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# Knowledge and Attitude toward Sexual and Reproductive Health among Adolescents in Punjab

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## Abstract

**Background:** Adolescence is a salient stage of human development that is associated with intensive biological, emotional, and cognitive developments. These developments impact adolescent sexual and reproductive behaviors drastically. Societal values and lack of communication between parents and their children limit the exposure of many adolescents to truthful information about their sexual and reproductive health (SRH). Vulnerability to false information, early sexual activity, high-risk sexual behaviors, sexually transmitted infections (STIs), and unintended pregnancies is rife among these groups of people. Even though the significance of SRH knowledge is well appreciated among the youth of Punjab, there is little information available on the knowledge and attitudes of these groups of people.

**Methods:** A descriptive cross-sectional study was carried out among adolescents in the age group of 14–18 years in Punjab. Responses were obtained from a sample size of 15 participants through a non-probability convenience sampling method. The structured, self-administered questionnaire covered all the domains on SRH: puberty, contraception, prevention of STIs, and basic reproductive physiology. Descriptive statistics have been used to analyze the data on the mean scores, ranges, and categorical distributions. The tabular presentation of results has been done to highlight overall knowledge levels, differences by gender, and gaps across specific SRH domains.

**Results:** The mean score was 64.4, ranging from 45 to 90. Adolescent girls had a higher SRH knowledge than boys with mean scores of 69.8 and 59.7, respectively. Many of the participants showed relatively good understanding of puberty and adolescent changes but had important gaps in knowledge concerning contraception, STI prevention, and basic reproductive physiology. The findings highlight the uneven distribution of SRH knowledge and the need for comprehensive, age-appropriate educational interventions.

**Conclusion:**. Though adolescents in Punjab showed moderate knowledge levels pertaining to SRH, there are still important knowledge gaps, especially with respect to family planning, preventing STIs, and reproductive anatomy. These knowledge gaps reveal that there is a need for professional SRH educational programs catering to adolescents' development and cultural settings. Organized SRH educational programs can help adolescents make informed decisions, decrease risky sexual practices, and improve SRHR outcomes

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**Keywords:** Adolescents; Sexual and Reproductive Health; Knowledge Assessment; Punjab; Cross-sectional Study; Health Education

## Background

Adolescence is a critical period of physical, psychosocial, and socioeconomic development during which knowledge of sexual and reproductive health is important to set the grounds for healthy behavior and long-term well-being. Rapid changes in hormone balance, fluctuating emotions, exploration of identity, and rising interest in one's sexuality mark this age; hence, the receipt of appropriate SRH information becomes crucial for ensuring safety and informed decisions (1). Yet, cultural obstacles, communication gaps, and a lack of proper health education are fundamental contributors to misinformation and unsafe sexual behavior among adolescents, particularly in developing regions. In most communities, discussions about sexuality are taboo, parents are reluctant to have open communications, and schools usually provide incomplete SRH education, thus making the situation more vulnerable to potential harm (2).

There is evidence that those with inadequate knowledge of SRH are more susceptible to unintended pregnancies, STIs, and associated psychosocial problems. Inadequate SRH information is also linked to individual and public health challenges such as low self-esteem, instability of emotions and future SRH. Against the backdrop of comprehensive global health policies and initiatives aimed at adolescent health care and development, knowledge of SRH information is still unbalanced and is often biased towards females in different parts of the world compared to males with similar needs and expectations of responsibility towards social reproductive health (4). Global experiences have revealed the discrepancies in knowledge of SRH information and dimensions contrary to health objectives and continuing disparities between continents and different socio-cultures and accessibility of health care. In different parts of sub-Saharan and other low-and middle-income nations, especially, knowledge of SRH is often expected by those in adolescence through peers and other informal and often unverified channels of information raising fears of inaccurate knowledge (5). There are considerable knowledge gaps of STIs and reproduction in sub-Saharan and different parts of the world of effective and fundamental SRH information required by those in adolescence that promotes health and saves lives (6).

