj.b2535

Neuberger, J. (2000). The educated patient: New challenges for the medical profession. *Journal of Internal Medicine, 247*(1), 6–10. https://doi.org/10.1046/j.1365-2796.2000.00624.x

Ojaranta, A., Ahmadinia, H., & Eskola, E. L. (2020). Preliminary investigation of individuals as information sources among two language minorities during COVID-19 pandemic in Finland. *Informaatiotutkimus, 39*(2–3), 116–120. https://doi.org/10.23978/inf.99084

Omi, M., & Winant, H. (1986). *Racial formation in the United States: From the 1960s to the 1980s*. Routledge and Kegan Paul. http://archive.org/details/racialformationi00omim

Religion. (2022). In *Collins English Dictionary*. Retrieved May 2, 2022, from https://www.collinsdictionary.com/dictionary/english/religion

UNHCR. (2022). Refugee statistics. United Nations High Commissioner for Refugees. Retrieved May 2, 2022, from https://www.unhcr.org/refugee-statistics/

Ward, H., Mertens, T. E., & Thomas, C. (1997). Health Seeking Behaviour and the Control of Sexually Transmitted Disease. *Health Policy and Planning, 12*(1), 19–28. https://doi.org/10.1093/heapol/12.1.19

Zimmerman, M. S., & Shaw, G. (2020). Health information seeking behaviour: A concept analysis. *Health Information and Libraries Journal, 37*(3), 173–191. https://doi.org/10.1111/hir.12287

References included in the review

1. Muuo, S., Muthuri, S. K., Mutua, M. K., McAlpine, A., Bacchus, L. J., Ogego, H., Bangha, M., Hossain, M., and Izugbara, C. (2020). Barriers and facilitators to care-seeking among survivors of gender-based violence in the Dadaab refugee complex. *Sexual and Reproductive Health Matters*, *28*(1), 1722404. https://doi.org/10.1080/26410397.2020.1722404
2. Furuta, M., & Mori, R. (2008). Factors affecting women's health-related behaviors and safe motherhood: A qualitative study from a refugee camp in Eastern Sudan. Health Care for Women International, 29(8-9), 884–905. https://doi.org/10.1080/07399330802269600
3. Marume, A., January, J., and Maradzika, J. (2018). Social capital, health-seeking behavior and quality of life among refugees in Zimbabwe: A cross-sectional study. *International Journal of Migration Health and Social Care*, *14*(4), 377–386. https://doi.org/10.1108/IJMHSC-04-2017-0017
4. Wong, W. C. W., Cheng, S., Holroyd, E., Chen, J., Loper, K. A., Tran, L., and Miu, H. Y. H. (2016). A lost tribe in the city: Health status and needs of African asylum seekers and refugees in Hong Kong. *International Journal for Equity in Health*, 15, 158. https://doi.org/10.1186/s12939-016-0451-4
5. Doocy, S., Lyles, E., Roberton, T., Akhu-Zaheya, L., Oweis, A., & Burnham, G. (2015). Prevalence and care-seeking for chronic diseases among Syrian refugees in Jordan. *BMC Public Health*, 15(1), 1–10. https://doi.org/10.1186/s12889-015-2429-3
6. Al Laham, D., Ali, E., Mousally, K., Nahas, N., Alameddine, A., and Venables, E. (2020). Perceptions and Health-Seeking Behaviour for Mental Illness Among Syrian Refugees and Lebanese Community Members in Wadi Khaled, North Lebanon: A Qualitative Study. *Community Mental Health Journal*, *56*(5), 875–884. https://doi.org/10.1007/s10597-020-00551-5
7. Doocy, S., Lyles, E., Hanquart, B., & Woodman, M. (2016). Prevalence, care-seeking, and Health Service Utilization for non-communicable diseases among Syrian refugees and host communities in Lebanon. *Conflict and Health*, 10(1), 1–17. https://doi.org/10.1186/s13031-016-0088-3
8. Karaki, F. M., Alani, O., Tannoury, M., Ezzeddine, F. L., Snyder, R. E., Waked, A. N., and Attieh, Z. (2021). Noncommunicable Disease and Health Care-Seeking Behavior Among Urban Camp-Dwelling Syrian Refugees in Lebanon: A Preliminary Investigation. *Health Equity*, *5*(1), 261–269. https://doi.org/10.1089/heq.2020.0106
9. Lyles, E., Hanquart, B., Chlela, L., Woodman, M., LHAS Study Team, Fouad, F. M., Sibai, A., and Doocy, S. (2018). Health Service Access and Utilization among Syrian Refugees and Affected Host Communities in Lebanon. *Journal of Refugee Studies*, *31*(1), 104–130. https://doi.org/10.1093/jrs/fex014
10. Lyles, E., Burnham, G., Chlela, L., Spiegel, P., Morlock, L., and Doocy, S. (2020). Health service utilization and adherence to medication for hypertension and diabetes among Syrian refugees and affected host communities in Lebanon. *Journal of Diabetes and Metabolic Disorders*, *19*(2), 1245–1259. https://doi.org/10.1007/s40200-020-00638-6
11. Lyles, E., Burnham, G., Fahed, Z., Shermock, K. M., Spiegel, P., and Doocy, S. (2021). Care-Seeking and Health Service Utilization for Hypertension and Type 2 Diabetes Among Syrian Refugee and Host Community Care-Seekers in Lebanon. *Journal of International Migration and Integration*. https://doi.org/10.1007/s12134-021-00858-6
12. Saleh, S., Abdouni, L., Dimassi, H., Nabulsi, D., Harb, R., Jammoul, Z., Hachach, N., and El Arnaout, N. (2021). Prevalence of non-communicable diseases and associated medication use among Syrian refugees in Lebanon: An analysis of country-wide data from the Sijilli electronic health records database. *Conflict and Health*, *15*(1), 77. https://doi.org/10.1186/s13031-021-00411-3

