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Sexual and reproductive health interventions geared toward adolescent males: A scoping review

Mariam Sawalma [a,*], Aisha Shalash [a,b], Yasmeen Wahdan [a], Maysaa Nemer [a], Hala Khalawi [c], Bassel Hijazi [d], Niveen Abu-Rmeileh [a]

[a] Institute of Community and Public Health, Birzeit University, Palestine
[b] School of Medicine, University of Limerick, Limerick, Ireland
[c] The Department of Social Sciences, Bethlehem University, Palestine
[d] Faculty of Medicine, Al-Quds University, Palestine

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ABSTRACT

Problem: Male adolescent sexual and reproductive health (SRH) interventions are rare worldwide. The high prevalence of sexually transmitted infections and pregnancies among female and male adolescents worldwide highlights the need for comprehensive interventions that include both genders in the educational process.
Objective: Our main focus is studying and analysing male-focused SRH interventions globally to include males in evidence-based interventions that improve SRH of adolescent males.
Eligibility criteria: This Review was conducted using the PRISMA extension for scoping reviews. The following databases were searched: PubMed, Embase, Web of science, Scopus, CINAHL and PsycInfo. Inclusion criteria: 1) No time or date limits; 2)all types of studies; 3)SRH campaign; 4)males; 5)10 to 19 years.
Sample: Five thousand and sixty-eight articles were identified and 166 peer-reviewed articles met the inclusion criteria.
Results: Family planning was identified as the primary domain covered for adolescents. While interactive activities was the most common method used to deliver information to adolescents about sexual health. SRH interventions for males were most prevalent in America. While in the Eastern Mediterranean region (EMR), no male interventions were found in our review.
Conclusion: This scoping review emphasizes the need to include adolescent males in sexual and reproductive health interventions, particularly in low- and middle-income countries (LMICs) and the EMR. Policymakers should develop comprehensive programs that address male-specific needs, improve training for intervention providers, and enhance reporting processes to identify gaps and barriers to male inclusion.
Implication: Future research should be directed toward the obstacles that prevent SRH interventions targeting males from being carried out.
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Introduction

Sexual and reproductive health (SRH) services are considered fundamental for everyone (Engel et al., 2019). Adolescents aged 10 to 19 years, comprising 16% of the population worldwide, with 1.3 billion adolescents (The United Nations Children's Fund, 2022), suffer unmet sexual health needs, particularly unmarried sexually active adolescents. In addition, they face different barriers to accessing their sexual health needs, which include a lack of knowledge, the ability to access healthcare services, and doubting the confidentiality of sexual healthcare providers (Patton et al., 2016).

Significant developmental changes occur on various levels during adolescence, including both physical and psychological changes (Dorn et al., 2019). During puberty, curiosity in topics related to sex among adolescents and learning about healthy sexual habits, and sexual needs such as where to seek help and treatment for sexual problems begin to rise (Jayasundara, 2021); it is also during this time that adolescents develop self-awareness and develop distinct identities

Abbreviations: SRH, Sexual and Reproductive Health; EMR, Eastern Mediterranean Region; AMR, Region of the Americas; AFR, African Region; WPR, Western Pacific Region; EUR, European Region; SEAR, South-East Asian Region; LMICs, Low-middle-income Countries; WHO, World Health Organization; PRISMA-ScR, PRISMA Extension for Scoping Reviews.

* Corresponding author at: PO Box 14, Birzeit West Bank, Palestine.
E-mail addresses: mariamsawalma95@gmail.com (M. Sawalma), aashalash@birzeit.edu (A. Shalash), mnemer@birzeit.edu (M. Nemer), nrmeileh@birzeit.edu (N. Abu-Rmeileh).

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(Karibeeran & Mohanty, 2019). As adolescence is considered a good time for intervention (Farahani, 2020), it is critical to invest in this critical period to promote the right attitudes and social and behavioural skills. There is a global consensus that improving and protecting adolescent health will benefit adolescents' health in the future and will last for subsequent generations (Patton et al., 2016).

