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ORIGINAL RESEARCH

Self-rated sexual health and its associated factors among migrants attending Swedish language programmes: A cross-sectional study

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ABSTRACT

Introduction: Evidence suggests that migrants are at a higher risk of poor sexual health compared to non-migrants. However, this vulnerability may vary depending on their socio-demographic backgrounds and experiences. This study aimed to describe the prevalence of poor self-rated sexual health, its distribution, and associated risk factors among migrants in Sweden.

Methods: This study is a secondary analysis of the 2018 Migrants' Sexual and Reproductive Health and Rights (MSRHR-2018) survey, which included a total of 1,118 migrants enrolled in language programmes. Data were analysed with descriptive, bivariate, and multivariable regression analyses.

Results: About 19% of participants reported poor self-rated sexual health. The latter was associated with older (>44 years) age (PR:1.83; 95% CI:1.08, 3.10), low educational attainment (PR: 1.80; 95% CI: 1.04, 3.11), repeated difficulty in making ends meet (PR: 1.51; 95% CI:1.01, 2.26), being not at all or not particularly open about one's sexual orientation (PR: 1.62; 95% CI: 1.06, 2.49), lifetime experience of discrimination (PR: 1.61; 95% CI: 1.09, 2.39), and refraining from seeking sexual and reproductive health (SRH) services despite felt needs (PR: 1.87; 95% CI: 1.22, 2.85) remained associated with poor self-rated sexual health.

Conclusion: This study highlights the prevalence of poor self-rated sexual health among migrants, while revealing significant disparities across specific subgroups that warrant targeted attention. These findings can inform policy makers, programme managers, and civil society actors in designing targeted policies and interventions for migrant subgroups at an increased risk of poor sexual health, such as middle-aged and elderly migrants, the least educated, and those who do not fully conform to social expectations on gender identity/sexual orientation. To improve sexual and reproductive health outcomes, it is essential to identify and address the barriers that hinder migrants' access to relevant health services.

Keywords: Sexual health, migrants, inequities, social determinants, discrimination, health-care, access, Sweden.

Abstract in Español at the end of the article

INTRODUCTION

The number of international migrants has increased globally during the last decades because of conflicts, human right violations, demographic, economic and environmental factors. The United Nations (UN) estimates that the number of international migrants reached 304 million in 2024, an increase from 275 million in 2020 [1]. The same trend has been observed in Sweden, where

international migrants represented nearly 20 % of the population in 2024. Among them, approximately 40% were born in Europe, while more than half were born outside the European continent [2]. By December 2018, the most common continents of birth for non-European migrants by population size were Asia (38%) and Africa (11%). The most common countries of birth by population size were Syria (10%), Iraq (7%), Iran (4%), Somalia (4%), Afghanistan (3%) and Eritrea (2%) [3]. The conditions surrounding the migration process may expose migrants to increased health risks and vulnerability for negative health outcomes, including poor sexual health [4].

The global understanding of sexual health and its relationship with reproductive health has changed over time [5]. The existing definitions of these concepts are based on international agreements stated at the United Nations (UN) international conferences, in particular at the UN International Conference on Population and Development (ICPD) in Cairo, 1994, and the UN Conference on Women in Beijing in 1995 [6, 7]. In the ICPD programme of action, sexual health was included within the definition of reproductive health which was defined as: 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes' [6]. While sexual and reproductive health are interconnected conceptually and in terms of the implementation of programmes or research, they each have their own unique aspects that need to be looked at separately [5]. For instance, it has been argued that incorporating sexual health into reproductive health will result in important aspects of sexual health that go beyond reproduction – such as sexuality, sexual violence, female genital mutilation, and human rights related to sexuality and sexual health – being overlooked in programmes and policy guidelines [8]. Against this background, subsequent meetings and consultations have drawn more attention to sexual health globally and nationally, and to actions and strategies to promote it [9]. The current working definition outlines sexual health as:

a state of physical, emotional, mental and social well-being in relation to sexuality. It is not merely the absence of disease, dysfunction or infirmity and requires a positive, respectful approach to sexuality and sexual relationships and the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled.

This requires states to take responsibility to guarantee every individual the opportunities and freedom to enjoy sexual rights and ensure that these rights are respected, protected and fulfilled [10]. These rights include, among others, the ability to access: comprehensive and good-quality information about sex and sexuality; knowledge about risks and vulnerability to adverse consequences of unprotected sexual activity; sexual health care; and the right to live in an environment that affirms and promotes sexual health [5].

Previous research, including the Swedish national survey on sexual and reproductive health and rights (SRHR) and the British National Survey of Sexual Attitudes and Lifestyles (Natsal-3), found that nearly four in ten respondents reported dissatisfaction with their sexual lives [11, 12]. Additional studies have shown that compared to non-migrants, migrants tend to have a higher prevalence of sexually transmitted infections (STIs), including HIV/AIDS, and are at increased risk of violent victimisation, particularly gender-based violence due to vulnerabilities associated with the migration process. These risks may arise before, during, and after migration and are shaped by structural and situational factors [13-16].

However, migrants' vulnerability to adverse sexual health outcomes varies depending on their socio-demographic backgrounds, migration experiences, and circumstances [4, 15, 16]. These vulnerabilities are further exacerbated by complex and intersecting barriers that limit their access to both general and sexual health-related services and participation in national surveys. Such barriers may include insecure legal status, discrimination and stigmatisation, cultural and linguistic challenges, limited health literacy, low awareness of available services, racism and xenophobia, socio-economic disadvantage, and fear of deportation [14, 15, 17].