13. Noh, J.-W., Yun, H.-Y., Park, H., and Yu, S.-E. (2015). A Study of Predictive Factors Affecting Health: Promoting Behaviors of North Korean Adolescent Refugees. *Journal of Preventive Medicine and Public Health*, *48*(5), 231–238. https://doi.org/10.3961/jpmph.14.045
14. Suphanchaimat, R., Sinam, P., Phaiyarom, M., Pudpong, N., Julchoo, S., Kunpeuk, W., and Thammawijaya, P. (2020). A cross sectional study of unmet need for health services amongst urban refugees and asylum seekers in Thailand in comparison with Thai population, 2019. *International Journal for Equity in Health*, *19*(1), 205. https://doi.org/10.1186/s12939-020-01316-y
15. Byrow, Y., Pajak, R., McMahon, T., Rajouria, A., and Nickerson, A. (2019). Barriers to Mental Health Help-Seeking Amongst Refugee Men. *International Journal of Environmental Research and Public Health*, *16*(15), E2634. https://doi.org/10.3390/ijerph16152634
16. Correa-Velez, I., Johnston, V., Kirk, J., & Ferdinand, A. (2008). Community-based asylum seekers' use of Primary Health Care Services in Melbourne. *Medical Journal of Australia*, 188(6), 344–348. https://doi.org/10.5694/j.1326-5377.2008.tb01651.x
17. Due, C., Aldam, I., and Ziersch, A. (2020). Understanding oral health help-seeking among Middle Eastern refugees and asylum seekers in Australia: An exploratory study. *Community Dentistry and Oral Epidemiology*, *48*(3), 188–194. https://doi.org/10.1111/cdoe.12524
18. Harris, M. F., and Telfer, B. L. (2001). The health needs of asylum seekers living in the community. *The Medical Journal of Australia*, *175*(11–12), 589–592. https://doi.org/10.5694/j.1326-5377.2001.tb143739.x
19. Hawkes, C., Norris, K., Joyce, J., and Paton, D. (2021). Professional mental health support seeking in Women of Refugee Background resettled in Australia: An exploratory study of facilitators and barriers. *Health and Social Care in the Community*, *29*(6), e440–e456. https://doi.org/10.1111/hsc.13370
20. Lee, S. K., Sulaiman-Hill, C. M. R., and Thompson, S. C. (2013). Providing health information for culturally and linguistically diverse women: Priorities and preferences of new migrants and refugees. *Health Promotion Journal of Australia*, *24*(2), 98–103. https://doi.org/10.1071/HE12919
21. Nickerson, A., Byrow, Y., Pajak, R., McMahon, T., Bryant, R. A., Christensen, H., and Liddell, B. J. (2020). 'Tell Your Story': A randomized controlled trial of an online intervention to reduce mental health stigma and increase help-seeking in refugee men with posttraumatic stress. *Psychological Medicine*, *50*(5), 781–792. https://doi.org/10.1017/S0033291719000606
22. Samuel, S., Advocat, J., and Russell, G. (2018). Health seeking narratives of unwell Sri Lankan Tamil refugees in Melbourne Australia. *Australian Journal of Primary Health*, *24*(1), 90–97. https://doi.org/10.1071/PY17033
23. Slewa-Younan, S., Yaser, A., Guajardo, M. G. U., Mannan, H., Smith, C. A., and Mond, J. M. (2017). The mental health and help-seeking behaviour of resettled Afghan refugees in Australia. *International Journal of Mental Health Systems*, *11*(1), 49. https://doi.org/10.1186/s13033-017-0157-z
24. Tomasi, A.-M., Slewa-Younan, S., Narchal, R., and Rioseco, P. (2022). Professional Mental Health Help-Seeking Amongst Afghan and Iraqi Refugees in Australia: Understanding Predictors Five Years Post Resettlement. *International Journal of Environmental Research and Public Health*, *19*(3), 1896. https://doi.org/10.3390/ijerph19031896
25. Wang, J. A. (2005). The Changing Health Care Behaviour of the Hmong Refugee Population in Sydney. *Geographical Research*, *43*(4), 417–428. https://doi.org/10.1111/j.1745-5871.2005.00339.x
26. Shrestha-Ranjit, J., Patterson, E., Manias, E., Payne, D., and Koziol-McLain, J. (2017). Effectiveness of Primary Health Care Services in Addressing Mental Health Needs of Minority Refugee Population in New Zealand. *Issues in Mental Health Nursing*, *38*(4), 290–300. https://doi.org/10.1080/01612840.2017.1283375