The increasing number of sexually active adolescents cannot be overlooked; this increase can have serious consequences, including the spread of sexually transmitted infections and the high number of early pregnancies (Farahani, 2020). High adolescent pregnancy rates and the spread of sexually transmitted infections are two major problems that low-middle-income (LMICs) settings suffer from (Johnson & Moore, 2016; Kalamar et al., 2016). Moreover, adolescents' access to sexual health education and intervention is weak (Meherali et al., 2021); due to poor SRH knowledge among adolescents and the stigma associated with using sexual health services for unmarried youth, especially in conservative communities (Singh et al., 2014). Many policymakers are cautious about those campaigns and are usually afraid that such campaigns may lead to increased sexual activity and several unwanted consequences. Thus they try to limit their spread and effectiveness which creates a gap between the services provided and the actual needs of adolescents, and failure to reach their optimum goals (Feroz et al., 2021; Salam et al., 2016; Speizer et al., 2003). This indicates the urgent need of those conservative communities for SRH improvements such as secure access to accurate information and practical, safe, and affordable contraception should be provided so that adolescents are empowered and well-informed and can make the right SRH choices (Salam et al., 2016).

Efforts to improve sexual and reproductive health should be directed equally to females and males (Bearinger et al., 2007). Historically, reproductive health has been considered a female's branch of health, and the vast majority of sexual and reproductive programs and interventions, and even family planning services, were exclusively provided for females (Kabagenyi et al., 2014). Involving males in sexual reproductive health interventions is more valuable than targeting females alone, as studies have shown that male's engagement in such interventions can raise the use and the continuation of family planning methods, enhance gender equity and relations, and help making informed decisions, thus enhancing overall sexual health (Davis et al., 2016; Greene et al., 2006; Hartmann et al., 2012).

Due to the significant positive effects of involving males on sexual health in general, it is crucial to run SRH programs that welcome males and provide them with SRH services tailored to their needs. The objective of this review is to inform about the various types of sexual and reproductive health campaigns for males around the world, the domains covered, and the methods used in each campaign in order to find the most effective campaign in raising adolescent males' awareness about sexual and reproductive health.

Methodology

The Preferred Reporting Items for Systematic Reviews and Meta-analysis extension for Scoping Reviews (PRISMA-ScR) guidelines was used as a protocol for this scoping review (Tricco et al., 2018), provided as Supplement 1. It was carried out in five phases: (1) identifying the research question using the PICO strategy, (2) conducting the search to identify the relevant studies, (3) including the relevant studies based on the inclusion criteria, (4) charting the data and interpreting it, and (5) summarizing and narrating the results. As our research question was broad and hoped to identify gaps in evidence geared toward the types of sexual reproductive health interventions geared toward adolescent males globally available; a scoping review was found to be the most suitable (Arksey & O'Malley, 2005). No protocol was registered, but a PRISMA flow chart was used to display the number of articles identified, included, and excluded, and the reasons for exclusions.

Search strategy

To identify published data on SRH interventions for adolescent males, a comprehensive literature search was conducted from inception until April 26th, 2022. PubMed, Embase, CINAHL, PsycInfo, Scopus, and Web of science were the electronic databases used. No language or year limitations were used. All screened studies selected for analysis, the reference lists were hand searched for relevant articles.

The search strategy included the following key terms: Sexual reproductive health AND Sexual violence OR sexual harassment OR Premarital sex OR unsafe sex OR Pregnancy OR Sexually transmitted infections OR STIs OR AIDs OR HIV OR HIV testing OR HIV infection OR HIV knowledge OR Condom OR contracept* OR abstinence OR LGBTQ OR lesbian OR Gay OR bisexual OR transgender OR questioning OR Puberty OR fertility OR Sexual rights OR Awareness OR Literacy OR counseling OR education) AND (Campaign OR Program OR intervention) AND (Adolescent OR Teen*) AND (Boy OR male*).

Inclusion and exclusion criteria

Articles were included if they met the following criteria: (1) all types of studies, (2) involved adolescents 10 to 19 years old, (3) was a sexual reproductive health campaign, (4) for males. Our search strategy was not limited by study design, language, or year. Articles were excluded if: (1) not SRH campaign, (2) ages 0–9, 20+, (3) not male oriented, (4) poster, conference abstract or book only.

