Ad-din Medical Journal
January 2025, 3(1):18-24

Original article

Reproductive Health Knowledge among Male Adolescents in Rural Bangladesh

Received: 30.10.2024 Accepted: 08-10-2024

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Abstract

Background: The foundation of human health is created at adolescent period. Reproductive health plays an important role here. But reproductive health knowledge and its service aren't sufficient all over the world to adolescents' people. There has a shortness of data about reproductive health condition and its knowledge and service. Therefore, adolescents should know about sexual and reproductive health and its available services to protect themselves. There is still need of doing research to find the current situation. ***Objective:*** The objectives of this study were to assess reproductive health knowledge and its available services among male adolescents in rural area of Bangladesh. ***Methodology:*** This study was cross sectional study. The target population was high school going male adolescents. The total period of this study was from January to December, 2018. Study place was selected by purposively and simple random sampling technique was used to select the male adolescents. Sample size was 214. Semi-structured questionnaires were used to collect data. The thesis protocol was approved by IRB, BSMMU. Frequency, percentage, means, chi-square tests were done by SPSS version 21. ***Results:*** The majority age group of the respondents was 11-13 years was 73.2% rest of age 14-15 years was26.8%. To calculate knowledge score of reproductive health of the respondents, here divided 3 categories after computing total questions related to reproductive health then made 3 approximate equal divisions. There were 19 of reproductive related questions. Here, category-1 was 1-6, category-2 was 7-12 and 13-19 was in category-3. We found that, 62.73% had category-1 knowledge, 24.09% had category-2 knowledge and 13.18% had category-3 knowledge about reproductive health. ***Conclusion:*** In general, it was found that reproductive health knowledge amongst rural adolescents in the study area remained low. Providing knowledge to adolescents regarding reproductive health and its services is essential.

Keywords: Reproductive health knowledge, Male Adolescents

How to cite this article: Shuvo BH, Khan NM, Fariha RSH, Rahman MM, Ghosh M. Reproductive Health Knowledge among Male Adolescents in Rural Bangladesh. Ad-din Med J. 2025 Jan;3(1):18-24

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Introduction

The foundation of human health is significantly established during adolescence, a critical developmental period spanning from ages 10 to 19. Adolescents constitute approximately 20% of the global population.[1] This substantial demographic segment plays a crucial role in population dynamics, contributing to increased dependency ratios and influencing public health outcomes. Adolescence is marked by profound physiological, psychological, and social changes that elevate the risk of sexual and reproductive health (SRH) issues.[2]

Recent concerns about adolescent sexual and reproductive health (ASRH) have intensified due to rising rates of sexual activity, early pregnancies, and sexually transmitted infections (STIs), including human immunodeficiency virus (HIV). The accessibility and utilization of reproductive health services are essential for mitigating these risks and supporting adolescents in navigating their developmental challenges.[3] This demographics' health is directly linked to Bangladesh's health objectives, particularly in achieving Sustainable Development Goals (SDGs). Relevant goals include SDG 3 (ensuring healthy lives and promoting well-being for all at all ages), SDG 4 (ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all), SDG 5 (achieving gender equality and empowering all women and girls), and SDG 8 (promoting sustained, inclusive, and sustainable economic growth and productive employment) (Ministry of Health and Family Welfare.[4]

Families and educational institutions are pivotal in providing adolescents with comprehensive reproductive health education. Open communication, where parents act more as supportive mentors rather than authoritarian figures, can significantly enhance adolescents' understanding of sexual and reproductive health. Schools also play a critical role in delivering accurate information and fostering a supportive learning environment.[5]

Despite the importance of reproductive health, it remains a sensitive topic in many cultures, including Bangladesh, where cultural taboos often inhibit open discussions. Consequently, many adolescents lack adequate knowledge about reproductive health, leading to ongoing issues in their development and well-being .[5-6] The fragility of the adolescent reproductive health system necessitates awareness and proactive measures to protect future fertility and prevent sexually transmitted infections, which can have long-term effects on reproductive health (American Sexual Health Association.[6-7]

Sexual and reproductive ill-health accounts for a significant portion of the global disease burden, with 20% for women and 14% for men (World Health Organization [WHO], 2008).[8] Studies indicate a widespread lack of accurate reproductive health knowledge, underscoring the need for comprehensive awareness programs. Adolescents' limited capacity to grasp complex health concepts and the consequences of their behaviors heightens their vulnerability to sexual exploitation and risky behaviors.

The burden of disease during adolescence is substantial, with nearly 35% of global disease burdens originating in this age group. Of the 1.2 billion adolescents worldwide, approximately 90% reside in developing countries.[9] Although ASRH issues have gained national attention due to the high burden of HIV/AIDS and other STIs, as well as early childbearing, there remains a gap in translating this concern into effective action. Adolescent-friendly reproductive health services (AFRHS) are a promising strategy to address these needs, yet there remains a lack of adequate research and service provision tailored to this age group.[10]

Materials and methods:

A high school-based cross-sectional study was conducted to assess the knowledge of reproductive health and the availability of related services among male adolescents at Baghutiya Omor Ali High School in Daulatpur Thana, Manikganj district. The target population comprised male high school students from the selected area. The study was carried out over a period from January to December 2018. The study location was selected using a purposive sampling method. A simple random sampling technique was employed to select participants from Baghutiya Omor Ali High School. The sample size was calculated using the WHO-recommended formula for fixed prevalence: $n = Z^2 * P(1-P)/d^2$, resulting in a sample size of 214. Data were collected using pre-tested, semi-structured questionnaires. Pretesting was conducted at Oxford High. The statistical software package SPSS version 21.0 were used for statistical analysis and p value will settled at 0.05 level. Socio-demographic characteristics were analyzed by using frequency distribution, percentage. It also presented as mean and standard deviation where applicable. Reproductive health knowledge, barrier method (condom) knowledge and STD, HIV/AIDS knowledge also presented by frequency distribution, appropriate graphs and table. Regarding reproductive health service utilization were analyzed by frequency distribution, percentage. Knowledge score was calculated by computing related variable and then made 3 categorization with approximate 3 equal distributions (category-1, category-2 and category-3) and presented by pie chart.

Result:

Table 1 shows the reproductive health knowledge of the respondents. Here maximum respondents thought, increase body structure 82 (37.3%) was the physical changes in male at adolescents age.

Table 1: Reproductive health knowledge of the respondents

Variables		Frequency (n =220)	Percent (%)
Knowledge on physical changes in male at adolescents age (multiple response)	Increase body structure	82	37.3
	Increase size of genitalia	65	29.5
	Increase growth of scrotum	49	22.3
	Pubic hair appearance	50	22.7
	Facial and armpit hair appearance	47	21.7
	Changes of voice	46	20.9
	Wet dream	36	16.4
	Don't know	116	52.7
Knowledge on physical changes in male at adolescents age (multiple response)	Increase body structure	38	17.3
	Increase size of genitalia	33	15
	Increase growth of breast	35	15.9
	Pubic hair appearance	29	13.2
	Armpit hair appearance	26	11.8
	Changes of voice	25	11.4
	Menstruation	22	10
	Don't know	157	71.4

Table 2 shows, (28.6%) respondents thought that menstruation is natural phenomenon on the other hand only 57(25.9%) thought that wet dream is natural phenomenon. In mental changes idea for male, attract to opposite sex was 56(25.6%). 86(39.1%) of respondents had no idea about ill health condition of masturbation.

Table 2: Reproductive health knowledge of the respondents

Variables		Frequency (n =220)	Percent (%)
Knowledge on wet dream	Natural phenomenon	57	25.9
	One kinds of diseases	66	30
	Result of curse	3	1.4
	Don't know	105	47.7
Knowledge on menstruation	Natural phenomenon	63	28.6
	One kinds of diseases	50	22.7
	Don't know	120	54.5
Knowledge on mental changes in male (multiple response)	Attraction to opposite sex	86	39.1
	Increase curiosity	33	15
	Increase excitement	29	13.2
	Don't know	101	45.9
Knowledge on mental changes in female (multiple response)	Attraction to opposite sex	56	25.5
	Increase shyness	86	39.1
	Others	19	13.2
	Don't know	94	45.9
Thinking of masturbation is harmful to health	Yes	82	37.3
	No	52	23.6
	Don't know	86	39.1

Table 3 shows that, maximum sources of the reproductive health knowledge to the respondents were teacher 113(61.4%) then mother 105(47.7%) and friend 88(40%). Here maximum respondents didn't attend any classes 72(32.7%) related to reproductive health.