Moreover, sexual health status is influenced by complex interacting physical, psychological, cognitive, socio-cultural, religious, legal, political, and economic factors over which individuals have limited or no control [17]. These factors, also known as social determinants of health, should be taken into consideration while measuring or promoting sexual health. Thus, migration is also considered as a social determinant of health that cuts across and exacerbates existing social determinants such as individual, social, and contextual factors. The interactions among these factors lead to varying levels of risk, vulnerability, and challenges in accessing services, and thus contribute to health inequalities not only between migrants and non-migrants, but also among migrants [4].

Despite its importance, migrant sexual health remains an under-researched area in both Sweden and Europe. While migrants are often underrepresented in research, existing literature has primarily addressed sexual and reproductive health collectively, with limited attention given to sexual health as a distinct domain [17-20]. Furthermore, although sexual health is broadly defined to encompass more than the mere absence of disease, the few studies that do focus on sexual health tend to rely on indicators reflecting only negative outcomes, such as the prevalence and incidence of STIs, sexual vulnerability and experiences of sexual violence [14, 15]. Similarly, previous Swedish research on migrant sexual health has predominantly centred on the preven-

tion and control of HIV and STIs or on access to sexual and reproductive health services such as HIV/STIs testing, care and prevention, family planning, and antenatal and postnatal care services [18, 19, 21, 22]. Furthermore, while migrant status is often included as a variable in studies on social determinants of health, there has been limited analysis of how structural, socio-economic, psychosocial, and contextual factors intersect with migrant status to shape disparities in self-rated sexual health [17]. Thus, very little is known about which structural/socio-economic, psychosocial, and contextual factors interact with migrant status to influence disparities in self-rated sexual health among migrants living in Sweden so far. The aims of this study were:

i) to describe the prevalence and social distribution of poor self-rated sexual health and

ii) to identify the potential risk factors associated with poor self-rated sexual health among migrants living in Sweden.

METHODS

Study design and setting

This study is a secondary analysis of the 2018 Migrants' Sexual and Reproductive Health and Rights (MSRHR-2018) survey, commissioned by the Public Health Agency of Sweden to address the low participation rates of migrants in the national SRHR survey [12]. The cross-sectional survey was conducted at 19 Swedish language schools for adult immigrants (SFI) and introduction programmes for young immigrants at high schools. The schools were located in six of the 21 Swedish regions, representing different geographical (northern, central/middle, southern) areas.

Study population and sampling

A convenience sampling approach was used, targeting migrants living in Sweden. As there is no universally accepted definition of the term 'migrant', in this study it refers to all foreign-born individuals regardless of their country of birth, reason for migration, length of stay, and whether they have a residence permit or not. The study population consisted of migrants aged 15 or older who were enrolled in language programmes at the time of the study. Migrants in Sweden have the right to participate in SFI from July 1 of the year they turn 16. Those aged 16 to 20 may instead apply to the Language Introduction Programme, a high school programme designed for newly arrived youth who need to learn Swedish. However, only migrants who are registered as residents in a Swedish municipality, and who hold a Swedish personal identity number (personnummer) are eligible to apply to SFI [23]. Except for Nordic citizens, to be registered as a migrant in Sweden, a foreigner should be in possession of a residence permit for at least 12 months. Citizens from the European Union (EU)/European Economic Area (EEA) should meet the requirements for right of residence through work, studies or with sufficient means [24]. According to the School Act, certain categories of migrants/people are counted as resident in Sweden, even if they are not or should not be registered and can therefore attend SFI. These include people who have the right to education in accordance with the EU law, the agreement on the European Economic Area (EEA), the agreement on the free movement of persons between EU countries and Switzerland. But asylum seekers (i.e., those awaiting a decision about their asylum claim) and undocumented/irregular migrants (i.e. those who are staying without the required permit) do not have the right to attend SFI [23]. In contrast, asylum seekers and undocumented migrant children below the age of 18 at arrival have the right to attend the introduction program despite limited right to education [25]. However, the specific eligibility requirements may vary between municipalities. While some require a *personnummer* (personal identity number), others may accept a *samordningsnummer* (coordination number) or temporary residence status [23]. The sample population included all enrolled students (n = 1,718) who were present at the schools on the days the survey was administered and were invited to participate.

Survey instrument

The MSRHR-2018 survey questionnaire was adapted from previous national [12, 26] and international surveys [27]. The questionnaire was developed in English and Swedish and translated from Swedish to Arabic, Dari, Somali, and Tigrinya by professional translators and native speakers. These languages are spoken by largest migrant communities apart from English. Thereafter, it was back translated to Swedish by native speaker research team members (who were attending a master's programme in Public Health at Umeå University) and a trained interpreter. They also checked for appropriateness of wording and potential misinterpretation (cultural validation). In addition, two of the four researchers involved were medical doctors with migrant backgrounds and professional experience in the field of migration and health. The initial questionnaire was pilot tested with a sample of 24 migrants enrolled in a language school and subsequently revised based on their feedback before being administered to study participants. As the pilot study was exploratory in nature, aimed at assessing feasibility, language comprehension, cultural sensitivity, and refining the survey instrument, a formal sample size calculation was not required.

The final version of the questionnaire was available in six different languages (Arabic, Dari, English, Tigrinya, Somali, and Swedish), and comprised 69 questions covering a broad range of topics, including sociodemographic characteristics; general and sexual health (self-rated); safety and social relationships; experiences of discrimination and physical violence; access to SRH services; sexuality and relationships; last sexual encounter; experiences of coerced or transactional sex; contraception and

reproductive health; HIV/STI testing and status; and sources and needs for SRH-related information. However, for the purposes of our study, we focused only on specific items relevant to our research objectives.

Data source

This study utilized data from the MSRHR-2018 project collected in 2018. The school authorities were contacted via email or phone calls to ask for permission. When permission was granted, the research team either visited the schools or sent the questionnaire with prepaid envelopes to teachers or other key persons. The questionnaire was mainly self-administered in schools using a traditional paper-and-pencil method, or by computer in the respondents' preferred languages (their mother tongue, English, or Swedish). Respondents with limited literacy or language skills were assisted by bilingual project assistants from their respective countries, teachers, or integration mentors. Data collection took place between 1 March and 30 September 2018. The response rate was 85%; that is, 1,461 of 1,718 respondents who were invited to participate in the face-to-face and mail surveys. About one third (30%) answered the questionnaire in Swedish. The remaining preferred Arabic (27%), Dari (14%), Tigrinya (11%), Somali (10%) or English (9%). Of these (n=1,461), 171 respondents who did not answer the question about self-rated sexual health and 172 respondents who checked the option 'do not know' were excluded. Finally, a total of 1,118 (76.5% out of 1, 461) respondents who answered were included in this study.

Variables

Relevant variables were selected from the 2018-Swedish Migrants' Sexual and Reproductive Health and Rights (MSRHR-18) survey based on previous literature on social determinants of migrant health, in particular sexual health. The variables were conceptualised according to the framework on social determinants of health (SDH) developed by the Commission on Social Determinants of Health (CSDH) [28]. The CSDH framework posits that contextual structural/social determinants of health inequalities (e.g. income, education, occupation, gender, race/ethnicity, and other factors) operate through a set of intermediary determinants of health (material circumstances, psychosocial circumstances, behavioural and/or biological factors, and the health system) as well as social capital and social cohesion elements that cut across both dimensions to shape health outcomes and wellbeing [28].

Dependent variable

The health outcome or variable of interest in this study was 'Self-rated sexual health'. The WHO and the United Nation Population Fund (UNFPA) working group on measuring sexual health has argued that 'self-perceived sexual health' could probably be a good indicator of 'sexual well-being'. However, the group also pointed out the need for more research to explore different dimensions of 'sexual well-being' to develop a set of appropriate indicators [9]. Against this background, and in the absence of an effective measurement tool of sexual health that includes dimensions across all domains, we considered 'self-rated/perceived sexual health' as an appropriate measure of sexual wellbeing as it could capture both positive and negative elements of sexual health [9].

The WHO's definition of sexual health was used and explained to respondents on request [10]. Thereafter, respondents were asked to answer the following question: how would you rate your sexual health? The response options were: very good, good, fair, bad, and very bad, which were further dichotomised into good (very good or good) and poor (fair, bad, very bad) Self-rated sexual health.

Independent variables

Potential social determinants of self-rated sexual health based on the CSDH framework included variables that described:

Structural factors included seven variables: i) gender was categorised as men, women, and other which included non-binary, do not want to answer, do not know, and other; ii) sexual orientation was constructed based on sexual attraction to people of the opposite sex (heterosexual), the same sex (homosexual), both sexes (bisexual), none (asexual), and other. These orientations were categorised as heterosexual; LGBA+, including lesbian, gay, bisexual, asexual and other; and do not want to answer; iii) age was grouped in four age categories: 15–24, 25–34, 35–44, and 45 or older; iv) religion was categorised as Islam, Christianity, atheism, other, and do not want to answer; v) educational level was categorised as lower secondary or less (0–9 years), upper secondary (10–12 years), and tertiary (more than 12 years); vi) residence permit status was categorised by year of acquisition as: 2016 or later, before 2016, and still awaiting a decision and vii) country of birth was grouped into four regions according to sustainable development goals (SDGs) regional groupings: Central and Southern Asia (CSA), Northern Africa and Western Asia (NAWA), Sub-Saharan Africa (SSA) and other.

Five variables were considered as intermediary determinants: i) difficulty to make ends meet was used as a proxy of material circumstance (consumption potential) and categorised as: No; Yes, once; Yes, more than once; and Yes, before moving to Sweden; ii) having ever been exposed to sexual violence (defined as any sexual act against one's will including sexual harassment and rape) was categorised as Yes and No; iii) ability to choose partner without being limited by family or immediate surroundings was categorised as Yes or No; iv) the extent to which individuals were open about their sexual orientation was categorised as totally or quite open, partly open, and not particularly/not at all open and v) lifetime experience of discrimination and experiences of discrimination in Sweden in the last 12 months

prior to the study were also dichotomised into 'Yes/ever experienced' and 'No/never'.

Health system factors comprised two variables: i) the ability to access or obtain SRH related information and ii) refraining from using SRH services despite needs the previous 12 months were used as a proxy of healthcare access and both were categorised as Yes or No.

Finally, social cohesion and social capital factors contained three variables: i) the extent to which respondents felt that they were part of Swedish society was used as an indicator of social integration and categorised as: Fully/To a great extent and Somewhat/Slightly/Not at all; ii) ability to get emotional support (defined as having someone you trust and can share your feelings with) was categorised as Yes and No and iii) practical support (ability to get help from any person or persons if you are ill or have problems, e.g. get advice, borrow things, help with shopping, repairs etc.) was categorised as Yes, always; Yes, most of the time; and Not often/Never.

