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Are the students aware of the term 'Reproductive Health'? A Comparative analysis of knowledge profile among school-going students of adolescent age group

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ABSTRACT

Reproductive health is a critical and multifaceted aspect of public health concerning their reproductive system and process. In the the period between 10 and 19 years of age, adolescents face a rapid physical, psychological, reproductive, and behavioural transformation.

Aim: To assess the existing knowledge level of the school going adolescents on reproductive health, and to determine the association between the knowledge score with selected socio-demographic variables.

Methodology: A cross-sectional, descriptive study was conducted among 149 students from selected secondary schools in Howrah and Kolkata, West Bengal. A non-probability convenience sampling technique was used to collect the data from 73 boys and 76 girls. Descriptive and inferential statistics, including chi-square tests and an independent t-test, were used for analysis.

Result: The study revealed that boys had a significantly higher mean knowledge score (22) compared to girls (19.4), with an independent t-test result of $t = -7.80$ and $p < 0.001$, indicating a statistically significant difference. Only 50% of girls had adequate knowledge, in contrast to 91.78% of boys.

Conclusion: The study highlights a substantial gender disparity among adolescents on reproductive health issues. Boys demonstrated higher and more consistent levels of knowledge regarding reproductive health than girls.

Introduction

Adolescence is a transitional phase of life between childhood and adulthood where individuals gone through a profound physical, cognitive, and psychosocial changes. These changes not only prepare them for adulthood but also introduce complex challenges particularly in relation to reproductive health. Globally, adolescents and young people (aged 10-24 years) represent a significant portion of the population, with approximately 1.2 billion adolescents worldwide, of which 85% reside in developing countries. In many regions, particularly in developing countries, adolescents face substantial risks, including early marriage, teenage pregnancies, sexually transmitted diseases (STDs), and unmet needs for contraception. . According to WHO, 55% of unintending pregnancies among adolescent girls aged 15-19 years end in abortion which are unsafe for their life. Nearly 20% of the 1.5 million girls married before the age of 15 are already mothers, and 27% of married female adolescents report unmet needs for contraception. The term “reproductive health” is often misunderstood or completely unknown among school-going adolescents, especially in rural or socioeconomically disadvantaged areas. This lack of awareness inhibits them to take proper decisions, to seek appropriate medical care, and to protect their well-being. Despite this, reproductive health education remains insufficiently integrated into school systems. Adolescents frequently lack access to safe, accurate, and age-appropriate information, leaving them susceptible to misinformation, unsafe practices, and poor decision-making.

Objective: -

The objectives of the study are--

1. To Assess the existing level of knowledge regarding reproductive health among school-going students in the adolescent age group.
2. To Compare the level of Knowledge regarding reproductive health among adolescent girls and boys.
3. To determine the association of selected socio demographic variables with the level of knowledge score regarding reproductive health among adolescent.

Assumption: -

- The adolescents have lack of knowledge on reproductive health.
- Adolescents will participate willingly in research study.

Inclusion Criteria: -

1. Only students of age 15-18 years will be included.
2. Students who are available during the study.
3. Students who provide informed consent to participate in the study.

Delimitation: -

The study is delimited to

- Adolescents who are at the age between 15-18 years only can participate
- Adolescents who are not willing to participate.
- Adolescent who will not be available during data collection

LITERATURE REVIEW: -

A descriptive study was conducted by **Dr. T. Radhakrishnan**[2] to assess the comprehensive assessment of knowledge on reproductive and sexual health among unmarried graduate students aged 18-24 years in northern Kerala. Findings of the study showed that majority of the students had inadequate knowledge. Only 6.8% students demonstrate good understanding of reproductive health issues such as pregnancy, contraception, and reproductive tract infections. The study highlighted that students from urban areas and those whose mothers had higher educational qualifications showed better knowledge levels and among them females were more knowledgeable in pregnancy related aspects whereas male showed better performance on reproductive health issues.

Shilpa Dutta[3] and her colleagues conducted a cross -sectional study on knowledge of reproductive health among 564 college students in northern India. The findings of the study revealed that the participants who were aged between 23-25 years exhibited the highest knowledge (43.22%). Gender disparities were evident. Female participants showed higher awareness (46.52%) compared to male. The study demands a need of demographically sensitive health programs in college curricula that could enhance awareness.

The study by **Mohmad Iqbal (2019)**[4] explores the knowledge and awareness of sexual and reproductive health among 550 school-going adolescents in the Kashmir Valley. The result of the study depicts a gradual increase in knowledge with higher class levels. Among all participants boys demonstrated more awareness than girls regarding reproductive health aspects. But result revealed a significant gap in fundamental reproductive health knowledge, especially among female students.

Nenchy Yetika [5]**and her associates (2023)** conducted a cross-sectional descriptive study on the relationship between social media use and risky sexual behaviour among 123 senior high schools students in Jember Regency. The study found that 78% of adolescents exhibit low level of social media use. 54.4% engaged in less active risky sexual behaviour. It suggested that increased social media exposure is associated with higher instances of risky sexual behaviours. The study emphasizes the vital role of parents, teachers, and schools in shaping adolescent's behaviour and demand the need for comprehensive reproductive health education to improve critical thinking skills to avoid negative influence of online media.

A study on impact of health education on knowledge of reproductive and sexual health among 203 adolescent girls was conducted by **Kamal Jyoti**[6] **and associates (2025)** to evaluate the role of health education in enhancing reproductive and sexual health awareness among adolescents. The result of the study revealed a significant improvement in awareness. The knowledge on HIV and AIDS of adolescents increased from 25.21% to 64.43% after intervention and the awareness about STD prevention also rose from 22.16% to 70% after intervention. This result highlights the transformative impact of targeted health education session with essential reproductive health knowledge.

Rajnish S. Borkar, Chanbas G. Patil[7], and associates conducted a cross- sectional descriptive study on higher secondary students in Solapur city regarding reproductive health. Study revealed that a significant majority (84.8%) of students favored the inclusion of reproductive health education (RHE) in the school curriculum. Notably, 47% of students preferred expert-led lectures as the mode of delivery, and over half (52.4%) indicated a preference for discussing reproductive health issues with doctors or health workers, while 35.6% opted to confide in friends.

RESEARCH METHODOLOGY

Research Approach - Quantitative research approach

Research Design - A cross-sectional descriptive comparative research design**.**

Setting of the Study- The study was conducted in selected secondary schools located in Howrah and Kolkata, West Bengal, India.

Population - School-going students from Class X to XII who are available during the study and who provide consent.

Sample Size- 149 students. 73 boys and 76 girls.

Sampling Technique - A Non-probability Convenience sampling technique.

Variables: -

Independent variable: -

In the present study, the independent variable is the adolescent girls and boys.

Dependent variable: -

In the present study, the dependent variable is the knowledge regarding reproductive health among adolescent girls and boys.

Demographic variable: -

Age, Educational qualification, Religion, Number of siblings, educational status of parents, Occupation, Type of family, Monthly income of the family (In Rs), Source of information.

Data Collection Tools and Technique - The tool was divided into three parts:

- **Part I: Socio-Demographic Data**
  This section gathered information on age, class, parental education and occupation, number of siblings, monthly family income, type of family, and religion
- **Part II: Knowledge on Reproductive System**
  This section consisted of 11 multiple-choice questions regarding anatomical and physiological aspects of the male and female reproductive systems.
- **Part III: Knowledge on Reproductive Health**
  This part included 13 multiple-choice questions that assessed knowledge related to puberty, sexual health, menstrual hygiene, contraception, STDs, early marriage, and teenage pregnancy.

Result - This chapter deals with the statistical analysis and interpretation of data. Descriptive and inferential statistics was used to organize, summarize, and interpreted the data.

SECTION-A

Table: 1. Distribution of demographic variables among adolescent Girls and Boys.

Girls (n=76) and Boys (n=73)

CATEGORY	GIRLS		BOYS	
	F	**%**	**F**	**%**
Age				
1. 15-16 Years	22	28.9	28	38.35
2. 17-18 Years	54	71.1	45	61.64
Class				
1. Class-X	39	51.3	12	16.43
2. Class-XI	23	30.3	25	34.24
3. Class-XII	14	18.4	36	49.31
Mother's Education				
a) No formal education	5	6.6	0	0
b) Class V	6	7.9	0	0
c) Class VI – X	33	43.4	3	4.1
d) Class XI-XII	24	31.6	9	12.3
e) Graduation level and above	08	10.5	61	83.6
. **Father's Education**				
a) No formal education	2	2.6	0	0.0
b) Class V	8	10.5	0	0.0
c) Class VI – X	28	36.8	1	1.4
d) Class XI-XII	20	26.3	2	2.7
e) Graduation level and above	18	23.7	70	95.9
. **Mother's Occupation**				
a) Homemaker	58	76.3	39	53.4
b) Working	18	23.7	34	46.6
Father's Occupation				
a) Employed	74	97.4	70	95.9
b) Unemployed	02	2.6	03	4.1

CATEGORY	**GIRLS**	**BOYS**	**CATEGORY**	**GIRLS**
	F	**%**		**F**
Number of siblings				
a) Nil	28	36.8	19	26
b) 1	42	55.3	41	56.2
c) 2	05	6.6	12	16.4
d) more than 2	01	1.3	01	1.4
Family Income				
a) Below Rs 5,000/-	4	5.3	1	1.4
b) Rs 5,001/- Rs 10,000/-	39	51.3	2	2.7
c) Rs 10,001/- Rs 15,000/-	21	27.6	7	9.6
d) > 15,001/-	12	15.8	63	86.3
Type of family				
a) Nuclear	57	75.0	49	67.1
b) Joint	19	25.0	24	32.9
Religion				
a) Hindu	73	96.1	65	89
b) Christian	1	1.3	2	2.7
c) Muslim	1	1.3	5	6.8
d) Others (Please specify)	1	1.3	1	1.4
Previous Information regarding teenage pregnancy	37	48.7	59	80.8
a) Yes	39	51.3	14	19.2
b) No				
Sources of Information				
a) Peer group/Friends	14	18.4	32	43.8
b) TV/ Radio/social media / Movie	17	22.4	25	34.2
c) Health personnel/ Hospital/Doctor/Nurse.	3	3.9	02	2.7
d) Parents	3	3.9	0	0.0
Taking the physical changes due to				

puberty as normal				
a) Yes	61	80.3	73	100
b) No	02	2.6	0	0.0
c) Don't Know	13	17.1	0	0.0
Feeling comfortable when puberty related topics are discussed in class in front of opposite gender	22	28.9	58	79.5
a) Yes	54	71.1	15	20.5
b) No.				
Choice of spending leisure time				
a) Reading story books	18	23.2	20	27.4
b) Do outdoor activity	8	10.5	31	42.5
c) Watching television	12	15.8	08	11.0
d) Act with internet	34	44.7	13	17.8
e) Others	04	5.3	0	0.0
Choice of work in online				
a) Chatting with friend/ strangers	16	21.1	11	15.1
b) Play Game	04	18.4	21	28.8
c) Watching video/movie	43	56.6	26	35.6
e) Watching news	02	2.6	14	19.2
f) Others	01	1.3	01	1.4
Place of access internet				
a) From Home	76	100	36	49.3
b) At School / library			22	30.1
c) At Internet cafe			10	13.7
d) From friend's residence			5	6.8

Data analysis-

Among 76 girls and 73 boys, girls were mostly aged 17–18 (71.1%) and in class X, while boys had a more even distribution and were mainly in class XII (49.3%). Boys' parents were more educated and economically settled. Most girls' mothers were homemakers (76.3%), while many boys' mothers were employed (46.6%). Girls mostly belonged to nuclear families (75%), boys had more joint family representation.

Awareness of teenage pregnancy was higher among boys (80.8%) than girls (48.7%). While 80.3% of girls accepted puberty changes, many felt shy discussing them (71.1%), unlike boys, who were open and comfortable (79.5%).

SECTION - B

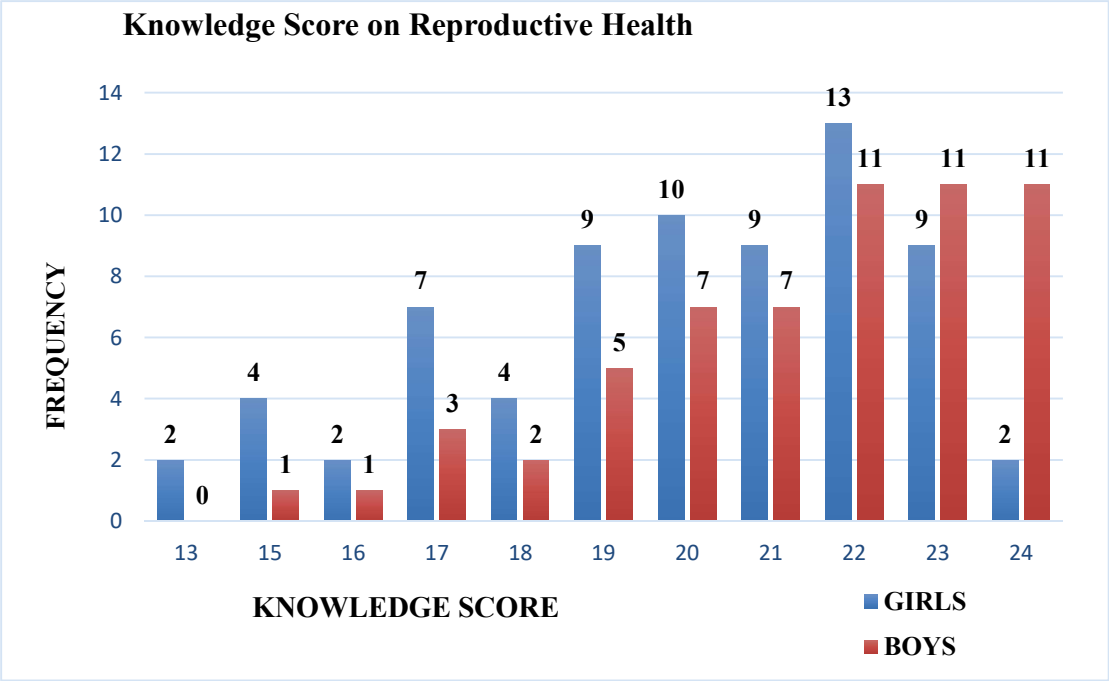
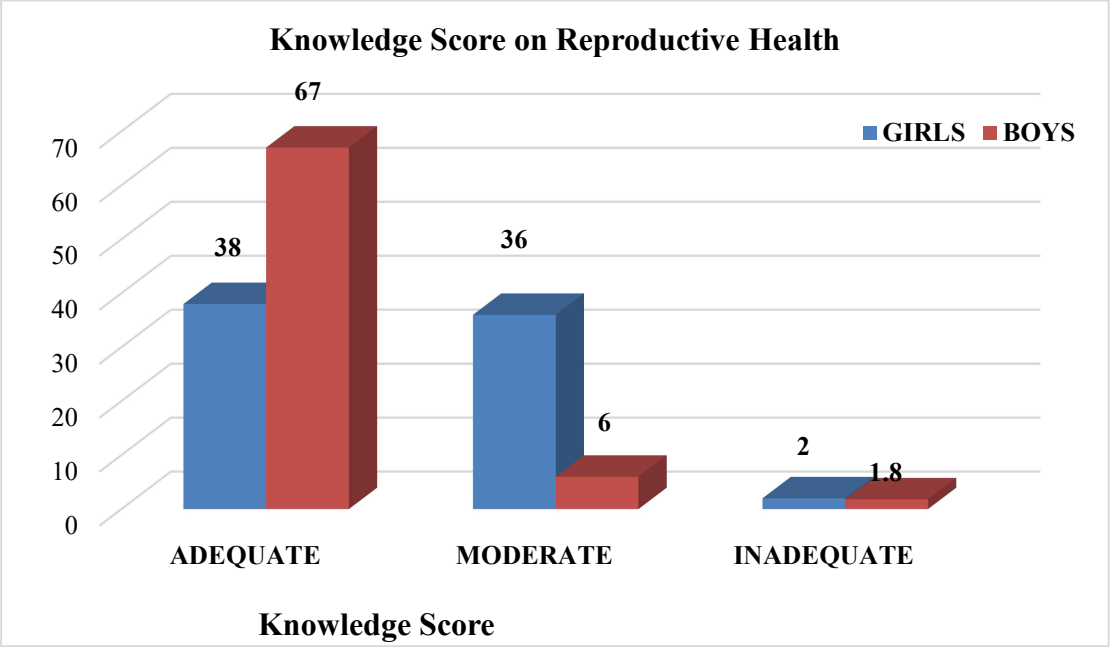


Fig: -2.1 Distribution of Comparison of Knowledge Scores on Reproductive Health among Girls and Boys.

Both girls (17.1%) and boys (15.1%) most commonly scored 22. However, boys were more concentrated in higher scores (23–24), while lower scores (13–17) were more common among girls. Overall, boys demonstrated slightly better knowledge of reproductive health.



91.78% of boys and only 50% of girls had adequate knowledge. Moderate knowledge was higher among girls (47.4%) than boys (8.21%). Only girls (2.6%) showed inadequate knowledge. This indicates a notable gender gap, with boys having better reproductive health awareness.

Table 2.4 Comparison of Knowledge score between Girls and Boys.

Girls(n=76) Boys (n=73)

Category	Knowledge Score					
	Mean	SD	df	Independent "t" value	P value	Remarks
Girls	19.4	2.37	134	-7.80	<0.001	Highly Significant

An independent t-test showed a significant difference in knowledge scores between girls (M=19.4, SD=2.37) and boys (M=22, SD=1.65), with t = -7.80 and $p < 0.001$. This indicates boys had significantly higher reproductive health knowledge, possibly due to better information access.

SECTION C

A Chi-square test of independence was conducted to examine the relationship between socio-demographic characteristics and knowledge scores. The knowledge scores were compared with different demographic variables such as age, class, parental education, leisure activity, and online behaviour.

From the chi-square data, it was found that

Among girls, a significant association was found between class level and leisure time activities with knowledge scores. Girls in higher classes and those spending time on informative or digital activities had better knowledge. Other variables showed no significant association.

Among adolescent boys, who are aged 17–18 years had significantly higher knowledge scores compared to those aged 15–16 years. In education, boys showed strong association. Higher classes, especially Class XII, scored better. Boys who engage in meaningful activities during leisure or online are more knowledgeable. No significant association was observed with other demographics like religion, family type, or parental occupation.

Conclusion:

The study reveals a significant gender disparity in reproductive health knowledge among adolescents. Boys demonstrated notably higher awareness levels, with 91.78% showing adequate knowledge compared to only 50% of girls. Statistical analysis confirmed a significant difference in knowledge scores ($p < 0.001$), suggesting boys may have better access to information. Girls also showed greater discomfort in discussing puberty-related issues and relied more on passive sources like media. These findings highlight the need for targeted, gender-sensitive reproductive health education.

Recommendations:

1. **Strengthen School-Based Education:** Implement comprehensive reproductive health programs in schools with equal focus on both genders, especially targeting adolescent girls.
2. **Promote Gender-Sensitive Communication:** Encourage open discussions about puberty and sexual health in safe, non-judgmental environments.
3. **Parental and Teacher Involvement:** Train parents and teachers to be reliable sources of accurate reproductive health information.
4. **Address Access Gaps:** Ensure equitable access to health information through community outreach, especially in underserved areas.

Limitations of the Study:

1. **Limited Sample Size and Scope:** The study was conducted on a small sample (N=149) from selected schools, which may not represent the broader adolescent population.

2. **Cross-Sectional Design:** In this study data collected at a single point in time, so, limiting the ability to assess changes over time or establish causality.

3. **Limited Depth of Assessment:** The structured questionnaire primarily assessed factual knowledge, without exploring deeper understanding, attitudes, or practical application of reproductive health information.

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