27. Kohlenberger, J., Buber-Ennser, I., Rengs, B., Leitner, S., and Landesmann, M. (2019). Barriers to health care access and service utilization of refugees in Austria: Evidence from a cross-sectional survey. *Health Policy (Amsterdam, Netherlands)*, *123*(9), 833–839. https://doi.org/10.1016/j.healthpol.2019.01.014
28. Biswas, D., Kristiansen, M., Krasnik, A., and Norredam, M. (2011). Access to healthcare and alternative health-seeking strategies among undocumented migrants in Denmark. *BMC Public Health*, *11*(1), 560. https://doi.org/10.1186/1471-2458-11-560
29. Mattila, A., Ghaderi, P., Tervonen, L., Niskanen, L., Pesonen, P., Anttonen, V., and Laitala, M. L. (2016). Self-reported oral health and use of dental services among asylum seekers and immigrants in Finland-a pilot study. *European Journal of Public Health*, *26*(6), 1006–1010. https://doi.org/10.1093/eurpub/ckw116
30. Bauhoff, S., and Göpffarth, D. (2018). Asylum-seekers in Germany differ from regularly insured in their morbidity, utilizations and costs of care. *PLOS ONE*, *13*(5), e0197881. https://doi.org/10.1371/journal.pone.0197881
31. Bockey, A. J., Janda, A., Braun, C., Müller, A.-M., Stete, K., Kern, W. V., Rieg, S. R., and Lange, B. (2020). Patient satisfaction and use of health care: A cross-sectional study of asylum seekers in the Freiburg initial reception centre. *BMC Health Services Research*, *20*(1), 709. https://doi.org/10.1186/s12913-020-05579-7
32. Claassen, K., & Jäger, P. (2018). Impact of the introduction of the electronic health insurance card on the use of medical services by asylum seekers in Germany. *International Journal of Environmental Research and Public Health*, 15(5), 856. https://doi.org/10.3390/ijerph15050856
33. Führer, A., Niedermaier, A., Kalfa, V., Mikolajczyk, R., and Wienke, A. (2020). Serious shortcomings in assessment and treatment of asylum seekers' mental health needs. *PloS One*, *15*(10), e0239211. https://doi.org/10.1371/journal.pone.0239211
34. Goodman, L. F., Jensen, G. W., Galante, J. M., Farmer, D. L., and Taché, S. (2018). A cross-sectional investigation of the health needs of asylum seekers in a refugee clinic in Germany. *BMC Family Practice*, *19*(1), 64. https://doi.org/10.1186/s12875-018-0758-x
35. Gottlieb, N., Püschmann, C., Stenzinger, F., Koelber, J., Rasch, L., Koppelow, M., and Al Munjid, R. (2020). Health and Healthcare Utilization among Asylum-Seekers from Berlin's LGBTIQ Shelter: Preliminary Results of a Survey. *International Journal of Environmental Research and Public Health*, *17*(12), 4514. https://doi.org/10.3390/ijerph17124514
36. Huschke, S. (2014). Fragile Fabric: Illegality Knowledge, Social Capital and Health-seeking of Undocumented Latin American Migrants in Berlin. *Journal of Ethnic and Migration Studies*, *40*(12), 2010–2029. https://doi.org/10.1080/1369183X.2014.907740
37. Kindermann, D., Zeyher, V., Nagy, E., Friederich, H.-C., Bozorgmehr, K., &; Nikendei, C. (2020). Predictors of asylum seekers' Health Care Utilization in the early phase of resettlement. *Frontiers in Psychiatry*, 11, 475. https://doi.org/10.3389/fpsyt.2020.00475
38. Kleinert, E., Müller, F., Furaijat, G., Hillermann, N., Jablonka, A., Happle, C., and Simmenroth, A. (2019). Does refugee status matter? Medical needs of newly arrived asylum seekers and resettlement refugees—A retrospective observational study of diagnoses in a primary care setting. *Conflict and Health*, 13(1), 1–9. https://doi.org/10.1186/s13031-019-0223-z
39. Niedermaier, A., Freiberg, A., Tiller, D., Wienke, A., and Fuehrer, A. (2020). Outpatient health care utilization and health expenditures of asylum seekers in Halle (Saale), Germany-an analysis of claims data. *BMC Health Services Research*, *20*(1), 961. https://doi.org/10.1186/s12913-020-05811-4
40. Nikendei, C., Kindermann, D., Brandenburg-Ceynowa, H., Derreza-Greeven, C., Zeyher, V., Junne, F., Friederich, H. C., & Bozorgmehr, K. (2019). Asylum seekers' mental health and treatment utilization in a three months follow-up study after transfer from a state registration- and reception-center in Germany. *Health policy* (Amsterdam, Netherlands), 123(9), 864–872. https://doi.org/10.1016/j.healthpol.2019.07.008