Data analysis

Frequency tables and percentages were used to present the descriptive characteristics of the study population. First, bivariate log-binomial regression analyses were performed to identify all variables that were significantly associated with poor self-rated sexual health (model 0). Given the large number of variables, and to avoid overadjustment, a two-step procedure was applied in the next analytical stage, and multivariable analyses were conducted for each one of the groups of potential risk factors. Model 1 included the socio-economic/structural factors; model 2, the intermediary factors (material circumstances and psychosocial); and model 3, the health system, social cohesion, and social capital factors. The significant variables were then included in a final multivariable regression (model 4). Prevalence ratios (PR) and their 95% confidence intervals (95% CI) were estimated as measures of association and statistical inference respectively. Analyses were carried out with Stata software, version 15.

Ethics

Ethical approval for this study was provided by the Regional Ethical Review Committee at Umeå University in Umeå (Regionala Etikprövningsnämnden i Umeå) [Dnr 2017/515-31]. All methods were carried out in accordance with relevant guidelines and regulations. All respondents provided written or oral (when literacy was a barrier) informed consent after being informed in appropriate languages about the study, its aim and objectives, the voluntary nature of participation, their rights to withdraw from the study at any time without consequence, and that the results would be reported anonymously. According to the Swedish Act (2003:460), individuals aged 15–17 may provide their own consent to participate in research, provided they understand the implications for themselves.

RESULTS

Respondent characteristics

The characteristics of respondents are displayed in Table 1. Overall, slightly over half (51.13%) of the 1,118 respondents identified themselves as men, and nearly 2% (n=25) as non-binary/other. Almost 68% of respondents reported being heterosexual, 17% had other sexual orientations, and the remaining (15%) declined to answer the question. Nearly four in ten respondents were 15–24 years (37%), while the oldest age group (45 or over) represented only 15% of respondents. Most respondents were Muslims (63%), followed by Christians (24%). An equal proportion of respondents reported other religions (4%) or declined to answer (4%). Respondents were born in 89 countries mainly located in just three regions: the SSA region (35%), the NAWA region (34%), and the CSA region (23%). Overall, nearly three quarters (74.47 %) of the respondents had completed (at least) lower secondary, primary, or less (6–8 years) education. Six in ten were granted residence permits in 2016 or later, 32% obtained one before 2016, and the remaining (8%) were still awaiting a decision regarding their application.

About six in ten (61.74 %) reported that they had no difficulty in making ends meet during the previous 12 months. Most respondents (68%) were totally or quite open about their sexual orientation. However, one in five (21.30%) were not particularly, or not at all open. Around 10% felt limited by their family or immediate surroundings in terms of with whom they could have an intimate relationship. Around one in five (21%) reported that they had experienced/been exposed to sexual violence or sexual acts against their will. About four in ten respondents felt that they were fully, or to a great extent, part of Swedish society. Lifetime experience of discrimination, or in the previous 12 months in Sweden was reported by 19% and 15% of respondents, respectively.

Around one third (33%) reported that they could not often or never get help from other persons if they felt ill or were experiencing problems. About seven in ten respondents (66.27 %) said that they had someone that they trusted and with whom they could share their feelings. Nearly one third (33.73 %) were unable to obtain SRH-related information, and around one in ten refrained from using SRH services despite knowing that they need support (10.66%).

Prevalence of poor self-rated sexual health according to the independent variables

Overall, nearly 19% of the 1,118 participants reported poor self-rated sexual health. Respondents who identified themselves as non-binary or other, those who declined to answer questions about their sexual orientation or religion, and those in the eldest (> 44 years) age group reported the highest prevalence of poor self-rated sexual health, compared to their counterparts in this study. Respondents with lower than tertiary education, those born in CSA and NAWA regions, and those who were

still awaiting a decision reported a worse self-rated sexual health to a greater extent than others (See Table 1 for more details).

In terms of material and psychosocial factors, respondents who experienced difficulty in managing their regular expenses more than once, those who felt limited in their choice of partner, those who declared being not particularly (or not at all) open with their sexual orientation, and those who had experienced sexual violence (any form of sexual act against their will) and discrimination in Sweden in the previous 12 months or in country of origin also reported a poorer self-rated sexual health than the reference groups.

Finally, those with less social cohesion/capital, those who did not know where to access more information on SRH, and those who refrained from seeking SRH care despite their needs, reported worse/poor sexual health to a greater extent than the reference groups (See Table 1 for more details).

Table 1. The characteristics of respondents and prevalence of poor self-rated sexual health.

Characteristic	Number of respondents (%)	Number of respondents who reported poor self-rated sexual health (%)
Structural determinants		
Gender		
Women	643 (47.04)	101 (20.61)
Men	699 (51.13)	92 (16.11)
Other	25 (1.83)	7 (36.84)
Sexual orientation		
Heterosexual	787 (68.38)	121 (17.24)
LGBA+	195 (16.94)	33 (20.00)
Don´t want to answer	169 (14.68)	27 (23.89)
Age (years)		
15-24	505 (37.00)	58 (16.57)
25-34	393 (28.79)	60 (17.60)
35-44	260 (19.05)	36 (15.65)
45+	207 (15.16)	43 (26.54)
Religion		
Christianism	322 (24.22)	36 (13.28)
Atheism	69 (5.03)	11 (18.03)
Do not want to answer	52 (3.79)	10 (27.03)
Islam	859 (62.65)	141 (21.36)
Another	59 (4.30)	6 (12.00)
Educational level		
Lower secondary or less	980 (74.47)	147 (19.68)
Upper and post-secondary	119 (9.04)	21 (19.44)
Tertiary	217 (16.49)	24 12.06)
Region of birth		
European Union, Canada and Latin America	94 (7.33)	7 (9.72)
Central and Southern Asia	298 (23.23)	46 (21.30)
Northern Africa and Western Asia	439 (34.22)	76 (21.35)
Sub-Saharan Africa	452 (35.23)	55 (14.95)
Obtained residence permit		
2016 or after	767 (59.83)	111 (17.48)
Before 2016	411 (32.06)	61 (18.60)
Still awaiting a decision	104 (8.11)	18 (26.87)
Intermediary determinants		
Difficulties to make ends meet		
No	823 (61.74)	92 (14.20)
Yes, once	149 (11.18)	15 (11.81)
Yes, more than once	285 (21.38)	79 (32.64)
Yes, but before moving to Sweden	76 (5.70)	12 (23.08)
Ability to choose partner without being limited by family or immediate surrounding		
Yes	1319 (90.28)	182 (18.22)
No	142 (9.72)	26 (21.85)

Openness about gender identity/sexual orientation		
Totally /Quite	741 (67.73)	96 (14.88)
Partly	120 (10.97)	32 (29.36)
Not particularly /Not at all	233 (21.30)	47 (25.27)
Exposure to sexual violence (n=1107)		
No	875 (79.04)	131 (17.92)
Yes	232 (20.96)	48 (24.00)
Lifetime experience of discrimination		
No	1189 (81.38)	143 (15.78)
Yes	272 (18.62)	65 (30.66)
Experience of discrimination in Sweden		
No	1239 (84.80)	161 (17.22)
Yes	222 (15.20)	47 (25.68)
Social cohesion and capital determinants		
Feeling integrated:		
Fully/To a great extent	587 (43.42)	78 (15.85)
Somewhat/Slightly/Not at all	765 (56.58)	126 (21.18)
Ability to get emotional support		
Yes	956 (69.13)	118 (15.11)
No	427 (30.87)	88 (27.50)
Ability to get practical support		
Yes, always	475 (34.55)	49 (12.86)
Yes, most of the time	444 (32.29)	65 (17.91)
Not often/ Never	456 (33.16)	93 (26.20)
Health system determinants		
Ability to access information about SRH		
Yes	715 (66.27)	94 (15.14)
No	364 (33.73)	80 (27.49)
Refraining from using health care despite needs		
No	1089 (89.34)	143 (16.00)
Yes	130 (10.66)	49 (41.88)

Factors associated with poor self-rated sexual health

The bivariate analysis in the crude model 0 showed that poor self-rated sexual health was significantly associated with almost all variables included in this study, except for ability to choose a partner without being limited by family or immediate surroundings. The results also showed a higher risk for poor sexual health among those with 'other' gender and those who declined to answer the question about sexual orientation. This is worthy of consideration even though the association was not statistically significant. In model 1, only two (age and educational attainment) of the included variables remained significantly associated with poor self-rated sexual health. However, while the association between obtaining a residence permit and self-rated sexual health was not statistically significant, there was a higher risk of poor self-rated sexual health among those who were awaiting a decision, and this deserves consideration. All variables included in model 2 were significantly associated with poor self-rated sexual health expect for exposure to sexual violence. Likewise, all social cohesion/capital and healthcare access variables included in model 3 were associated with poor self-rated sexual health.

The final fifth model included all variables that were significantly associated with poor sexual health in the previous multivariable models. In this model, older (>44 years) age (PR: 1.83; 95% CI: 1.08, 3.10), low educational attainment (PR: 1.80; 95% CI: 1.04, 3.11), repeated difficulty in making ends meet (PR: 1.51; 95% CI: 1.01, 2.26), being not at all or not particularly open about one's sexual orientation (PR: 1.62; 95% CI: 1.06; 2.49), lifetime experience of discrimination (PR: 1.61; 95% CI: 1.09, 2.39), and refraining from seeking SRH services despite felt needs (PR: 1.87; 95% CI: 1.22, 2.85) remained associated with poor self-rated sexual health. Though not statistically significant, those who experienced discrimination in the previous 12 months prior to the study (PR: 1.46; 95% CI: 0.95,2.24) had a higher risk of poor self-rated health, and this is also worth considering Table 2.

Table 2. Factors associated with poor self-rated sexual health.

	Model 0: PR (95% CI)	Model 1: PR (95% CI)	Model 2: PR (95% CI)	Model 3: PR (95% CI)	Model 4: PR (95% CI)
Structural determinants					
Gender					
Women	1				
Men	0.78 (0.61, 1.01)				
Other	1.79 (0.97, 3.30)				
Sexual orientation					
Heterosexual	1				
LGBA+	1.16 (0.82, 1.40)				
Do not want to answer	1.39 (0.96, 2.00)				
Age (Years)					
15-24	1	1			1
25-34	1.06 (0.76, 1.47)	1.22 (0.78, 1.91)			1.45 (0.91, 1.32)
35-44	0.94 (0.65, 1.38)	1.10 (0.66, 1.81)			0.93 (0.52, 1.65)
45+	**1.60 (1.13, 2.27)**	**1.70 (1.04, 2.78)**			**1.83 (1.08, 3.10)**
Religion					
Christianism	1	1			
Atheism	1.36 (0.73, 2.51)	1.57 (0.72, 3.44)			
Do not want answer	**2.03 (1.10, 3.75)**	1.68 (0.70, 4.05)			
Islam	**1.61 (1.15, 2.25)**	1.31 (0.81, 2.12)			
Another	0.90 (0.40, 2.03)	1.06 (0.42, 2.68)			
Education					
Tertiary	1	1			1
Upper and post-secondary	1.61 (0.94, 2.76)	1.45 (0.76, 2.76)			1.69 (0.83, 3.42)
Lower secondary or less	**1.63 (1.09, 2.44)**	**1.66 (1.02, 2.68)**			**1.80 (1.04, 3.11)**
Region of birth					
European Union, Canada, Latin America	1	1			
Central and Southern Asia	**2.19 (1.04, 4.63)**	1.49 (0.64, 3.50)			
Northern Africa and Western Asia	**2.19 (1.06, 4.56)**	1.74 (0.76, 3.99)			
Sub-Saharan Africa	1.54 (0.73, 3.24)	1.25 (0.53, 2.94)			
Obtained residence permit					
2016 or after	1	1			
Before 2016	1.06 (0.80, 1.41)	1.13 (0.78, 1.63)			
Still awaiting a decision	**1.54 (1.00, 2.36)**	1.81 (0.99, 3.33)			
Intermediary determinants					
Difficulties making ends meet					
No	1		1		1
Yes, once	0.83 (0.50, 1.39)		0.72 (0.40, 1.29)		0.53 (0.24, 1.17)
Yes, more than once	**2.30 (1.77, 2.99)**		**1.86 (1.37, 2.53)**		**1.51 (1.01, 2.26)**
Yes, but before moving to Sweden	**1.62 (0.96, 2.76)**		1.62 (0.91, 2.87)		1.23 (0.58, 2.61)

Ability to choose partner without being limited by family or immediate surrounding					
Yes	1				
No	1.20 (0.83,1.73)				
Openness about gender identity/sexual orientation					
Totally/Quite	1		1		1
Partly	**1.97 (1.40, 2.78)**		**1.53 (1.06, 2.22)**		1.52 (0.92, 2.52)
Not particularly/Not at all open	**1.70 (1.25, 2.31)**		**1.64 (1.19, 2.25)**		**1.62 (1.06, 2.49)**
Ever been exposed to sexual violence					
No	1		1		
Yes	**1.34 (1.00, 1.79)**		1.12 (0.82, 1.51)		
Lifetime experience of discrimination					
No	1		1		1
Yes	**1.95 (1.51, 2.50)**		**1.69 (1.26, 2.26)**		**1.61 (1.09, 2.39)**
Discrimination in Sweden					
No	1		1		1
Yes	**1.49 (1.12, 1.98)**		**1.47 (1.08, 2.01)**		1.46 (0.95, 2.24)
Social cohesion and capital determinants					
Feeling integrated					
Fully/To a great extent	1			1	
Somewhat/Slightly/Not at all	**1.34 (1.03, 1.73)**			1.32 (0.99, 1.76)	
Emotional support					
Yes	1			1	1
No	**1.82 (1.43, 2.32)**			**1.38 (1.03, 1.86)**	1.33 (0.88, 2.01)
Practical support					
Yes, always	1			1	1
Yes, most of the time	1.39 (0.99, 1.96)			1.31 (0.89, 1.93)	1.24 (0.77, 2.02)
Not often / Never	**2.04 (1.49, 2.79)**			**1.58 (1.08, 2.33)**	1.35 (0.82, 2.26)
Health system determinants					
Ability to access information on SRH Care					
Yes	1			1	1
No	**1.82 (1.40, 2.36)**			**1.47(1.12, 1.94)**	1.25 (0.86, 1.83)
Refraining from seeking health care despite needs					
No	1			1	1
Yes	**2.62 (2.02, 3.40)**			**2.19 (1.66, 2.88)**	**1.87 (1.22, 2.85)**

In bold: Statistically significant associations. Model 0 included bivariate analyses for each variable. Model 1 included all significant socio-economic and structural factors. Model 2 included all significant intermediary factors, including material circumstances and psychosocial elements. Model 3 included all significant factors related to the health system, social cohesion, and social capital. Model 4 included all variables that remained significant from Models 1 to 3.

DISCUSSION

The results show a 19% prevalence of poor self-rated health with disparities linked to age and educational attainment, material circumstances, psychosocial, and healthcare access factors. There is a scarcity of studies on self-rated sexual health in the literature, being the most used measure/indicator, sexual satisfaction showed a strong correlation with self-rated sexual health in this study (unpublished data). Though not directly comparable, the prevalence of poor self-rated sexual health in this study was lower than the prevalence of dissatisfaction with sexual life reported in the Swedish national survey on SRHR and the British national survey of Sexual Attitudes and Lifestyles (Natsal-3), where nearly four in ten respondents reported not being satisfied with their sexual lives [11, 12]. The low prevalence may also be the result of social desirability responding to the sexual health question since this is a sensitive and taboo topic in many cultures and migrant communities [29]. Migrants, particularly recent migrants, may be prone to give socially desirable answers if they equate poor self-rated sexual health to HIV/STIs, which are considered socially unacceptable and likely to result in negative consequences, including deportation. For instance, a previous study from Sweden has shown that fear of deportation may limit legal migrants' access to available HIV related services [30].

This relatively lower prevalence of poor self-rated sexual health could partly be explained by the so called 'healthy migrant effect or healthy immigrant paradox' theory/hypothesis. This refers to the unexpected health advantages of migrant groups settled in receiving countries, which have been documented in a variety of outcomes, including reproductive health and sexual behaviours [31, 32]. However, it has been argued in other studies that the 'healthy migrant effect' has limited generalisability, and could be better conceptualised as outcome-specific and related to migrants' age, gender, educational level, and ethnicity, length of stay as well as the stressful social, cultural, economic and emotional experiences that newly arrived migrants face when trying to adapt to a new country [31, 33, 34]. This also seems to be supported in this study which shows disparities in self-rated poor sexual health based on different social determinants, regardless of time since the acquisition of the residence permit. Our findings underscore the limitations of this effect in the context of sexual health outcomes.

Old age and low educational attainment appeared as the most important structural factors associated with an increased risk of poor self-rated sexual health in this study. While it is obvious that sexual health may be less immediately relevant for some young people who are not yet sexually active, older age at the time of immigration has been reported to increase the odds of poor self-rated health among first-generation migrants in Sweden [35]. Evidence suggests that sexual health in middle-aged or elderly people is often overlooked in research, policy, and practice, despite the global call for the need to implement a life course approach in addressing SRHR issues [36]. For instance, middle-aged and elderly people are not specifically mentioned in the Swedish National strategy for SRHR among the five priority groups whose SRHR need to be strengthened [37]. Moreover, existing evidence suggests that people of older age face many barriers concerning their sexuality, which can ultimately impact their self-rated sexual health. These include, among other things, a decline in some aspects of sexual functioning, poor general health, taboos, community attitudes towards sexuality in older age and general perceptions of an 'asexual' old age, lack of appropriate services that are responsive to their specific needs, and difficulties in discussing this topic with healthcare professionals [36, 38]. Furthermore, middle-aged and old migrants may often move alone and leave their partners behind, which may negatively affect their possibility of having pleasurable and safe sexual experiences. In contrast, young migrants are often single and have the possibility of establishing new romantic and sexual relationships or finding new partners. As the world's population is ageing, achieving true healthy ageing entails that the SRHR issues of old people, including those of old migrants, cannot be ignored. On the other hand, migrants with low health literacy and limited language proficiency are well-known to have poorer health outcomes [39]. Low levels of education have been associated with poor self-rated health and other adverse health outcomes in several studies [34, 40, 41]. Highly educated individuals may be able to access and process information about health and healthcare and apply that information to improve their health.

Almost all intermediary factors included in the final model were significantly associated with an increased risk of poor self-rated health except exposure to sexual violence (sexual acts against one's will), illustrating the interplay between structural and intermediary factors, as well as the impact of the socio-economic position on health inequalities. A recent review has shown an association between reporting more constrained socioeconomic conditions, mainly in relation to income, education, and occupation, and reporting poorer indicators of sexual wellbeing [42]. The association between experience of discrimination and poor self-rated sexual health stressed the impact of all experiences through different phases of the migration trajectory on migrant health in general, and on sexual health in particular [4, 15]. Surprisingly, although those who reported being subjected to sexual violence reported poor self-rated sexual health to a greater extent, there was no statistically significant association between exposure to sexual violence and poor self-rated sexual health. This may be the consequence of adaptive coping strategies that can mitigate the impact of sexual violence on sexual health. Previous studies on sexual violence among migrants suggest that the major underreporting of sexual violence was due to the stigma and normalisation of violence in social contexts marked by impunity [43, 44]. However, respon-

dents who reported being subjected to sexual violence in this study also reported poor self-rated sexual health to a greater extent than those who did not.

The results further revealed a higher risk of poor self-rated sexual health among respondents who were partly, or not at all, open about their sexual identity/orientation compared to those who were open. In relation to this, those who belonged to the 'other' gender subgroup and those who declined to state their sexual orientation reported the highest prevalence of poor self-rated sexual health. The small sample sizes of these subgroups probably make it difficult to detect significant differences between subgroups. Nevertheless, a scoping review revealed that lesbian, gay, bisexual, trans, and queer (LGBTQ) migrants were vulnerable to victimisation which started in their home country and continued in the country of destination, where they faced discrimination while managing posttraumatic stress disorder and depression [43]. Consequently, many may prefer or choose to conceal their sexual identity to avoid harassment, but at the same time this may negatively impact on their ability to achieve sexual health and wellbeing. Moreover, most LGBTQ migrants from the Middle East, North Africa, and Asia, who participated in a mixed method study conducted in Austria and the Netherlands, reported that their most painful event had occurred prior to migration, and that their migration was precipitated by an event related to their sexual and/or gender identities. The qualitative findings also suggested that they encountered targeted violence and abuse throughout migration and upon their arrival into those countries from other refugees and immigration officials [45]. Another study that explored the problems experienced by LGBTQs with a migration background living in Belgium identified issues related to the acceptance of homosexuality, rigid gender roles, and intersectional experiences of racism and exclusion due to their LGBTQ and migrant identities [46], and such an environment can affect their ability to achieve sexual health and wellbeing. However, the authors concluded that the limited acceptance of LGBTQs was not only connected to particular cultures or religion [46]. In other words, LGBTQ migrants' sexual health and wellbeing is influenced by the targeted victimisation and abuse, including psychological abuse and physical and sexual violence, that they encounter throughout the migration process.

Not surprisingly, respondents who refrained from seeking care despite their felt needs had a higher risk of reporting poor self-rated sexual health than those who did not, suggesting that available services may not be accessible to migrants. Previous research has shown that migrants often face complex barriers that may limit their access to available SRH services [18, 19], which can worsen pre-existing health conditions. These obstacles include, among others, lack of knowledge about available services and difficulty in navigating the health system, language barriers, legal status, and discrimination [17-19, 30].

Nevertheless, social cohesion factors, which, according to the SDH framework, cut across both structural and intermediary factors to shape health, were not significantly associated with poor self-rated sexual health in the final model 4. It is possible that social cohesion factors interact with structural (age and educational level) and intermediary (material circumstances, openness about sexual identity/orientation, past exposure to discrimination) factors to influence the risk of poor self-rated sexual health. This stresses the need for more research to better understand the relationship between social cohesion factors and disparities in self-rated sexual health.