Some studies from the Indian scenario have documented moderate levels of awareness and a large number of misconceptions about SRH in adolescents, thereby revealing a compelling need for well-structured and culturally appropriate educational intervention. Gender, parental constraint, stigma, and a lack of health education in school environments further exacerbate these deficits in knowledge (7). Additionally, inappropriate and ineffective SRH intervention programs further cloud the learning outcomes in adolescents when these programs are inefficiently developed or conducted without taking into account the existing facts of culture, language, and existing communal perceptions (8). Global health organizations have recommended the implementation of standardized youth-friendly SRH services so that there is accuracy of information and, thereby, the empowerment of adolescents in well-confidential, non-judgmental environments (9).

Recent literature still underscores the relevance of improving SRH resource tools and filling

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content gaps to serve young generations better, especially in environments with underperforming education and health structures (10). There are still gaps in recent research related to knowledge acquisition by adolescents, differences in knowledge levels of males and females, and the efficacies of current initiatives to make favorable impacts on behavior and outcomes (11). Comprehensive and appropriate SRH initiatives are necessary and vital for making favorable impacts on adolescent health outcomes and achieving informed decision-making to advance towards healthier adulthood and accumulate favorable public health outcomes (12).

## Methodology

The current study assesses how knowledgeable and positive adolescents were rated as having when responding to a sample of questions about their sexual health. Some have suggested that these types of health-related questionnaires are best used and understood at a specific point in time (as indicated by the year of this research (3)). Previous studies have indicated that the level of knowledge adolescents have about sexual health varies depending upon the culture in which they reside (7).

Fifteen participants were recruited through convenience sampling techniques that did not involve randomized selection. Adolescents are often hard to recruit for research due to the cultural sensitivities surrounding the topic of sexual health and, therefore, convenience sampling was used (2). Prior to the conduct of this research, both parents and adolescents signed informed consent forms to permit their participation and this was done in accordance with recognized ethical research standards for research involving adolescents (9).

Structured, self-administered questionnaires that assessed knowledge regarding puberty, contraceptive use, the structure and function of the male/female genitalia, methods of preventing sexually transmitted infections (STIs), and related historical and cultural issues were developed and utilized (5). The questionnaire was administered to participants without identifying information in the interest of maximizing privacy, and participants were provided with clarification of what certain terms meant, if requested, so that answers were not based on coercion or misinformation (8).

Data collected through sexual health knowledge testing were analyzed descriptively with mean scores and percentage distributions, as well as gender analysis, to identify differences or similarities in various areas of sexual health knowledge across the participant group (6). Eastmor was compliant with established ethical guidelines with respect to protecting anonymity, and voluntary participation throughout the study.

## Ethical Considerations

The research conducted in this study was conducted in accordance with established ethical standards to provide protection, dignity, and well-being for all research participants. Prior to beginning the research, an Ethical Clearance form was approved by the Desh Bhagat University IRB (IRB/DBU/2024/017). The study involved voluntary participation from all participants. Prior to beginning the research, all participants (including adolescents and guardians) were provided with information about the purpose, methods and potential benefits and minimal risks of participation in the study. All participants were promised confidentiality and anonymity, and no identifying information was collected from

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participants; therefore, all responses were used for academic/research purposes only. Participants were informed of their right to withdraw at any time from participation without any negative consequences. The study followed the ethical guidelines already in place for conducting research on human participants and fully respected and protected the participants' right to privacy during all stages of the research.

**Results**

**Table 1: Socio-Demographic Characteristics of Participants (n = 15)**

| Variable | Category | Frequency (n) | Percentage (%) |
|---|---|---|---|
| **Age (years)** | 14–15 | 5 | 33.3 |
| | 16–17 | 6 | 40.0 |
| | 18 | 4 | 26.7 |
| **Gender** | Male | 7 | 46.7 |
| | Female | 8 | 53.3 |

**Age Distribution**

Most of the respondents surveyed in this study were between 16 and 17 years old (40.0%). More youths aged 14-15 (33.3%) than 18 years old (26.7%) participated in this research. Thus, the findings from this survey mainly represent the views of adolescents between ages 16 and 17, and there was a small number of late adolescents participating in the research. All these data indicate that the coverage of the sample was reasonably representative of the whole adolescents across all ages. This may suggest that the views of younger adolescents would be expected to reflect poorer levels of knowledge and attitude than if the sample were more evenly distributed between younger, middle-aged and late-age adolescents, due to the general increase in SRH knowledge, awareness, maturity and experience with increased age.

**Gender Distribution**

The gender ratio is slightly skewed toward females, with eight females making up 53.3% of the total number of respondents (compared to 7 males making up 46.7% of respondents). This ratio creates a fair basis for males and females to be compared because it does not reflect a heavy bias toward males or females. The marginally higher participation by females may have been due to greater interest, availability or accessibility of adolescent girls to be involved in research on SRH, which has been shown in previous studies.

**Table 2: Summary of SRH Knowledge Scores**

| Knowledge Score Indicator | Value |
|---|---|
| **Mean score** | 64.4 |
| **Minimum score** | 45 |
| **Maximum score** | 90 |
| **Knowledge level** | Moderate |

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The average score for SRH knowledge among adolescents was 64.4, which means there is moderate knowledge level. The average score indicates a general understanding of SRH concepts by some, but also suggests that many adolescents have not been comprehensively educated regarding SRH topics and still have significant gaps in knowledge.

The lowest score (45) shows that some adolescents were not very knowledgeable on the topic of SRH which could reflect inequities in accessing SRH resources and in exposure to different types of learning methods. The highest score (90) was achieved by a small number of participants who appear to possess a strong understanding of the issues related to SRH, possibly because of previous educational opportunities, access to health education programs, or personal interest.

The large difference between the highest and lowest scores indicates a large range of knowledge among the group and emphasizes the need for further development of structured and systematic SRH educational programs that include opportunities for diverse learning experiences and target access to SRH resources for all adolescents. As such, although adolescents do have some information about SRH topics, their level of knowledge does not yet guarantee that they will practice safe sexual behavior without additional education and reinforcement of their knowledge.

**Table 3: Gender-Based Comparison of Mean SRH Knowledge Scores**

| Gender | Number of Participants (n) | Mean Knowledge Score |
|---|---|---|
| **Male** | 7 | 59.7 |
| **Female** | 8 | 69.8 |

It is well established that there is a gender gap in terms of the sexual and reproductive health knowledge of the respondents. The average sexual and reproductive health knowledge score for female respondents (69.8) was significantly greater than the average sexual and reproductive health knowledge score for male respondents (59.7), indicating that female respondents appear to have greater knowledge and understanding of sexual and reproductive health issues than male respondents.

One possible reason for the observed difference between males and females is the fact that many sexual and reproductive health education programs are developed specifically to target girls, who are often considered more at risk for certain sexual and reproductive health related issues. Furthermore, female respondents likely receive more detailed sexual and reproductive health related information from educational institutions and/or health care service providers or from other individuals (i.e., family, etc.) due to their increased perceived vulnerability, compared to male respondents. It is also possible that female respondents are more likely to pay more attention to the sexual and reproductive health information they receive and are therefore more engaged in the learning process and more motivated to learn about the topic, given their increased concern about

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becoming pregnant or what constitutes acceptable sexual behavior in society.

Conversely, the lower male knowledge score compared to females could indicate the general perception and behavior of someone within our culture. Structured SRH education is not provided for girls as often as it is for boys. Boys may rely more on friends and informal sources for information regarding sexuality due to the lack of structure. Many times, these sources provide unreliable information. Therefore, it is essential to create gender-balanced SRH education strategies in order for boys to also have access to comprehensive guidance and support in their understanding of sexual activity. Understanding sexual activity is important for boys to demonstrate responsible sexual behavior, reduce the risk of STI's and contribute to improving reproductive health outcomes.

**Table 4: Knowledge Levels Across Key SRH Domains**

| SRH Domain | Knowledge Level | Observation |
|---|---|---|
| **Puberty and adolescent changes** | Moderate to good | Majority answered correctly |
| **Contraception** | Low | Limited awareness of methods and use |
| **STI prevention and transmission** | Low | Poor understanding observed |
| **Basic reproductive physiology** | Moderate | Partial understanding |

The information that is present in Table 4 demonstrates that knowledge about Sexual and Reproductive Health (SRH) amongst adolescents varies depending on the SRH topic within a defined area of SRH. Knowledge about puberty and Developmental Changes During Adolescence showed a significant level of understanding (moderate to high) with a large number of respondents providing correct answers. Based on the level of knowledge shown on this SRH Domain, there appears to be good overall knowledge about Developmental Changes (eg menstruation, development of Secondary Sexual Characteristics & Feelings, etc.) that are typically noted and discussed (and sometimes even experienced by) adolescents. Other sources of information could include personal experiences, school biology classes, and but not necessarily limited to, occasional conversations with parents or peers.

Contraceptive knowledge was significantly lower than knowledge about puberty and adolescent Development Changes. This appears to indicate that there are fewer ways to acquire basic knowledge about either the types of Contraceptive Methods that are available, how to use them correctly, and the effectiveness of Contraceptive Methods on Prevention of Unplanned Pregnancies. The reasons for these gaps may include the effect of cultural differences regarding open dialogue, reluctance of sexual educators or parents to provide open access to Contraceptive Education Resources, and the lack of Comprehensive Sex Education programs..

The understanding of STI (Sexually Transmitted Infections) transmission and prevention was also limited as exhibited by the low comprehension level of participants. Low comprehension levels indicate that participants

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have insufficient exposure to valid sources of STI risk factors and modes of transmission, protection (e.g., using condoms), and the health risks associated with untreated STIs. These gaps in STI knowledge create an increased risk factor for adolescents engaging in high risk sexual behaviour.

In terms of adolescents' knowledge of reproductive physiology, on average knowledge was rated as moderate, indicating that adolescents possess some degree of knowledge regarding some female/male reproductive organs and functions; however, this level of knowledge was incomplete and sporadic. The partial understanding of developmental reproductive physiology may affect adolescents' ability to understand SRH (Sexual & Reproductive Health) concepts at a higher level.

The overall conclusion drawn from the study indicates that the majority of adolescents had some degree of knowledge regarding physical development, but did not demonstrate an adequate level of knowledge in key functioning areas of SRH; specifically, in the case of contraceptive use and STI prevention. Therefore, there is a need to create comprehensive age appropriate SRH education programmes that provide adolescents with clear and practical information about SRH in ways that are culturally relevant.

## Discussion

Moderate knowledge of sexual and reproductive health among young people, as established in this research study, confirms the international pattern of limited awareness and serious cessations in knowledge (5). As a result, many young individuals are able to receive some sexual and reproductive health information through the school system, friends, and media; however, they have limited skills and capabilities in interpreting and applying this information. The inconsistent distribution of knowledge within the population, also mirrors the international situation, as young individuals are typically aware of basic biological and developmental concepts, but lack a comprehensive understanding of the various types of preventive and health-promoting measures that they may implement concerning sexual and reproductive health (5).

The discrepancy in the average knowledge scores of females when compared to males could include factors such as that many existing gender-targeted educational campaigns and other cultural settings may expose young women to more sexual and reproductive health-related information than their male counterparts. In particular, young women may receive more attention than young men regarding their perceived vulnerability to reproductive health-related dangers and their active participation in menstruation, pregnancy, and childbirth; therefore, it is possible that parents, schools, and health care systems may be more likely to provide these young women with targeted sexual and reproductive health information (4). These results also indicate that there exists a consistent gender-based pattern when comparing multiple contexts, in various studies conducted in countries such as India and several other countries in the same region, which report that young women maintain superior sexual and reproductive health knowledge when compared to young men, suggesting a lack of sufficient attention and investment in young men's sexual and reproductive health care despite their similar responsibilities when it comes to making reproductive and sexual health decisions and outcomes (7).

While many adolescents are somewhat knowledgeable about the changes associated

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with puberty, there remain many gaps in their understanding of contraception, STI prevention and reproductive biology. This study corroborates global research findings that suggest that adolescents do not have adequate knowledge of the available modern contraceptive methods or how to prevent STIs (6). Many adolescents across the world still rely on myths, peer advice or other unreliable sources of information for guidance in making sexual health-related decisions; this leads to a lack of appropriate decision-making (6). Inadequate structured learning opportunities as well as cultural reluctance to engage in open discussions about sexual health may greatly contribute to the knowledge gaps identified in this research, given that SRH is regarded as a taboo topic in many cultures (2).

Lack of adequate SRH knowledge remains a source of major public health concerns, such as unhealthy sexual practices, teen pregnancies, and susceptibility to STIs, thereby establishing the imperative for evidence-based, culture-specific SRH educational intervention programs. The need for appropriate SRH information to empower adolescents to make well-informed and prudent decisions remains paramount (3). Various studies have established that inadequately designed SRH interventions have been ineffective in realizing their intended behavioral outcomes, thereby establishing the need for culturally relevant educational intervention programs that are congruent with cultural, social, and ontological aspects of adolescents (8). Various international community health guidelines remain exceptional in promoting the need for adolescent-friendly SRH interventions, comprehensive educational programs in schools, and continued community interaction to ensure better retention of SRH knowledge and behavior change (9).

Additionally, current literature highlights the imperative of improving adolescent SRH toolboxes, relevance, and filling existing gaps in research to ensure program efficiency. Improving the efficiency of SRH also calls for assessments of existing resources in_line_with the ever-changing needs of adolescents (10). Closing gaps in a way that is sensitive to gender, cultures, and inclusivity will play a significant role in improving adolescent SRH outcomes and helping them achieve a healthy life (12). Finally, a multisectoral response, including schools, families, health providers, policymakers, and communities, will play a critical part in helping adolescents achieve comprehensive and accurate SRH information, thus improving lifelong outcomes for them.

## Conclusion

This study indicates that there is a moderate amount of sexual and reproductive health (SRH) knowledge among adolescents living in Punjab, but there are still areas where improvements can be made, especially concerning knowledge regarding contraceptive methods, prevention of STIs and reproductive physiology. There is evidence that adolescents may have limited access to making safe and informed decisions regarding reproductive health, even though they are aware of many basic concepts in this field. Additionally, the gender differences identified in adolescents' levels of SRH knowledge underline the need to develop educational approaches that respond to gender issues, so that boys can be provided with the same level of focus on and opportunity for targeted SRH education as girls, who historically have had more formalised access to SRH resources(7).

These results illustrate the need for comprehensive SRH education programs structured according to international adolescent

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health guidelines and ideally emphasizing both the accuracy and access of information (9). It is important to improve SRH education by addressing it at a school level as well as by working with communities and health care organizations at a policy level to empower adolescents with the knowledge, skills, and attitudes necessary to protect SRH.

In fact, youth-friendly and accessible health facilities that provide confidentiality and nonjudgmental and inclusive services can greatly benefit young individuals by helping them seek advice and make well-informed decisions. Such collective action may provide an effective means to limit risky behavior and prevent negative reproductive health outcomes that may work to enhance the well-being and overall public health of young individuals in the future..

## Take-Home Message

Knowledge level regarding sexual and reproductive health among adolescents in Punjab is generally considered to be moderate; however, there is a considerable lack of knowledge in three primary areas: contraception; sexually transmitted infections (STIs) prevention; and reproductive physiology. The presence of these knowledge gaps, coupled with current data showing gender differences in adolescents' knowledge levels, creates an urgent need for comprehensive and gender-responsive SRH education programs that are culturally relevant and give adolescents access to accurate information so that they can make informed, healthy decisions.

## Author's Contribution

The study was designed by Mr. Hanson Chosen Jlateh who also collected the data and prepared the manuscript. Doctor Stephen Monday conducted the data analysis, interpreted the data, helped draft and revise the manuscript. Both authors read and approved the manuscript before publication.

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## Conflict of interest (COI) declaration

The authors declare that they have disclosed their COIs in relation to this study. All COI disclosures were made prior to submission of this manuscript for review by the journal and included in correspondence with the journal. There are no current or past financial conflicts of interest associated with the study. The research was conducted solely as an independent investigation. The author(s) and/or their respective institutions had no role in the design, collection, analysis and interpretation of data, or manuscript preparation. The final manuscript was reviewed and approved by all co-authors.

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