41. Jervelund, S. S., Nordheim, O., Stathopoulou, T., & Eikemo, T. A. (2019). Non-communicable diseases among refugee claimants in Greek refugee camps: Are their health-care needs met? *Journal of Refugee Studies*, 32(Special_Issue_1), i36–i51. https://doi.org/10.1093/jrs/fez064
42. Gordon, A., O-Brien, C., Balen, J., Duncombe, S. L., Girma, A., and Mitchell, C. (2021). A cross-sectional survey of sociodemographic characteristics, primary care health needs and living conditions of asylum-seekers living in a Greek reception centre. *Journal of Public Health*. https://doi.org/10.1007/s10389-021-01622-x
43. Toar, M., O'Brien, K. K., and Fahey, T. (2009). Comparison of self-reported health and healthcare utilisation between asylum seekers and refugees: An observational study. *BMC Public Health*, 9(1), 1–10. https://doi.org/10.1186/1471-2458-9-214
44. Devillanova, C. (2008). Social networks, information and health care utilization: Evidence from undocumented immigrants in Milan. *Journal of Health Economics*, *27*(2), 265–286. https://doi.org/10.1016/j.jhealeco.2007.08.006
45. Barkensjö, M., Greenbrook, J. T. V., Rosenlundh, J., Ascher, H., and Elden, H. (2018). The need for trust and safety inducing encounters: A qualitative exploration of women's experiences of seeking perinatal care when living as undocumented migrants in Sweden. *BMC Pregnancy and Childbirth*, 18(1), 1–17. https://doi.org/10.1186/s12884-018-1851-9
46. Martensson, L., Lytsy, P., Westerling, R., and Wangdahl, J. (2020). Experiences and needs concerning health related information for newly arrived refugees in Sweden. *BMC Public Health*, *20*(1). https://doi.org/10.1186/s12889-020-09163-w
47. Wångdahl, J., Lytsy, P., Mårtensson, L., and Westerling, R. (2018). Poor health and refraining from seeking healthcare are associated with comprehensive health literacy among refugees: A Swedish cross-sectional study. *International Journal of Public Health*, *63*(3), 409–419. https://doi.org/10.1007/s00038-017-1074-2
48. Maier, T., Schmidt, M., and Mueller, J. (2010). Mental health and healthcare utilisation in adult asylum seekers. *Swiss Medical Weekly*, *140*, w13110. https://doi.org/10.4414/smw.2010.13110
49. Pfortmueller, C. A., Schwetlick, M., Mueller, T., Lehmann, B., and Exadaktylos, A. K. (2016). Adult Asylum Seekers from the Middle East Including Syria in Central Europe: What Are Their Health Care Problems? *Plos One*, *11*(2), e0148196. https://doi.org/10.1371/journal.pone.0148196
50. Gerritsen, A. A., Bramsen, I., Devillé, W., Willigen, L. H. van, Hovens, J. E., and van der Ploeg, H. M. (2006). Use of health care services by Afghan, Iranian, and Somali refugees and asylum seekers living in The Netherlands. *European Journal of Public Health*, *16*(4), 394–399. https://doi.org/10.1093/eurpub/ckl046
51. Knipscheer, J. W., Sleijpen, M., Mooren, T., ter Heide, F. J. J., and van der Aa, N. (2015). Trauma exposure and refugee status as predictors of mental health outcomes in treatment-seeking refugees. *British Journal of Psychiatry Bulletin*, *39*(4), 178–182. https://doi.org/10.1192/pb.bp.114.047951
52. Laban, C. J., Komproe, I. H., Gernaat, H. B., and Jong, J. T. de. (2008). The impact of a long asylum procedure on quality of life, disability and physical health in Iraqi asylum seekers in the Netherlands. *Social Psychiatry and Psychiatric Epidemiology*, 43(7), 507–515. https://doi.org/10.1007/s00127-008-0333-1
53. Strijk, P. J. M., Meijel, B. van, and Gamel, C. J. (2011). Health and Social Needs of Traumatized Refugees and Asylum Seekers: An Exploratory Study. *Perspectives in Psychiatric Care*, 47(1), 48–55. https://doi.org/10.1111/j.1744-6163.2010.00270.x
54. Teunissen, E., Sherally, J., Muijsenbergh, M. van den, Dowrick, C., Weel-Baumgarten, E. van, and Weel, C. van. (2014). Mental health problems of undocumented migrants (UMs) in the Netherlands: A qualitative exploration of help-seeking behaviour and experiences with primary care. *BMJ Open*, *4*(11), e005738. https://doi.org/10.1136/bmjopen-2014-005738