Selecting studies and collecting data

In order to reduce the risk of reviewer bias, two reviewers independently screened the title and abstract for all articles. Conflicts were resolved by discussion between the two reviewers. A third reviewer was consulted when consensus was not reached. Full-text screening was also done by two independent reviewers; the consensus was reached either by discussions between the two authors or by a third reviewer consultation. Search results were imported on COVIDENCE software (Covidence systematic review software, 2022), a web-based collaboration software platform that streamlines the production of systematic and other literature reviews. Screening and decisions were recorded using the same software.

Data were extracted by two independent reviewers and recorded using Excel (Microsoft Corporation, 2018). The followed data was extracted: Author's name, title, publication year, journal name, country, study design sample size, age, target population, setting of the campaign type of the campaign, the domain of the intervention, subtopics, campaign's duration, campaign's description campaign's methods, outcome of the campaign, assessment of the campaign, challenges facing the campaign, limitations. Missing data was recorded as 'not available'. In cases of discrepancies, the consensus was reached by consulting a third reviewer.

Topics covered in each campaign were divided in accordance with the comprehensive sexuality education programs implemented by the United Nations Population Fund UNFPA, which included the following key concepts: SRH, sexuality and sexual behavior, the human body and development, skills for health, violence and staying safe, understanding gender, "values, rights, and sexuality, relationships (United Nations Population Fund, 2021). The premise of these initiatives is that young people should have access to information that will allow them to make informed choices regarding their sexual health. Narrative synthesis and an explanatory frequency analysis was performed on the extracted data using SPSS software (IBM Corp, 2019).

Results

The database search resulted in 6355 articles from which 1375 duplicates were removed. Hand search resulted in 137 articles, from

which 49 duplicates were removed. A total of 5068 articles were screened. In the first stage of screening -Title and abstract screening- 4302 studies were excluded; 715 studies were assessed for full-text eligibility by two reviewers using the following exclusion criteria; not campaign, intervention, program ($n = 316$), ages 0–9, 20 + ($n = 110$), posters, abstracts, books ($n = 66$), Age group not specified ($n = 26$), full text not found ($n = 19$), campaign exclusively for females ($n = 8$) and not sexual reproductive health-related ($n = 4$), resulting in 549 articles that were excluded. All of these results can be found in (Fig. 1: PRISMA flow diagram).

Characteristics of included studies

Characteristics of the included studies are shown in Table 1. Thirty-five percent of the studies were published between 2013 and 2018. Most were conducted in the region of the Americas (AMR) (47%), as defined by the World Health Organization (WHO) region's division. In contrast to the EMR, where no studies met our inclusion criteria. Additionally, half of the studies took place in high-income countries (51.2%), and only a few studies were conducted in low-income countries (6%). More specifically, the United States of America (USA) accounted for (36.7%) of the 166 studies, which is the largest number of studies from one country. Overall, only 4.8% of studies were exclusively tailored to males. The rest were for both males and females together. As for the targeted age groups, the population included individuals aged between 10 and 19. Only (12.7%) of the campaigns targeted the younger age group (10–14) exclusively, (32.5%) were geared toward the older age group (15–19) years old, and (42.8%) of the studies were geared toward (10–19) years old together.

Domains covered in SRH campaigns/programs

The domains covered in the campaigns, were defined according to the comprehensive sexuality education as defined by UNFPA (United Nations Population Fund, 2021). Most studies covered different domains, and for each domain, several subtopics were identified. 41.5% of the articles addressed only one domain, 36.7% discussed two domains, 19.8% discussed three domains, and 1.8% discussed four domains in their interventions. Subtopics are identified in Table 2. More than three-quarters (87.9%) of the studies had family planning domain, which discussed condom use specifically, contraception in general, safe sex practices, premarital screening awareness, safe motherhood and parent-hood, knowledge of clinic services, and availability of male reproductive health services. The most covered subtopics in this domain were birth-control methods (64.4%) and sexually transmitted infections (62.1%). Family planning was the most covered domain for smaller age

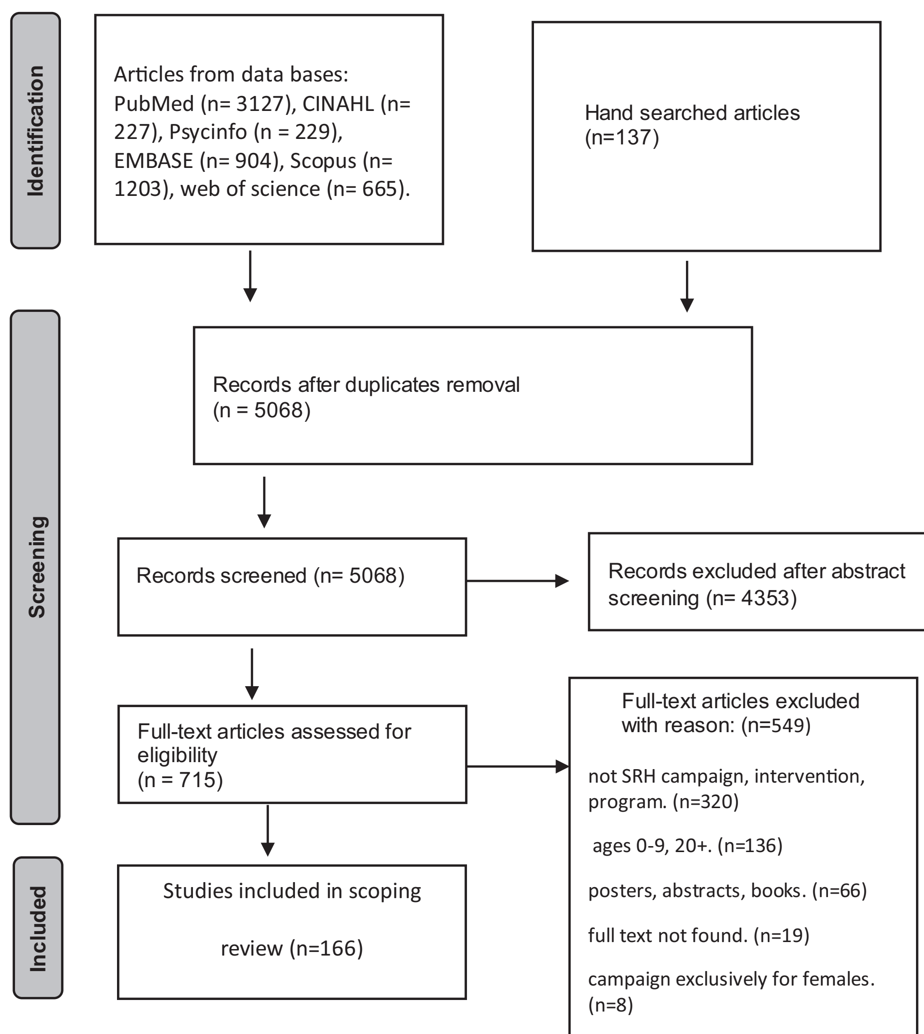

Fig. 1. PRISMA flow diagram of study selection.
A total of 166 articles were eligible for extraction; most of those studies used a quasi-experimental design, which used pre and post-tests to evaluate the effectiveness and the success of the interventions used in the campaigns.

Table 1
Characteristics ($n = 166$).

	Number (%)
Publication year	
1980–1999	18 (10.8%)
2000–2007	27 (16.3%)
2008–2012	38 (22.95)
2013–2018	59 (35.5%)
2019–2022	24 (14.5%)
WHO regions	
Region of the Americas	78 (47%)
African Region	35 (21.1%)
Western Pacific Region	19 (11.4%)
European Region	18 (10.8%)
South-East Asian Region	16 (9.6%)
Age groups	
10–19	71 (42.8%)
10–14	21 (12.7%)
15–19	54 (32.5%)
Target population	
Males and females	157 (95.2%)
Males	8 (4.8%)
Main Domain	
Family planning	146(87.9%)
Sexual Health	52 (31.3%)
Life-skills	48 (28.8%)
Gender identity and rights	42 (25.3%)
Substance use	12 (7.4%)
Methods Used in Campaign/Intervention	
Interactive activities	102 (61.4%)
Lectures	59 (35.6%)
Audio and visual aids	48 (28.9%)
Peer education	26 (15.6%)
Mass methods	22 (13.2%)
Health services promotion	3 (1.8%)
Health services	2 (1.2%)

groups (10–14 years) and both age groups (10–19 years) in all countries.

