



A Study to Assess the Knowledge of Menstruation, Psychosocial Problems and Their Coping Strategies during Menstruation among Rural Adolescent Girls in West Bengal

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ABSTRACT

Mathematics education emphasizes not only the mastery of content but also the development of higher-order thinking skills, such as deductive reasoning and problem-solving ability. These cognitive competencies are critical for students to engage in logical analysis and effectively approach complex mathematical tasks. This study explores the influence of deductive reasoning and problem-solving ability on Achievement in Applied Mathematics among secondary school students. Deductive reasoning involves drawing logically valid conclusions from given premises and is fundamental to mathematical proofs and structured problem-solving. Problem-solving ability, on the other hand, refers to a student's capacity to identify, analyze, and resolve problems using appropriate strategies. Using a quantitative research design, a representative sample of 300 secondary school students was assessed through standardized tests measuring Deductive Reasoning, Problem-Solving Ability, and Achievement in Applied Mathematics. Statistical techniques, including correlation and regression analysis, were applied to examine the relationship and predictive power of these variables on Achievement in Applied



Mathematics. Findings of the study revealed that there is a moderate positive relationship between both Deductive reasoning and Achievement in Applied Mathematics and between Problem-Solving Ability and Achievement in Applied Mathematics of Secondary School Students. The results of the study highlighted significant implications for designing curriculum, teaching strategies, and assessment practices in secondary mathematics education. Emphasizing these skills could help foster logical thinking and deeper understanding in students, ultimately enhancing their academic success in Mathematics.

Introduction:

Today's adolescent girls are tomorrow's mothers. The World Health Organization (WHO) defines an adolescent as any person between the ages of 10 and 19¹. This period marks a crucial phase of physical, emotional, and psychological development, including the onset of puberty and menstruation. This age group is crucial for menstrual and health education interventions, as they are likely to be in the early stages of puberty¹.

Menarche or the onset of Menstruation can be a shocking experience in many girls, especially since discussions about Menstruation and menstrual hygiene are often limited in India. Menstruation is a normal and vital part of a girl's development during adolescence. It plays an important role in reproductive health, yet it continues to be misunderstood and neglected, especially in rural communities. In areas like rural West Bengal, menstruation is often treated as a private or shameful topic, leading to silence, confusion, and fear among young girls.

Menstrual problems among adolescent rural girls often come with physical problem. Many girls face issues such as irregular cycles, severe cramps (dysmenorrhoea and inadequate access to sanitary products, which can lead to physical discomfort and health complications. These menstrual problems frequently affect their school attendance performance.

Many adolescent girls start menstruating without having proper knowledge about what is happening to their bodies. This lack of awareness can result in poor hygiene practices and increase the risk of infections. Moreover, girls often face emotional and psychological problems such as stress, anxiety, and



embarrassment during their periods. Due to limited support and cultural restrictions, they are often left to manage these challenges on their own.

This study aims to explore the knowledge rural adolescent girls have about menstruation, the psychological issues they face during their periods, and how they cope with them. By understanding these areas, the study hopes to highlight the need for better education, open communication, and support systems to improve the menstrual health and emotional well-being of adolescent girls in rural West Bengal.

Purpose of the study:

The purpose of the study is to assess the knowledge on menstruation, to identify the Psychological and Psychosocial problems and their coping strategies during menstruation among Rural adolescent girls in West Bengal. Addressing both the physical and psychosocial aspects of menstrual health is essential to empower rural adolescent girls and improve their wellbeing

Objectives of the study:

1. To assess the knowledge related menstruation, sources of information, psychological and psychosocial problems
2. To determine the psychological and psychosocial problems during menstruation.
3. To find the association between the knowledge scores and the selected socio-demographic variables.

Hypothesis:

H01: Adolescent girls will not have adequate knowledge related to menstruation, sources of information, and psychological problems

H1: Adolescent girls will have adequate knowledge menstruation, sources of information and psychological problems

H02: There will be no association between the knowledge scores and the selected socio demographic variables.

H2: There will be a significant association between the knowledge scores and the selected socio demographic variables.