55. Bernardes, D., Wright, J., Edwards, C., Tomkins, H., Dlfoz, D., and Livingstone, A. (2010). Asylum Seekers' Perspectives on their Mental Health and Views on Health and Social Services: Contributions for Service Provision Using a Mixed-Methods Approach. *International Journal of Migration, Health and Social Care*, *6*(4), 3–19. https://doi.org/10.5042/ijmhsc.2011.0150
56. Blackwell, D., Holden, K., and Tregoning, D. (2002). An interim report of health needs assessment of asylum seekers in Sunderland and North Tyneside. *Public Health*, *116*(4), 221–226. https://doi.org/10.1038/sj.ph.1900852
57. Misra, T., Connolly, A. M., and Majeed, A. (2006). Addressing mental health needs of asylum seekers and refugees in a London Borough: Epidemiological and user perspectives. *Primary Health Care Research and Development*, *7*(3), 241–248. https://doi.org/10.1191/1463423606pc293oa
58. O'Donnell, C. A., Higgins, M., Chauhan, R., and Mullen, K. (2007). 'They think we're OK and we know we're not'. A qualitative study of asylum seekers' access, knowledge and views to health care in the UK. *BMC Health Services Research*, *7*(1), 1–11. https://doi.org/10.1186/1472-6963-7-75
59. Behnia, B. (2003). Refugees' Convoy of Social Support: Community Peer Groups and Mental Health Services. *International Journal of Mental Health*, 32(4), 6–19. https://doi.org/10.1080/00207411.2003.11449595
60. Kiss, V., Pim, C., Hemmelgarn, B. R., and Quan, H. (2013). Building Knowledge About Health Services Utilization by Refugees. *Journal of Immigrant and Minority Health*, *15*(1), 57–67. https://doi.org/10.1007/s10903-011-9528-8
61. Mabaya, G., and Ray, S. L. (2014). The Meaning of Health and Help-Seeking Behaviours Among Refugees Who Have Experienced Collective Violence Prior to Emigration: A Canadian Perspective. *Canadian Journal of Community Mental Health*, *33*(3), 71–85. https://doi.org/10.7870/cjcmh-2014-024
62. Mahajan, S., Meyer, S. B., and Neiterman, E. (2021). Identifying the impact of social networks on mental and emotional health seeking behaviours amongst women who are refugees from Syria living in Canada. *Global Public Health*, *0*(0), 1–17. https://doi.org/10.1080/17441692.2021.1872679
63. Mulé, N. J. (2021). Mental health issues and needs of LGBTQ+ asylum seekers, refugee claimants and refugees in Toronto, Canada. *Psychology and Sexuality*, *0*(0), 1–11. https://doi.org/10.1080/19419899.2021.1913443
64. Assefa, M. T., Frounfelker, R. L., Tahir, S. A., Berent, J. M., Abdi, A., and Betancourt, T. S. (2021). Traditional Medicine and Help-Seeking Behaviors for Health Problems Among Somali Bantu Refugees Resettled in the United States. *Qualitative Health Research*, *31*(3), 484–497. https://doi.org/10.1177/1049732320970492
65. Ballard-Kang, J. L., Lawson, T. R., and Evans, J. (2018). Reaching Out for Help: An Analysis of the Differences Between Refugees Who Accept and Those Who Decline Community Mental Health Services. *Journal of Immigrant and Minority Health*, *20*(2), 345–350. https://doi.org/10.1007/s10903-017-0612-6
66. Chandler, J. T., Malone, R. E., Thompson, L. M., and Rehm, R. S. (2012). 'No me ponían mucha importancia': Care-seeking experiences of undocumented Mexican immigrant women with chronic illness. *ANS. Advances in Nursing Science*, *35*(2), E24-36. https://doi.org/10.1097/ANS.0b013e31825373fe
67. Ejike, C., Lartey, G., Capps, R., and Ciochetty, D. (2020). Health-seeking cultural patterns in the use of available healthcare services among refugee groups in south-central Kentucky. *International Journal of Migration, Health and Social Care*, *16*(1), 12–21. https://doi.org/10.1108/IJMHSC-08-2018-0051
68. Fox, S. D., Griffin, R. H., and Pachankis, J. E. (2020). Minority stress, social integration, and the mental health needs of LGBTQ asylum seekers in North America. *Social Science and Medicine*, *246*, 112727. https://doi.org/10.1016/j.socscimed.2019.112727