Table 3: Sources of reproductive health knowledge to the respondents

Variables		Frequency (n =220)	Percent (%)
Sources of knowledge (multiple response)	Teacher	113	51.4
	Mother	105	47.7
	Father	53	24.1
	Brother	46	20.9
	Sister	29	13.2
	Other family member	29	13.2
	Friend	88	40
	Doctor	56	25.7
	Book	23	10.5
	Cinema/Video	10	4.5
Attending any class related to reproductive health	Yes	72	32.7
	No	148	67.3

To find out knowledge score of reproductive health of the respondents, we have computed variables of related questions to reproductive health then made 3 categories with approximate equal distribution. There were 19 reproductive health related questions. Here, category-1 was 1-6, category-2 was 7-12 and 13-19 was in category-3.

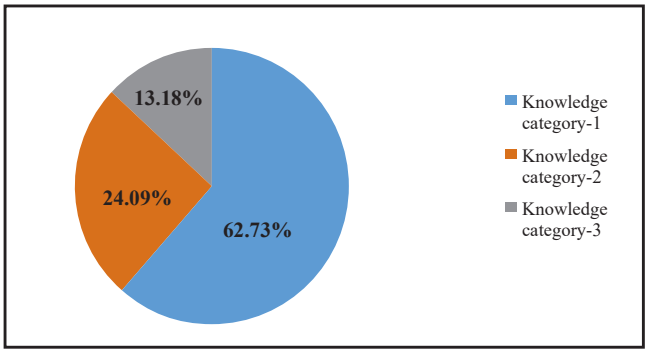

Figure 1: Respondents Knowledge score on adolescent reproductive health

Here, we got 140 (62.73%) had category-1 knowledge, 51(24.09%) had category-2 knowledge and 29 (13.18%) had category-3 knowledge about reproductive health.

Table 4 shows that, there was no association between knowledge score and age of the respondents.

Table 4: Association between knowledge score and age of the respondents

Age group of the respondents	knowledge score			Total	p value
	Category-1 0-6	Category-1 7-13	Category-1 14-19		
11-13	102	40	19	161	0.939
14-15	36	16	7	59	
Total	138	56	26	220	

*P <0.05

Table 5: Knowledge on barrier method (condom) of the respondents

Variables		Frequency (n =220)	Percent (%)
Thinking of effectiveness of condom to prevent pregnancy	Yes	83	37.7
	No	31	14.1
	Don't know	106	48.2
Usable of condom more than one time	Yes	30	13.6
	No	66	30
	Don't know	124	56.4
Thinking of effectiveness of condom to prevent STD/AIDS	Yes	77	35
	No	32	14.5
	Don't know	111	50.5
Decrease pleasure in sexual intercourse	Yes	72	32.7
	No	28	12.7
	Don't know	120	54.6

This table 5 shows the knowledge on barrier method (condom) of the respondents. 117(53.2%) of the respondents have seen of condoms. 83(37.7%) thought condom can prevent pregnancy. Majority of respondents 124(56.4%) don't know that condom can use for only one time. And majority of respondents don't have any idea of decrease pleasure of condoms during sexual intercourse.

To find out knowledge score of barrier method (condom), we have done 3 categories, category-1, category-2 and category-3. This category is done by computing whole variables related to barrier method related questions then made 3 categories with approximate 3 equal distributions. There were 12 of condom related questions. Here, score 0-4 is categorized as category-1, 5-8 as category-2 and 9-12 as category-3.

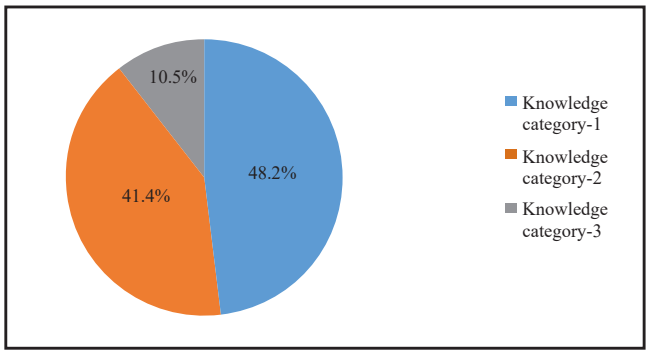

Figure 2: Respondents knowledge score on barrier methods (condom)

Here, finding is that, 106(48.2%) of respondent have category-1 knowledge on barrier method, 91(41.4%) have category-2 and 23(10.5%) have category-3 knowledge.

Discussion:

The study conducted at Baghutiya Omor Ali High School in Daulatpur Thana, Manikganj district provides a comprehensive analysis of male adolescents' knowledge of reproductive health and the availability of related services. This discussion delves into the findings, comparing them with existing literature and exploring the implications for future reproductive health education interventions.

The data indicates that a substantial portion of respondents had limited knowledge about the physical and mental changes that occur during adolescence. For instance, while 37.3% identified an increase in body structure as a change in males during adolescence, only 20.9% were aware of voice changes, and even fewer knew about wet dreams, with 52.7% admitting to having no knowledge of these changes. The awareness of female physical changes was even lower, with only 10% recognizing menstruation as a natural process, and 71.4% of respondents reporting no knowledge of female changes during adolescence.

These findings highlight a critical gap in adolescent reproductive health education, consistent with the literature that notes adolescents often lack accurate information about reproductive development. Studies such as those by Bilal, Patel, and Kulkarni (2015) emphasize that the adolescent population frequently holds misconceptions about basic biological processes due to insufficient education and cultural taboos surrounding discussions of reproductive health.[2]

One of the most concerning aspects of the study is the limited understanding of reproductive health issues among the respondents. Less than half (25.9%) of the participants correctly identified wet dreams as a natural phenomenon, while a significant portion (47.7%) didn't know about it, with 30% even believing it to be a disease. Similarly, only 28.6% recognized menstruation as natural, with over half (54.5%) admitting to a lack of knowledge. These figures suggest that despite the substantial focus on sexual and reproductive health in policy discussions, there is a lack of sufficient, practical education for adolescents in Bangladesh. This mirrors the findings of Jones et al. (2012), which highlight a global trend of insufficient sexual education among adolescents, particularly in developing countries.[9]

The research also identifies significant barriers to accessing sexual and reproductive health knowledge. Teachers were reported as the most common source of information (51.4%), followed by mothers (47.7%) and friends (40%). This dependence on teachers and family members for information indicates that many adolescents lack access to more formal or specialized resources such as healthcare professionals or educational programs. In fact, 67.3% of respondents reported that they had never attended a class related to reproductive health, reflecting a systemic failure in providing comprehensive sexual education in schools.

The limited participation in reproductive health classes underscores the need for structured educational programs. Literature emphasizes the crucial role of educational institutions in disseminating reproductive health information, and how failure to do so often results in misconceptions and risky behaviors among adolescents.

Regarding knowledge of condoms and their role in preventing sexually transmitted infections (STIs) and pregnancy, the study reveals another area of concern. Less than half (37.7%) of respondents were aware that condoms can prevent pregnancy, and only 35% knew that condoms can prevent STDs such as HIV/AIDS. Even more troubling is that 56.4% of respondents did not know that condoms are single-use only. Such findings point to a substantial knowledge gap about condom use, which is consistent with existing research that has found similar deficits in other adolescent populations, especially in rural areas.

This lack of knowledge regarding contraception is particularly alarming, as it leaves adolescents vulnerable to both unintended pregnancies and sexually transmitted infections. As noted in the study, a majority of respondents did not fully understand the protective benefits of condoms, a key issue in preventing the spread of HIV and other STIs. This gap in knowledge suggests that adolescent reproductive health programs need to prioritize contraceptive education

and ensure adolescents understand both the correct usage and efficacy of barrier methods like condoms.

Interestingly, the analysis shows no significant association between the respondents' age and their reproductive health knowledge, as demonstrated by a p-value of 0.939. This lack of correlation suggests that reproductive health knowledge is not necessarily improved by age alone and reinforces the idea that formal education and parental guidance are critical in shaping adolescents' understanding of these topics. Without structured educational interventions, adolescents are likely to remain ill-informed, regardless of age.

The findings from this study align with the broader concerns outlined in the literature regarding adolescent reproductive health, particularly in developing countries like Bangladesh. Adolescents represent a significant portion of the global population and play a crucial role in future public health outcomes. However, as this study illustrates, many adolescents lack the basic knowledge necessary to navigate the challenges of sexual and reproductive health, increasing their vulnerability to risky behaviors, STIs, and unintended pregnancies.

To address these gaps, it is essential to enhance adolescent reproductive health programs, particularly in school settings, where students can receive structured, accurate, and comprehensive information. There is also a need for increased parental involvement, where open communication about reproductive health is encouraged, helping to dispel taboos and misunderstandings. Finally, efforts should focus on ensuring that adolescents have access to youth-friendly health services, enabling them to make informed choices about their sexual and reproductive health.

Conclusion:

The study underscores the critical need for improved reproductive health education among adolescents in Bangladesh. The significant gaps in knowledge, particularly regarding condom use and understanding of basic physiological changes, reflect broader global challenges in adolescent health education. Addressing these gaps requires a multifaceted approach involving schools, families, and healthcare providers to ensure that adolescents are better equipped to manage their sexual and reproductive health responsibly.

Limitations of the Study

While this study provides valuable insights into the reproductive health knowledge of male adolescents in rural Bangladesh, there are several limitations to consider:

1. **Limited Generalizability:** The study was conducted in a single high school in a rural area, which may not be representative of the broader adolescent population in Bangladesh. The findings may differ in urban settings or other regions of the country with different socioeconomic and cultural contexts.
2. **Gender Focus:** This study focused solely on male adolescents, which limits the understanding of reproductive health knowledge and challenges faced by female adolescents. A comparative analysis including both genders would provide a more comprehensive understanding of adolescent reproductive health in the area.
3. **Self-Reported Data:** The study relied on self-reported data, which may be subject to biases such as social desirability bias, where respondents may have provided answers they believed were more socially acceptable rather than truthful responses.
4. **Cross-Sectional Design:** The cross-sectional design of the study captures a snapshot in time, making it difficult to determine changes in knowledge or behavior over time. A longitudinal study would provide more insights into how adolescents' knowledge of reproductive health evolves.
5. **Limited Scope of Questions:** While the study addresses several key aspects of reproductive health, the scope of questions may not cover all relevant areas, such as the impact of media or social influences on adolescent behavior, emotional health, and decision-making regarding sexual health.
6. **Lack of Qualitative Insights:** The study used quantitative methods, which may not fully capture the complexity of adolescents' understanding of reproductive health. Qualitative data, such as interviews or focus groups, could provide deeper insights into the reasons behind knowledge gaps and misconceptions.
7. **Potential Recall Bias:** Since the data were collected through questionnaires, there may be issues related to recall bias, where participants might not accurately remember or report past experiences or knowledge related to reproductive health.

These limitations should be considered when interpreting the results and applying them to broader adolescent health initiatives.

Acknowledgment:

Special appreciations are extended to Md. Hasan, lecturer of DPHI for his guideline and valuable knowledge and advice about statistics and my questionnaire.I am grateful to Institutional Review Board (IRB), BSMMU for their approval to conduct my study. I am also grateful to Md. Abdul Matin, Headmaster of Oxford Academy, Shibalaya for aiding me to do pre testing at his institution and special thanks to Md. Rafiqul Islam, Headmaster of Baghutiya Omor Ali High School for his tremendous support and permission to do my research work in his institution. My hearty gratitude goes to the students who voluntarily participates in my study and provides their responses willingly in my questionnaire.

Conflict of interest:

The authors declare that no conflict of interest exists.

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