Assumptions:



- Adolescent girls generally know about menstruation and menstrual hygiene but need details education regarding this
- Adolescent girls have lack of knowledge regarding psychological problems related to menstruation
- Cultural norms may influence on the normal lifestyle during menstrual phase of the adolescent girls
- Nursing students will participate willingly in research study.

Inclusion Criteria:

1. Adolescent girls' students between age group 12 -19.
2. Adolescent girl students who didn't attained menarche
3. Students who were available during the study.
4. Students who were willing to participate in the study

Exclusion criteria:

- 1) Adolescent girl students who were aged less than 12 years and older than 19 years
- 2) Adolescent girl students who didn't attained menarche
- 3) Students who were not available during the study.
- 4) Students who were not willing to participate in the study

REVIEW OF LITERATURE

Dasgupta & Sarkar (2008)² conducted a cross-sectional study among 160 adolescent girls in a secondary school in West Bengal. They found that only 67.5% of girls were aware of menstruation before menarche. Among them, only 37.5% had gained knowledge about the physiology of menstruation. This study highlighted the significant gap in menstrual knowledge among school-going adolescents.

Thakre et al. (2011)³ conducted a study in Nagpur, India, with 1,160 adolescent girls, reported that 85% of participants experienced mood swings and irritability during menstruation. Additionally, 70% felt embarrassed during their periods, showed a strong link between menstruation and psychosocial issues.

Patle & Kubde (2014)⁴ studied among 200 adolescent schoolgirls and observed that 64.5% of them believed menstruation as impurity. 74% reported they faced lots of restrictions in household work during



menstruation such as not being allowed to enter the kitchen or temple. These cultural beliefs were found to affect their mental well-being and self-esteem.

Khanna, Goyal & Bhawsar (2005)⁵ conducted a research study in Rajasthan and found that only 36% of girls received information about menstruation before menarche, and 60% reported feeling scared or confused at the onset of menstruation. This lack of preparedness was associated with psychological distress which affected their normal daily life activities.

Sharma et al. (2008)⁶ in a conducted a study among 350 adolescent girls reported that 78% had heard about menstruation before menarche, mostly from their mothers, but only 41% had adequate knowledge about menstrual hygiene. Emotional problems such as irritability (76%), depression (54%), and anxiety (63%) were commonly reported during menstruation.

Sommer et al. (2015)⁷ in a global review found that in low- and middle-income countries, over 50% of adolescent girls reported school absenteeism during menstruation, and many suffered from low self-confidence, fear of leakage, and social isolation. These psychosocial challenges were often due to poor education and cultural stigma around menstruation.

Research Methodology:

Methodology is the systematic, theoretical analysis of the methods. The purpose is to achieve research objectives

Research Approach: - Quantitative research approach

Research Design—Descriptive cross-sectional survey

Setting -- The research setting was Jukhia Kumar Narayan Banimandir High School in Purva Medinipur West Bengal

Population: For this study, the population was adolescent girls between 12- 19 years of age (class VII-class XII year) who were available during the study and who provided informed consent to participate in the study Sample.

Sampling technique: - In the present study, a Non-Probability Convenience sampling technique has been used.

Sample size— 100



Variables:

In the present study,

Demographic variable: - Socio-demographic variables are age in years, educational qualification, religion, mother's & father's level of education monthly family income, type of family, number of elder sister present in the family,

Independent variable: Adolescent girl students

Dependent variable: knowledge and psychological problems of the Adolescent girl students regarding menstrual hygiene.

Tools for data collection

Part - A: - It consists of socio demographic variables.

Socio-demographic variables are age , educational qualification, religion, mother's & father's level of education monthly family income, type of family, number of elder sister present in the family,

Part B

Self-structured questionnaire schedule prepared to assess the level of knowledge on menstruation, physical, psychological and psycho-social problems and their coping strategies.

Ethical consideration:

- Approval taken from the Headmaster of Jukhia Kumar Narayan Banimandir High School, Purva Midnapur, West Bengal
- Informed consent taken from the willing participant
- Confidentiality and anonymity of the responses has been maintained

Plan for data analysis: -

Both descriptive and inferential statistics are planned to be used for the data analysis.

1. Descriptive statistics (frequency distribution and percentage) will use to analyse the socio-demographic profiles information.
2. