

Systematic Review

Knowledge and Awareness of Sexually Transmitted Diseases in Men and Women of Pakistan-A Systematic Review

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ABSTRACT

Background: Sexually transmitted diseases (STDs) pose a significant public health challenge globally, with varying levels of awareness and knowledge observed across different populations. In Pakistan, cultural, social, and educational factors contribute to the complexity of STD prevention and control, necessitating a detailed understanding of the current awareness levels to inform effective public health strategies.

Objective: This systematic review aims to assess the current state of knowledge and awareness regarding STDs among the Pakistani population, identify existing gaps, and explore the implications for healthcare interventions.

Methods: A comprehensive literature search was conducted across multiple databases, adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The review included studies published in English post-2000, focusing on the adult population of Pakistan. Data extraction focused on study characteristics, knowledge and awareness levels, sources of information, and preventive measures.

Results: The review identified a general awareness of STDs, particularly HIV/AIDS, attributed mainly to global awareness campaigns. However, significant knowledge gaps were noted, especially regarding transmission methods and preventive practices. Awareness levels varied by gender and location, with urban populations and women showing slightly higher levels of awareness. Electronic media emerged as a significant source of information, yet misconceptions and inadequate knowledge about prevention were prevalent.

Conclusion: The systematic review reveals critical gaps in STD knowledge and awareness among the Pakistani population, highlighting the need for targeted educational programs. Addressing these gaps through culturally sensitive and gender-inclusive approaches is crucial for enhancing STD prevention efforts in Pakistan.

Keywords: Sexually Transmitted Diseases, STD Awareness, Pakistan, Public Health, Health Education, HIV/AIDS Awareness.

INTRODUCTION

Sexually transmitted diseases (STDs) represent a critical public health challenge globally, affecting both developed and developing countries with a significant impact on individual and community health. These infections, primarily transmitted through sexual contact including vaginal, anal, and oral routes, can also spread via non-sexual means such as through blood, blood products, and from mother to child during pregnancy and childbirth (5). STDs encompass infections caused by bacteria, viruses, or parasites, with the majority being initially asymptomatic, thereby increasing the risk of unknowing transmission to others (1). Annually, an estimated 357 million new cases of STDs are reported worldwide, with the distribution including 131 million cases of chlamydia, 78 million of gonorrhea, 5.6 million of syphilis, and 143 million of trichomoniasis. This translates to nearly one million individuals contracting an STD each day, most of whom are unaware of their infection status, further perpetuating the cycle of transmission (2).

The resurgence of STDs such as chlamydia, gonorrhea, and syphilis in several European nations since the mid-1990s, particularly among adolescents aged sixteen to nineteen, underscores the pressing need for enhanced public health interventions (3). This need

is even more pronounced in developing countries, where the burden of non-curable viral STDs is compounded by factors such as increased travel and shifts in sexual and reproductive behaviors among the youth. These changes necessitate a heightened focus from healthcare professionals on education and care to address the evolving landscape of sexual health (4).

In Pakistan, the challenges surrounding STD prevention and control are further exacerbated by cultural norms, gender disparities, and educational deficits. Pakistani adolescents, in particular, face unique barriers due to cultural constraints and gender inequality, which hinder open discussions about personal and sensitive health issues, including STDs, with parents and healthcare providers. This situation is aggravated by the lower literacy rates among females compared to males, contributing to a general lack of knowledge about reproductive health, contraception, and STDs. The socio-political and cultural dynamics of Pakistan pose significant obstacles to effective STD prevention strategies, highlighting the critical need for targeted interventions that address these unique challenges (6,7).

Therefore, this systematic review aims to critically assess the level of knowledge and awareness regarding STDs among men and women in Pakistan. By examining the existing literature within the context of the country's specific socio-cultural and educational landscape, this review seeks to identify gaps in awareness and understanding of STDs, which are crucial for informing future public health policies and interventions aimed at mitigating the spread of these infections and enhancing sexual health outcomes among the Pakistani population.

MATERIAL AND METHODS

The methodology adopted for this study was a systematic review aimed at evaluating the level of knowledge and awareness regarding sexually transmitted diseases (STDs) among men and women across various provinces of Pakistan. This review was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement, ensuring a structured and comprehensive approach to the literature search and selection process. The databases utilized for sourcing relevant literature included PubMed, Google Scholar, Scopus, and Index Copernicus, with the search parameters set to include studies published in English since the year 2000 without any language restrictions.

The inclusion criteria were specifically designed to encompass studies that reported on the awareness and knowledge of STDs among the adult male and female population of Pakistan, aged 15 to 49 years. Excluded from the review were studies focusing on parasitic infections, those conducted among healthcare workers, studies that utilized scores or general terms to measure awareness levels, research published before 2000, and various forms of non-empirical literature such as case reports, editorials, and expert opinions. Furthermore, studies that exclusively addressed clinical treatments, outcomes, reproductive health physiology and pathology, or pregnancy outcomes were also omitted.

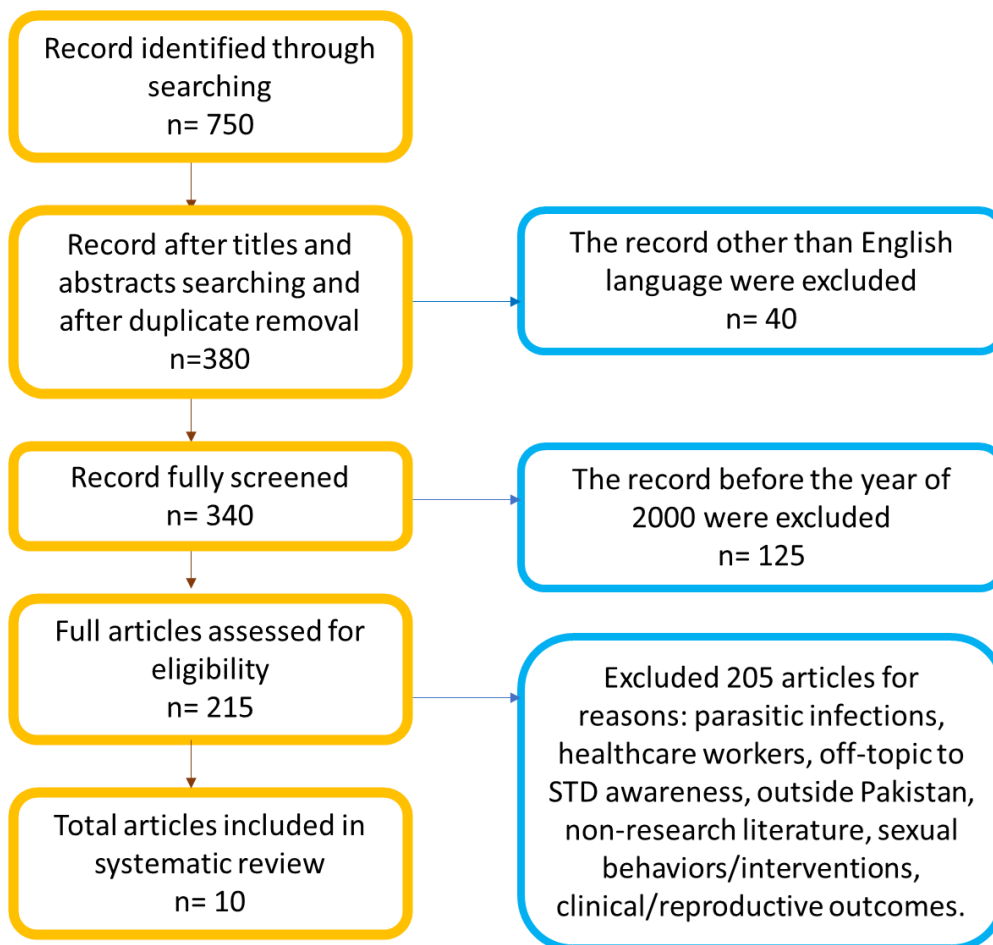
Upon the identification of potentially relevant titles and abstracts, a thorough evaluation was conducted to determine eligibility. Full-text versions of the articles deemed suitable for inclusion were then obtained for a more detailed review. The process of data extraction was meticulously designed to minimize bias, employing a task separation strategy whereby the methods and results sections of each study were abstracted independently and at different intervals.

The analysis of the gathered data was conducted using a narrative synthesis approach, facilitating a qualitative synthesis of the evidence. A predefined set of variables, including the characteristics of the study population, size, geographical location, and study duration, was utilized for data extraction from the method sections of each article. The methodological quality of the included studies was assessed using the Critical Appraisal Skills Programme (CASP), ensuring a rigorous evaluation of the research design and implementation.

In adherence to ethical considerations, this systematic review was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Although the review itself did not involve direct interaction with human subjects, it is acknowledged that the studies included within the review had obtained ethical approval from relevant bodies, ensuring the ethical conduct of research and the protection of participants' rights and well-being.

RESULTS

The PRISMA flow chart depicts the screening and selection process for the systematic review. Initially, 750 records were identified through database searching. After removing duplicates, 380 records remained. Records not in English (40) and those published



before the year 2000 (125) were then excluded, leaving 340 records for full screening. Of these, 215 articles were assessed for eligibility, with 205 articles being excluded for various reasons, including relevance to parasitic infections, being conducted among healthcare workers, deviating from the topic of STD awareness, being outside the scope of Pakistan, consisting of non-research literature, or focusing on sexual behaviors, interventions, or clinical/reproductive outcomes. Ultimately, 10 articles met the inclusion criteria and were included in the systematic review.

Figure 1 PRISMA FLOWCHART

Table 1 Characteristics of the included studies on knowledge and awareness of STDs among men and women of Pakistan

Publication Year	Study Period	Place of study	Age (Years)	Number of study participants	Gender	Study design	Sampling technique	Data collection instrument	Reported outcomes measured	Reference
2002	NA	Sindh	NA "But the study population was adult."	NA	Males and Females	Community-based survey	Purposive	In-depth interviews and	Community knowledge, attitude, and practices	(8)
2007	October 2002	Sindh	15-19	428	Males and Females	Cross-sectional	Randomly selected	focus group discussions (A pretested guideline focusing on reproductive health was used)	regarding STDs	(9)
2011	NA	Karachi	17-21	1,650	Males and Females	Cross-sectional	Multi-stage cluster	Interviews	Knowledge and attitude about STDs	(6)

Publication Year	Study Period	Place of study	Age (Years)	Number of study participants	Gender	Study design	Sampling technique	Data collection instrument	Reported outcomes measured	Reference
2012	January to August 2011	Karachi	18-25	500	Females	Cross-sectional	Purposive	Questionnaire	Evaluating the factors that lead to school or college dropout and the effects on public awareness of STDs and HIV	(10)
2015	During 2009	Faisalabad	15-32	600	Females	Cross-sectional	Multistage cluster	Questionnaire	Awareness of pre-marital STDs	(11)
2017	January 13, 2017, to January 19, 2017	Southern Punjab (Bahawalpur)	NA "But the study population was adult."	50	Males	Cross-sectional	Willing participants	Questionnaire	Knowledge and attitude about STDs	(12)
2017	During April and May.	Lahore	20-25	100	Males and Females	Cross-sectional	Willing participants	Pre-designed custom-made questionnaire	Knowledge and attitude About STDs	(13)
2020	September 4, 2017, to September 4, 2018	Karachi	18-35	413	Males and Females	Cross-sectional	Purposive	Questionnaire	Knowledge and attitude towards STDs	(14)
2021	June 2019 to July 2019	Lahore	Above 15	337	Females	Cross-sectional		Questionnaire	Awareness of STDs	(15)
2022	January to June 2017	Rawalpindi	15-49	150	Females	Cross-sectional	All patients during the set period	Questionnaire	Awareness about STDs	(16)

Table 2. Knowledge and awareness of STDs reported in the included studies

Knowledge about transmission of STDs	Heard about at least one STD	I heard about HIV/AIDS as an STD	Source of awareness about STDs	Methods of prevention of STDs	Reference
The majority of respondents said that they were not aware.	Yes	Yes	Electronic media such as television and radio Health care providers Hakims Quacks Friends	Extra-marital sex Use of disposable syringes Use of new blades for shaving Screening blood before transfusion Use of condom	(8)
Both males and females= 62%	Yes (44%)	69%	Electronic media such as television, radio, magazines, and books (28%)	NA	(9)

Knowledge about transmission of STDs	Heard about at least one STD	I heard about HIV/AIDS as an STD	Source of awareness about STDs	Methods of prevention of STDs	Reference
			Friends (26%) Health care providers such as doctors, lady health visitors (20%) Parents (10%) Elders such as husbands, uncles, aunts, and spiritual leaders (6%) Teachers (4%)		
Males= 16.9% Females= 12.9%	Yes	76.4%	59% of men said, "through health workers' information," 28% said, "through parents," 53% of women said, "through parents," and 29% said, "through electronic media"	NA	(6)
Both males and females= 50%	Yes	99%	NA	STD screening before marriage Safe blood transfusion Use of disposable tattoo needles	(10)
Both males and females= 30.2%	Yes	54.7%	NA	Extra-marital sex Use of non-reusable disposable syringe Blood testing for blood donation Use of new razor for shaving by barber	(11)
Yes	No	NA	NA	Use of condom	(12)
Both males and females= 100%	Yes	58%	Knowledge from school or college (46%) Internet (44%) Books (3%) Movies or television series (3%) Magazine or newspaper (1%) Electronic media such as television, radio (1%) Friends (1%) Health personnel (1%) Parents (1%)	Safe sexual contact Use of condom Creating awareness among people at the individual level, in the family, in the community, at school/colleges Extra-marital sex Safe blood transfusion	(13)
Both males and females= 17%	Yes (34.7%)	72%	Internet and electronic media (44%) Educational institutions (37%) Social contacts (18%)	Use of condom	(14)

Knowledge about transmission of STDs	Heard about at least one STD	I heard about HIV/AIDS as an STD	Source of awareness about STDs	Methods of prevention of STDs	Reference
Both males and females= 72.4%	Yes	74%	Television (42%) Internet (40%) Doctors (21%) Family (16%) Friends (13%) Newspaper (12%)	Abstinence from sex Using a condom Less number of sexual partners Regular Medical checkup Being able to recognize the different signs and symptoms of an infection Availing prompt medical treatment	(15)
Both males and females= 42%	Yes	Yes	NA	Use of condom	(16)

STUDY CHARACTERISTICS

The systematic review encompassed a range of studies conducted across various locations in Pakistan, including Sindh, Karachi, Faisalabad, Southern Punjab (Bahawalpur), Lahore, and Rawalpindi, from 2002 to 2022. These studies varied in their design, predominantly employing cross-sectional methodologies with sample sizes ranging from 50 to 1,650 participants. The age groups targeted were generally adults, with specific studies focusing on narrower age ranges such as 15-19, 17-21, 18-25, 20-25, and 18-35 years. Both genders were represented across these studies, though some focused exclusively on females. Data collection instruments included in-depth interviews, focus group discussions, and questionnaires, with sampling techniques varying from purposive to random selection and multi-stage clustering.

KNOWLEDGE AND AWARENESS OF STDs

The review revealed a diverse range of knowledge and awareness levels regarding STDs among the Pakistani population. In some studies, a significant portion of participants acknowledged being aware of at least one STD, with HIV/AIDS often recognized. However, the majority of respondents in a 2002 study expressed a lack of awareness about the transmission of STDs. Sources of STD awareness varied widely, encompassing electronic media (television and radio), healthcare providers, friends, and educational institutions. Interestingly, a notable percentage of knowledge was attributed to non-traditional sources such as the internet, schools or colleges, and social contacts.

Preventive methods identified across the studies included the use of condoms, extra-marital sex avoidance, safe blood transfusion practices, and STD screening before marriage. Some studies emphasized the role of disposable syringes and new blades for shaving in preventing STD transmission. Moreover, regular medical checkups, recognizing signs and symptoms of infections, and availing prompt medical treatment were suggested as crucial for managing STDs effectively.

DISCUSSION

This study represents a pioneering effort to specifically examine the determinants of awareness regarding sexually transmitted diseases (STDs) in Pakistan, distinguishing itself by focusing on precise awareness factors rather than offering a generalized assessment of knowledge. The findings of this review are instrumental for the formulation and execution of effective preventive strategies, enhancement of awareness, and identification of areas requiring further investigation. In alignment with previous research (17), this study underscores the paramount awareness and knowledge levels concerning HIV/AIDS, arguably a result of the extensive global campaigns initiated in the mid-1980s (18). The correlation between heightened awareness of HIV/AIDS and the reduction of risky sexual behaviors has been established (19), resonating with the observation that both men and women in Pakistan possess a substantial understanding of HIV/AIDS epidemics, its modes of transmission, and preventive measures. This awareness parallels findings from Russian participants, who acknowledged the possibility of healthy individuals contracting HIV/AIDS (20), and surpasses the knowledge levels observed among adolescents in India and the Lao People's Democratic Republic (21, 22).

The review revealed significant variations in STD awareness and knowledge across different cities in Pakistan, with a notable gender disparity in awareness levels. Despite women being more informed about STDs than men, their overall awareness remained suboptimal. This gender difference echoes a study in Afghanistan, which found female university students to possess greater knowledge of HIV/AIDS than their male counterparts (23). The dearth of sexual health information poses a considerable risk, particularly to women engaged in early sexual activities or those married to non-monogamous or pre-infected partners. These findings reinforce the critical need for sex education, especially within educational settings (24).

A contributing factor to the limited knowledge regarding STDs in Pakistan is the low literacy rate coupled with insufficient health budgets and cultural reticence. The prevalence of STDs is exacerbated by these factors, alongside the diseases' ability to be transmitted through blood, sexual contact, and bodily fluids, and the potential for viruses to remain latent, rendering carriers asymptomatic. The risk of transmission to spouses and offspring underscores the importance of preventive measures such as pre-marital blood screening (10). The implementation of health education, population screening, genetic counseling, and the prevention of marriages between carriers can mitigate the risk of STD transmission to future generations.

Electronic media emerged as the predominant source of STD awareness, with a significant portion of the population gaining knowledge about HIV/AIDS through this medium (9). The role of mass media is particularly crucial in contexts where sexual health topics are taboo, especially for women. Adolescents who read newspapers were found to be more knowledgeable than those who did not (9). Despite the broader awareness of HIV/AIDS, likely due to targeted media campaigns, it was observed that women were generally more informed about STDs and HIV/AIDS than men, potentially due to their increased exposure to television within domestic settings (26). Cultural practices that discourage participation in sex education programs contribute to the lower awareness among adolescents and young adults, with school-based education on safe sex practices often considered inappropriate (27).

The use of condoms was identified as a prevalent preventive method against STDs, although regular medical checkups, limiting the number of sexual partners, and the prompt recognition of symptoms were also noted as effective strategies (15). The underreporting of STD rates in Islamic countries, including Pakistan, may contribute to a perceived low risk among the population. However, a higher perceived risk has been linked to more responsible sexual behavior (28).

The insights garnered from this review underscore the imperative for a more open societal approach to discussing STDs and HIV/AIDS. Policy responses should include guidelines to enhance society's knowledge, beliefs, practices, and attitudes, particularly among the youth. Initiatives targeted at medical institutions and educational settings, as well as the establishment of youth clinics, could serve as valuable resources for information and protection against STDs.

This review also highlights the basic level of knowledge about STDs among Pakistani men and women, indicating a gap in understanding and attitudes towards sexual health. The expressed desire for education and information points to the importance of culturally sensitive sexual health education that considers the broader personal, cultural, and religious barriers when designing sex education programs. Yet encounters several methodological limitations and deficits that affect its breadth and depth. The selection criteria limited the scope to studies published in English post-2000, potentially omitting pertinent research in local languages or from earlier periods that could offer a richer historical context or insights into the evolution of STD awareness. Geographically, the emphasis on urban-centric studies may not accurately reflect the perspectives and challenges faced by rural populations, where differences in education levels, healthcare access, and cultural practices might significantly influence STD knowledge. Furthermore, the gender representation within the reviewed studies sometimes leaned more heavily towards one gender, possibly skewing the understanding of awareness across the population. The reliance on cross-sectional study designs limits the ability to draw causal inferences between awareness levels and the impact of interventions over time, while the use of purposive sampling in some instances could introduce selection bias, affecting the generalizability of the findings.

The variety of data collection instruments and methodologies across studies introduces inconsistencies, challenging direct comparisons of outcomes. Not uniformly assessing the quality and rigor of the included studies might impact the reliability and validity of the review's findings. The absence of longitudinal studies restricts insights into temporal changes in awareness and the long-term effects of educational campaigns. Moreover, the complex socio-cultural dynamics influencing STD awareness, such as stigma, religious beliefs, and gender norms, may not be fully accounted for. Reporting bias, where studies with significant findings are more likely to be published, and challenges in ensuring participant confidentiality and obtaining genuine responses in research on sensitive topics like STDs, could affect the accuracy of the reported levels of knowledge and awareness. Future research could benefit from broadening the search criteria to include studies in local languages, incorporating rural perspectives, ensuring gender balance, including longitudinal research, and employing rigorous quality assessments of studies to enhance the systematic review's comprehensiveness and applicability.

CONCLUSION

The systematic review highlights a varied understanding of sexually transmitted diseases (STDs) among the Pakistani population, pointing towards significant gaps in knowledge and awareness, particularly regarding prevention and transmission methods. These findings underscore the urgent need for targeted, culturally sensitive educational programs and interventions that bridge the identified knowledge gaps, address gender disparities, and extend beyond urban populations to include rural areas. Enhancing STD awareness through comprehensive sex education, leveraging electronic media, and promoting gender-inclusive health policies could significantly contribute to reducing the prevalence of STDs in Pakistan. Moreover, integrating STD education into the national health agenda could facilitate a shift towards more responsible sexual behaviors, ultimately improving public health outcomes in the context of STD prevention and control.

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