Strengths and limitations

This study has both strengths and limitations. One strength is that it is one of the few studies to have focused on self-rated sexual health; most studies have focused on self-rated health. Another strength is that the questionnaire was translated into languages spoken by large migrant communities, and migrants with limited literacy were assisted during data collection to include those with different backgrounds. The research team also included individuals with migrant backgrounds, who contributed as translators, research assistants and researchers.

This study also has some limitations. This is a cross-sectional study. Respondents were conveniently selected, and we only included respondents who were attending SFI or introductory programmes (some respondents could not be included because of the language barrier), which may make it difficult to generalise the results to all migrant groups living in Sweden. However, the sample might be representative of (largest communities of migrants (from non-EU countries) who arrived in Sweden during the 2015 European migrant crisis prior to the study, and the findings can provide useful information for these groups. Moreover, given the self-rated nature of the survey, response bias due to misunderstanding, unrelatability or social desirability, particularly in relation to the outcome – is a possibility. However, He at al. have argued that social desirability dimensions are influenced by country affluence, cultural values, and personality traits appropriate to "fitting in." Thus, removing its effects can erroneously eliminate valid variations between individuals and cultures [47]. Furthermore, while different modes of administration can influence how individuals respond, using multiple methods can also help mitigate mode-specific biases. To minimize variation, we targeted a consistent population, migrants enrolled in language programmes and ensured that all respondents received identical questions and response categories to preserve the meaning and intent of the items. This approach further aimed to enhance participation by accommodating individual preferences, increasing response rates, improving access to hard-to-reach populations, and helping to address potential coverage bias [48]. Finally, to minimize and address bias due to

translation. First, the questionnaire was pilot-tested and thereafter adjusted before being administered. Second, we used back translation to check any inconsistencies in translation and the translation was done by professional interpreters and master students speaking the language and originating from the same cultural background.

Conclusion

This study highlights the prevalence of poor self-rated sexual health among migrants, while revealing significant disparities across subgroups (due to the heterogeneity of migrants) that warrant targeted attention. These findings can inform policy makers, programme managers, and civil society actors in designing targeted policies and interventions for subgroups at an increased risk of poor sexual health, such as middle-aged and elderly migrants, the least educated, and those who do not fully conform to social expectations on gender identity/sexual orientation. To improve sexual and reproductive health outcomes, it is essential to identify and address the barriers that hinder migrants' access to relevant services. More research is needed to better understand how old age interacts and intersects with low SES and experiences of discrimination and migration (status) to negatively affect sexual health among migrants.

DECLARATIONS

Publication consent

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Competing interests

The authors report no conflicts interest.

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Author contributions

All authors contributed to the conception and design of the study. MB and FKNK were responsible for data acquisition, MSS conducted the analysis, and FKNK interpreted the results and drafted the manuscript. AKH, MSS, and MB critically revised the manuscript for important intellectual content. All authors read and approved the final version to be published and agreed to be accountable for all aspects of the work, ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Data availability

Not applicable.

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Salud sexual autopercibida y factores asociados en migrantes inscritos en programas de idioma sueco: un estudio transversal

RESUMEN

Introducción: La evidencia sugiere que las personas migrantes tienen un mayor riesgo de presentar una peor salud sexual en comparación con las no migrantes. Sin embargo, esta vulnerabilidad puede variar según sus características sociodemográficas y experiencias. Este estudio tuvo como objetivo describir la prevalencia de la autopercepción negativa de la salud sexual, su distribución y los factores de riesgo asociados entre migrantes en Suecia.
Métodos: Este estudio corresponde a un análisis secundario de la encuesta de Salud y Derechos Sexuales y Reproductivos de Migrantes (MSRHR-2018), realizada en 2018, que incluyó a un total de 1,118 migrantes inscritos en programas de idiomas. Los datos se analizaron mediante análisis descriptivo, bivariado y regresión multivariable.
Resultados: Alrededor del 19% de los participantes reportaron una autopercepción negativa de su salud sexual. Esta se asoció con mayor edad (>44 años) (RP: 1,83; 95% IC: 1,08–3,10), bajo nivel educativo (RP: 1,80; 95% IC: 1,04–3,11), dificultades recurrentes para llegar a fin de mes (RP: 1,51; 95% IC: 1,01–2,26), no ser en absoluto o no ser particularmente abierto sobre la propia orientación sexual (RP: 1,62; 95% IC: 1,06–2,49), experiencias de discriminación a lo largo de la vida (RP: 1,61; 95% IC: 1,09–2,39), y evitar buscar servicios de salud sexual y reproductiva (SSR) a pesar de sentir necesidad (RP: 1,87; 95% CI: 1,22–2,85).
Conclusión: Este estudio resalta la prevalencia de la autopercepción negativa de la salud sexual entre personas migrantes, al mismo tiempo que revela disparidades significativas en subgrupos específicos que requieren una atención especial. Estos hallazgos pueden orientar a responsables políticos, gestores de programas y actores de la sociedad civil en el diseño de políticas e intervenciones focalizadas para subgrupos de migrantes en mayor riesgo de una peor salud sexual, como los migrantes de mediana y avanzada edad, aquellos con menor nivel educativo y quienes no se ajustan plenamente a las expectativas sociales sobre identidad de género u orientación sexual. Para mejorar los resultados en salud sexual y reproductiva, es fundamental identificar y abordar las barreras que limitan el acceso de las personas migrantes a los servicios de salud pertinentes.

Palabras clave: Salud sexual, migrantes, inequidades, determinantes sociales, discriminación, servicios de salud, acceso, Suecia.

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