Sexual health was the second domain identified in (31.3%) of the studies and the most highlighted domain for the younger age group. It involved the anatomy and physiology of adolescents, which was covered in (23.5%) of the articles, and general knowledge of health in (7.2%) of them. Sexual health subtopics discussed reproduction, reproductive physiology, reproductive system anatomy, adolescent health, and puberty changes.

Table 2
Subtopics covered in sexual reproductive health campaigns ($n = 166$).

Topics and Subtopics	Number (%)
Family planning	146 (87.9%)
Birth-control methods	107 (64.4%)
STIs	103 (62.1%)
Pregnancy	18 (10.8%)
Health services	9 (5.4%)
Sexual Health	52 (31.3%)
Anatomy and physiology	39 (23.5%)
General knowledge	12 (7.2%)
Life-skills	48 (28.8%)
Social skills	29 (17.5%)
Negotiation skills	12 (7.2%)
Adolescent-parent communication	9 (5.4%)
Leadership skills	4 (2.4%)
Goal setting	1 (0.6%)
Economic skills	1 (0.6%)
Gender-identity and rights	42 (25.3%)
Identity	22 (13.2%)
Violence	12 (7.2%)
Rights	11 (6.6%)
Stigma	5 (3%)
Values	2 (1.2%)
Sexuality	2 (1.2%)
LGBT-specific education	1 (0.6%)

Life-skills was also an important domain of education for adolescents in (28.8%) of the campaigns. It consisted mainly of social skills (17.5%), negotiation skills (7.2%), adolescent-parent communication (5.4%), leadership skills (2.4%), and both economic skills and goal setting (0.6%). In this domain, several subtopics were taken into consideration, such as adolescent self-esteem, life goals, life responsibilities, developing healthy relationships, and decision-making. In addition, negotiation skills included refusal skills, negotiating condom use, refusing unprotected sex, and maintaining decisions.

The broadest domain, gender identity and rights, was covered in (25.3%) of the articles. It discussed identity, positive body image, and gender roles. (13.2%) of the articles covered the topic of identity which highlighted self-awareness, gender identification and sex roles. Violence was covered in (7.2%) of the articles which discussed sexual violence and sexual abuse. Human rights were explained in (6.6%) of the articles. Human rights included gender equity, sexual and reproductive rights, and how to protect personal rights. Another subtopic under this domain was stigma, which discussed the taboos and the disgrace people suffer with if diagnosed with STIs, specifically HIV in some cultures. Furthermore, values and sexuality were covered in (1.2%) of the articles each. LGBT-specific education was the least covered domain and was discussed only in one article; where a campaign was held in the USA targeting older age groups of males and females together. Finally, only a few studies (7.4%) concentrated on substance use - alcohol and smoking- awareness.

Methods employed in SRH campaigns/programs

A single campaign could use different methods to deliver the campaign's message. More than half (61.7%) of the methods used were interactive techniques that included discussions, games, stories, role-playing, simulation, demonstration, homework, and individual counseling. Interactive techniques were the most frequently used method in campaigns in all countries, especially for older age groups (15–19 years). Lecturing was also an important method employed (37.6%). It was the primary method used in teaching the younger age group of adolescents (10–14 years). Furthermore, 28.9% used audio and visual aids, which consisted of text messages, presentations, booklets, brochures, posters, videos, and films. Further, (15.6%) of the articles utilized peer education, where some students (peers) were well-trained to become peer-educators. The mass method, which includes web-based modules and videos and campaign promotion through social media, for example, using Facebook pages to promote and educate and using TV episodes for campaign promotion, was not commonly used in such interventions (13.2%).

Regarding the most effective method used for improving sexual behavior, interactive activities was responsible for (63.3%) of the improved sexual behavior outcome and (61.9%) of the increased knowledge outcome. In the previous outcomes, lecturing was the second most effective method, resulting in (34.2%) improved sexual outcomes and (37.1%) increased knowledge outcomes. The use of mass methods was the least effective, accounting for only (13.8%) of the improved sexual behavior outcome and (10.5%) of the increased knowledge outcome. When discussing methods and outcomes, keep in mind that each study used multiple methods and multiple outcomes, each of which was measured separately.

Assessment of campaigns/programs outcomes

To assess the campaigns' efficacy in terms of both their content and their execution, several outcomes were evaluated. Sexual behavior (63.8%) and knowledge (63.2%) were the most critical measures calculated. Followed by communication about sex (12.6%), personal attitudes

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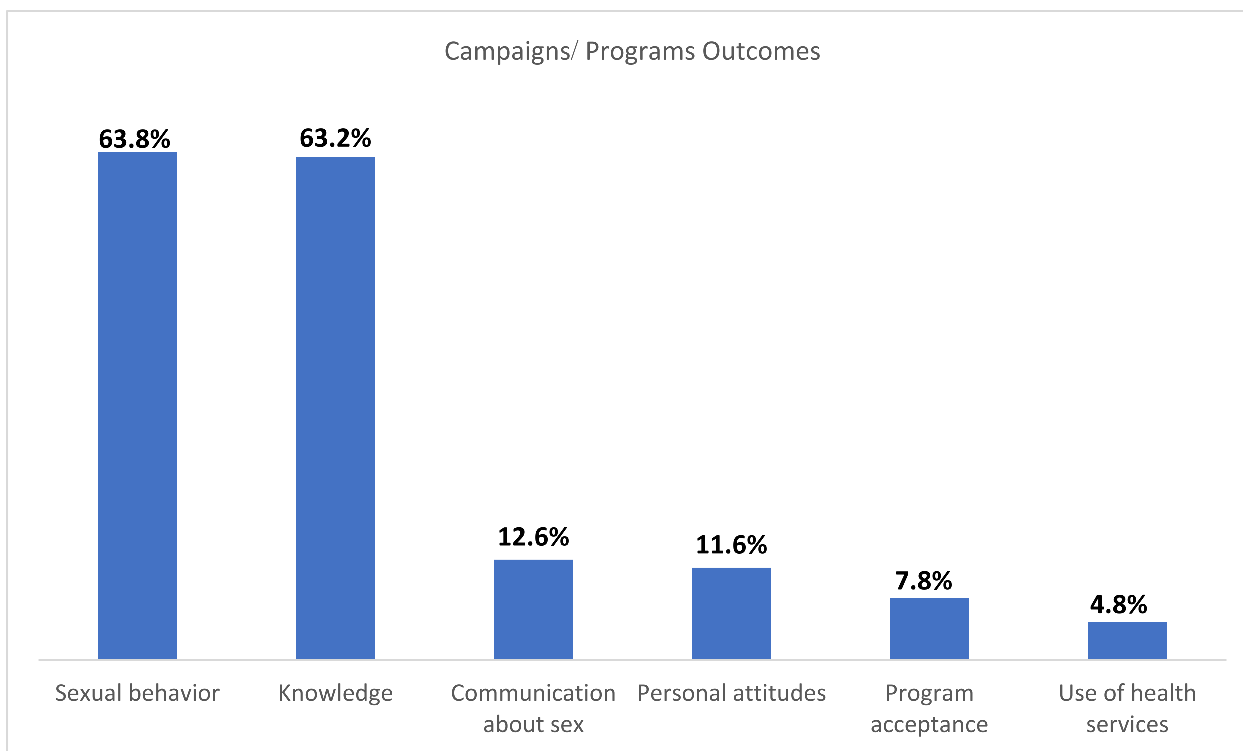

Fig. 2. The percentage of outcomes used to measure the effectiveness of sexual reproductive health programs/campaigns.

(11.6%), program acceptance (7.8%), and use of health services (4.8%). Campaign outcomes reported are shown in Fig. 2.

Discussion

This scoping review described adolescent male SRH awareness programs. It also discussed the program interventions' efficacy, contexts, domains, and methods. This review found a lack of awareness programs for young males (Dzinamarira et al., 2021). Lack of campaigns and awareness programs and low male inclusion are due to several factors. First, males are difficult to convince of the importance of SRH and that it must be a shared responsibility with their partners (Lotfi et al., 2022). Furthermore, studies have shown that one of the major barriers to male's participation in SRH interventions is their inadequate knowledge about the risks of STIs and their resistance to gaining new knowledge in SRH domains (Rahimi-Naghani et al., 2016), influencing their participation and decisions about family planning. This effect is amplified due to power dynamics in which male's decisions and beliefs are prioritized over their partner's (Lantiere et al., 2022). Also, males have trouble discussing sexual issues (Camlin et al., 2016). This could be attributed to traditional masculinity beliefs that views STIs and sex as disgraceful, which have been found to influence males' decisions and care-seeking (Azmi et al., 2022). Males also think health care providers should lead SRH interventions because they're skilled at it, preventing them from taking the lead in the participation in such interventions (Same et al., 2014).

Our review identified family planning as the most used domain in SRH interventions. This domain mainly discussed STIs, and birth-control methods. The high prevalence of STIs among youth in general (Dehne & Riedner, 2001), and among LMICs youth specifically (Mayaud & Mabey, 2004) -For example, nearly 80% of HIV-positive Africans are between 15 and 24 years of age (Gallant & Maticka-Tyndale, 2004; Kalichman et al., 2007),- emphasizes the importance of family planning education as a primary prevention method that can help reduce the incidence of STIs.

Our study found that the different SRH domains used, raised youth awareness of SRH and improved their sexual behaviors. However, those domains concentrated on biological aspects with a less focus on more sensitive topics like safe abortion (Casey, 2015; Chandra-Mouli et al., 2015). The difficulty program developers and decision-makers have in including such topics and being open in adolescent interventions may stem from the stigma associated with adolescent pregnancy, especially in low-income countries, as well as religious considerations and various cultural barrier (Camlin et al., 2016).

As for high-income countries, USA and UK mainly concentrated on family planning due to high STI and teenage pregnancy rates (Stanger-Hall & Hall, 2011). In the USA alone, there are almost ten million new teenage pregnancy cases yearly (Centers for Disease Control and Prevention, 2013). Additionally, studies have shown that the age for marriage has increased, creating a gap between puberty and marriage, which increases reckless sexual activity and multiple sexual partners, making adolescents more susceptible to STIs (Kirby, 2000). Family planning raised awareness about STIs and teen pregnancy by identifying birth-control methods, especially male condoms. Condom use and its benefits were shown in several interventions. Some interventions even provided free of charge condoms to encourage birth control methods use and reduce the negative effects of unprotected sex (MacPhail & Campbell, 2001; Renaud et al., 2009).

In terms of the most commonly used methods in SRH awareness campaigns, interactive techniques such as discussion groups, drama sessions, and acting lessons were the most commonly used. It aimed to increase adolescent positive participation and engagement in the available activities. This method reported improved sexual knowledge and behavior, according to our review and the literature(Ma et al., 2022). On the other hand, mass methods—TV, radio, and others—improved knowledge and health promotion, but they were the least used (Pires et al., 2019). The reason behind this could be attributed to the poor conditions in LMICs that force them to prioritize traditional, and cheaper methods. Also, the "culture of silence" and sociocultural

constraints on discussing sexual topics make mass methods of SRH awareness complicated (Najafi-Sharjabad & Haghighatjoo, 2019).

Each program used a variety of SRH domains and methods, making it difficult to determine which method was used for which domain, especially since studies did not provide this information. However, using multiple domains made the programs more comprehensive and effective at improving sexual health knowledge and behavior. Comprehensive sexuality education has been found to be very effective, so the more comprehensive the intervention, the more beneficial it is to the participants (Kemigisha et al., 2019).

Sexual and reproductive health interventions are scarce in LMICs and low-income countries (Desrosiers et al., 2020a; Fantaye et al., 2022). Almost half of the studies, as our findings show, were conducted in high-income settings. While only (6.0%) of SRH interventions were implemented in low-income countries, (25.9%) were implemented in LMICs. Most of those countries are in conflict and lack security and trained health workers, which may explain the low number of interventions as governments in conflict zones don't prioritize SRH interventions, a lack of skilled teachers, other resources, and funding has hampered SRH intervention (Chavula et al., 2022). SRH interventions in conflict-affected settings should be reported more, as there is currently a general absence of reporting (Munyuzangabo et al., 2020).