69. Hassan, M. D., and Wolfram, D. (2020). “We Need Psychological Support”: The information needs and seeking behaviors of African refugees in the United States. *Aslib Journal of Information Management*, *72*(6), 869–885. https://doi.org/10.1108/AJIM-10-2019-0299
70. Marshall, G. N., Berthold, S. M., Schell, T. L., Elliott, M. N., Chun, C.-A., and Hambarsoomians, K. (2006). Rates and correlates of seeking mental health services among Cambodian refugees. *American Journal of Public Health*, *96*(10), 1829–1835. https://doi.org/10.2105/AJPH.2006.086736
71. Poudel-Tandukar, K., Jacelon, C. S., Chandler, G. E., Gautam, B., and Palmer, P. H. (2019). Sociocultural Perceptions and Enablers to Seeking Mental Health Support Among Bhutanese Refugees in Western Massachusetts. *International Quarterly of Community Health Education*, *39*(3), 135–145. https://doi.org/10.1177/0272684X18819962
72. Thikeo, M., Florin, P., and Ng, C. (2015). Help Seeking Attitudes Among Cambodian and Laotian Refugees: Implications for Public Mental Health Approaches. *Journal of Immigrant and Minority Health*, *17*(6), 1679–1686. https://doi.org/10.1007/s10903-015-0171-7
73. Yun, K., Paul, P., Subedi, P., Kuikel, L., Nguyen, G. T., and Barg, F. K. (2016). Help-Seeking Behavior and Health Care Navigation by Bhutanese Refugees. *Journal of Community Health, 41*(3), 526–534. https://doi.org/10.1007/s10900-015-0126-x

Supplementary 1. Ethnic group and sub-ethnic groups of included studies in the review

Ethnic group	Sub-ethnic group
African (Af)	Angolan, Beninese, Burundian, Cabinda, Cameroonian, Chadian, Congolese, Eritrean, Ethiopian, Gambian, Ghanaian, Guinea-Bissauan, Guinean, Kenyan, Liberian, Nigerian, Rwandese, Sierra Leonean, Somalian, Tanzanian, Togolese, Ugandan, Zairean, Zambian, Zimbabwean
Asian (As)	Armenian, Azerbaijanian, Cambodian, Chinese, Georgian, Indonesian, Kazakhs, Laotian, Myanmarese, North Korean, Pilipino, Tajiks, Thai, Vietnamese
Eastern and Balkan European (Eu)	Albanian, Bela Russian, Bosnian, Czech, Estonian, Hungarian, Kosovan, Macedonian, Moldavian, Montenegrin, Polish, Romanian, Russian, Serbian, Slovakian, Ukrainian
Indian subcontinent (In)	Bangladeshi, Bhutanese, Indian, Nepalese, Sri Lankan
Latin American and the Caribbean (La)	Bahamians, Barbadian, Bolivian, Chilean, Colombian, Cuban, Dominican, El Salvadoran, Jamaican, Mexican, Peruvian, Saint Lucian, Surinamese
(Greater) Middle Eastern (Gm)	Afghan, Algerian, Egyptian, Iranian, Iraqi, Jordanian, Kuwaitis, Lebanese, Libyan, Moroccan, Pakistanis, Palestinian, Sudanese, Syrian, Tunisian, Turkish

Supplementary 2. Included studies in the systematic review

ID	Source	Country	Particip. gender	Sample size	ID	Source	Country	Particip. gender	Sample size
1	Muuo et al., 2020	Kenya	Women	209	38	Kleinert et al., 2019	Germany	Mixed	2252
2	Furuta et al., 2008	Sudan	Women	10	39	Niedermaier et al., 2020	Germany	Mixed	4107
3	Marume et al., 2018	Zimbabwe	Mixed	164	40	Nikendei et al., 2019	Germany	Mixed	228
4	Wong et al., 2016	Hong Kong	Mixed	374	41	Jervelund et al., 2019	Greece	Mixed	267
5	Doocy et al., 2015	Jordan	Mixed	1550	42	Gordon et al., 2021	Greece	Mixed	500
6	Al Laham et al., 2020	Lebanon	Mixed	46	43	Toar et al., 2009	Ireland	Mixed	88
7	Doocy et al., 2016	Lebanon	Mixed	2062	44	Devillanova, 2008	Italy	Mixed	786
8	Karaki et al., 2021	Lebanon	Mixed	101	45	Barkensjo et al., 2018	Sweden	Women	13
9	Lyles ey al., 2018	Lebanon	Mixed	2062	46	Martensson et al., 2020	Sweden	Mixed	28
10	Lyles et al., 2020	Lebanon	Mixed	2062	47	Wangdahl et al., 2018	Sweden	Mixed	513
11	Lyles et al., 2021	Lebanon	Mixed	847	48	Maier et al., 2010	Switzerland	Mixed	78
12	Saleh et al., 2021	Lebanon	Mixed	3255	49	Pfortmueller et al., 2016	Switzerland	Mixed	880
13	Noh et al., 2015	South Korea	Mixed	123	50	Gerritsen et al., 2006a	Netherlands	Mixed	310
14	Suphanchaima et al., 2020	Thailand	Mixed	181	51	Knipscheer et al., 2015	Netherlands	Mixed	688
15	Byrow et al., 2019	Australia	Male	92	52	Laban et al., 2007	Netherlands	Mixed	294
16	Correa-Velez et al., 2008	Australia	Mixed	341	53	Strijk et al., 2011	Netherlands	Mixed	30
17	Due et al., 2020	Australia	Mixed	26	54	Teunissen et al., 2014	Netherlands	Mixed	15
18	Harris & Telfer, 2001	Australia	Mixed	102	55	Bernardes et al., 2010	U.K.	Mixed	29
19	Hawkes et al., 2021	Australia	Women	450	56	Blackwell et al., 2002	U.K.	Mixed	397
20	Lee et al., 2013	Australia	Women	268	57	Misraet al., 2006	U.K.	N/A	10
21	Nickerson et al., 2020	Australia	Men	103	58	O'Donnell et al., 2007	U.K.	Mixed	53
22	Samuel et al., 2018	Australia	Mixed	12	59	Behnia, 2003	Canada	Mixed	36
23	Slewa-Younan et al., 2017	Australia	Mixed	150	60	Kiss et al., 2011	Canada	Mixed	2280
24	Tomasi et al., 2022	Australia	Mixed	1180	61	Mabaya & Ray., 2014	Canada	Mixed	6
25	Wang, 2005	Australia	Mixed	41	62	Mahajan et al., 2019	Canada	Women	12
26	Shrestha-Ranjit et al., 2017	New Zealand	Mixed	40	63	Mulé, 2021	Canada	Mixed	85
27	Kohlenberger et al., 2019	Austria	Mixed	11425	64	Assefa et al., 2021	U.S.A	Mixed	20
28	Biswas et al., 2011	Denmark	Male	18	65	Ballard-Kang et al., 2018	U.S.A	Mixed	563
29	Mattila et al., 2016	Finland	Mixed	38	66	Chandler et al., 2012	U.S.A	Women	26
30	Bauhoff & Goepffarth, 2018	Germany	Mixed	3639	67	Ejike et al., 2020	U.S.A	Mixed	110
31	Bockey et al., 2020	Germany	Mixed	102	68	Fox et al., 2020	U.S.A	Mixed	308
32	Claassen & Jäger, 2018	Germany	Mixed	260	69	Hassan & Wolfram, 2020	U.S.A	Mixed	18
33	Fuehrer et al., 2020	Germany	Mixed	214	70	Marshall et al., 2006	U.S.A	Mixed	339
34	Goodman et al., 2008	Germany	Mixed	2753	71	Poudel-Tandukar et al., 2019	U.S.A	Mixed	67
35	Gottlieb et al., 2020	Germany	Mixed	309	72	Thikeo et al., 2015	U.S.A	Mixed	270
36	Huschke, 2014	Germany	Mixed	35	73	Yun et al., 2016	U.S.A	Mixed	35
37	Kindermann et al., 2020	Germany	Mixed	65					

Supplementary 3. Description of included studies (General characteristic of the study)

	Africa		Asia		Australia/Oceania		Europe		North America	
Participants	n	ID	n	ID	n	ID	n	ID	n	ID
Asylum seekers	0	---	2	4, 14	4	15, 16, 17, 18	21	29, 30, 31, 32, 33, 34, 35, 37, 39, 40, 42, 43, 48, 49, 50, 52, 53, 55, 56, 57, 58	2	63, 68
Refugees	3	1, 2, 3	11	5, 6, 7, 8, 9, 10, 11, 12, 13	10	15, 17, 19, 20, 21, 22, 23, 24, 25, 26	10	27, 38, 41, 43, 46, 47, 50, 51, 53, 57	13	59, 60, 61, 62, 63, 64, 65, 67, 69, 70, 71, 72, 73
Undocumented immigrants	0	---	0	---	0	---	5	28, 36, 44, 45, 54	1	66
N	3	---	13	---	14	---	36	---	16	---
%	1,60 %		6,95 %		7,49 %		19,25 %		8,56 %	
Methodology	n	ID	n	ID	n	ID	n	ID	n	ID
Qualitative	1	2	1	6	5	17, 22, 23, 24, 26	8	28, 29, 36, 45, 46, 54, 57, 58	10	59, 61, 62, 63, 64, 66, 69, 70, 71, 73
Quantitative	1	3	8	5, 7, 8, 9, 10, 12, 13, 14	5	15, 16, 18, 19, 21	20	27, 30, 31, 32, 33, 34, 35, 37, 38, 39, 41, 42, 43, 44, 47, 48, 49, 50, 51, 56	5	60, 65, 67, 68, 72
Mixed-methods	1	1	2	4, 11	2	20, 25	4	40, 52, 53, 55	0	---
N	3	---	11	---	12	---	32	---	15	---
%	1,60 %		5,88 %		6,42 %		17,11 %		8,02 %	

Supplementary 4. Health-related information sources, subcategories, and included articles' ID

Category	Sub-category	ID
Acquaintances	Friends, neighbours, online-friends, peers, schoolmates, workmate	1, 6, 15, 21, 23, 3, 44, 54, 57, 59, 62, 64, 65, 68, 71
Community connections	Community leader, community members, ethnic charity organisations, ethnic communities, ethnic social groups, NGOs, religious charity organisations, schoolteachers	15, 21, 23, 36, 45, 59, 65, 68, 69
Family members	Spouse, partner, family member	1, 2, 3, 6, 15, 21, 23, 25, 57, 59, 62, 64, 65, 68, 71, 72
Integration officials	Caseworker, immigration officials	15, 21, 69
Media sources[1]	Internet, social media, libraries	3, 20, 22, 46, 68, 69
Medical professionals	General practitioner, health professional, nurse, midwife, health workers	2, 3, 15, 21, 23, 24, 25, 36, 53, 59, 65, 69
Religious actors and activities	Religious leader, religious activities, holy book, religious beliefs	1, 3, 15, 17, 19, 21, 22, 54, 6, 64, 71

[1] According to some studies, media sources include television, radio, DVDs, CDs, and the internet, which can be used for either active or passive information reception. However, the participants of the included studies referred to the internet, social media, and libraries while they were describing their active health seeking behaviours.

Supplementary 5. Systematic review search terms, databases, channels, and results

Step	Database	Search Criteria	Selected databases:		Findings
1	Web of science	((health information OR health seek* OR health help* OR care seek* OR health behavi* OR health commun* OR information practice* OR information literacy) AND (undocumented immigra* OR refuge* OR asylum seek*))	1. Web of Science Core Collection		978
			2. KCI-Korean Journal Database		
			3. Medline		
			4. Russian science citation index		
			5. SciElo citation index		
		Filter 1: Language = English		903	
		Filter 2: Document Types = Article		643	
		Filter 3: Research Domains= SOCIAL SCIENCES		503	
2	EBSCO	((health information OR health seek* OR health help* OR care seek* OR health behavi* OR health commun* OR information practice* OR information literacy) AND (undocumented immigra* OR refuge* OR asylum seek*))	1. Academic Search Complete	379	1 444
			2. APA PsycInfo	190	
			3. APA PsycArticles	8	
			4. CINAHL with Full Text	384	
			5. Communication & Mass Media Complete	0	
			6. Library, Information Science & Technology Abstracts	7	
			7. MEDLINE	476	
		Filter 1: Language = English		**1389**	
		Filter 2: Document Types = Academic Journals		1277	
		Filter 3: Full text = available		575	
3	Scopus	((health information OR health seek* OR health help* OR care seek* OR health behavi* OR health commun* OR information practice* OR information literacy) AND (undocumented immigra* OR refuge* OR asylum seek*))			847
		Filter 1: Language = English			780
		Filter 2: Document Types = Academic Journals & conference			575