The growing rates of STIs among adolescents worldwide, indicate the high number of wrong sex practices (Mazibuko et al., 2023), necessitating male-targeted interventions for maximum reach effectiveness. This requires up to date methods that are acceptable among youth (Astle et al., 2021). One suggestion is using mobile applications for education and consultation on sexually related matters. Using technology can reach youth and involve them in SRH, as adolescents are usually excited to use new creative techniques. In addition, most adolescents have regular access to technology and smartphones, even in LMICs, smartphone use has increased rapidly in the last years (Cornelius et al., 2012; Feroz et al., 2021). It can also overcome adolescent concerns about stigma, confidentiality, and privacy when sharing private sexual information. Thus, For this idea to reach optimal success, it has to be culturally sensitive and socially appropriate for adolescents (Amaugo et al., 2014).

It was notable that none of the included studies reported on campaigns in the EMR. Cultural barriers like religious beliefs, considering care-seeking behavior abnormal, especially for males, and viewing clinics as places that are particular for females and children may explain the lack of SRH interventions in this area (Camlin et al., 2016; Drake et al., 2015). Furthermore, it is difficult for EMR countries with such conservative cultures to engage in gender-related programs. This engagement requires massive inter-sectoral efforts and funding, which generally needs to be improved in those countries' public sectors because a lack of funding forces them to prioritize and focus on female's health, which suppresses the required change (Beia et al., 2021). Furthermore, teachers in the EMR are often unprepared and uncomfortable discussing such sensitive topics (Pokharel et al., 2006), resulting in partial implementation of adolescent SRH interventions (Chandra-Mouli et al., 2015). However, it is important to stress that the aforementioned requirement for reporting should be taken into account when studying SRH intervention in EMR countries, as interventions may be carried out but not reported (Munyuzangabo et al., 2020; Warren et al., 2015). This is primarily due to resource constraints, resulting from unstable politics and economy in those settings living (Singh et al., 2018), forcing them to prioritize service delivery over awareness campaigns, which makes conducting and documenting such campaigns impossible (Desrosiers et al., 2020b).

Strengths and limitations

This scoping review provides a comprehensive overview of global male-inclusive SRH programs, as well as identifying the most commonly SRH domains addressed and used methods to communicate these domains for adolescent males. Yet, because this scoping review only used peer-reviewed articles, there was a dearth of resources, particularly in the EMR. Which lead to a scarcity of sources providing information about potential campaigns that could be conducted in those regions but reported in grey literature.

Implications to practice

This scoping review highlights the need for comprehensive SRH programs for adolescent males, particularly in LMICs and the EMR. The review suggests that efforts should be made to include males in SRH interventions, increase their awareness and participation, provide training to staff and teachers delivering these interventions, and improve the reporting process for SRH interventions in LMICs and humanitarian settings. Implementing these recommendations can lead to more effective and inclusive SRH interventions, ultimately improving the SRH outcomes of adolescent males.

Conclusion

This scoping review provides an overview of the approaches and topics covered in interventions directed toward adolescent males around the world. It also details the primary features of these interventions, including where they were held, who they were aimed at, and how old their intended recipients were. The findings of this review can assist policymakers in LMICs, particularly those in the EMR, in developing a comprehensive program that incorporates the methods and domains that have been found to be effective, particularly for males, in order to maximize the benefit for all. Efforts should be directed toward greater inclusion of males in SRH interventions, particularly in the EMR, where such interventions for males were found to be lacking. Males should also be made more aware of the importance of participating in such interventions and encouraged to do so. More training should be provided to the staff and teachers in charge of providing such interventions in order to improve their abilities to teach such sensitive topics and deal with teenage participants who can be difficult to deal with. Finally, improving the reporting process of SRH interventions in LMICs and humanitarian settings should be prioritized, as this allows future research to identify gaps and barriers to including males in those interventions, thereby improving SRH in those settings.

Authors contributions

All authors discussed and developed the research question. Mariam Sawalma: built the search strategy, performed this in all databases and wrote first draft of the manuscript, was an independent reviewer for the first selection process at all stages of the study and revised the draft manuscript, and performed data extraction. Aisha Shalash, Yasmeen Wahdan, Maysa Nemer and Niveen Abu-Rmeileh: were the independent reviewers for the first selection process at all stages of the study and revised the draft manuscript. Hala Khalawi and Bassel Hijazi: performed data extraction. All authors read, revised all drafts and approved the final manuscript.

Ethical consideration

Not applicable.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.pedn.2023.07.004.

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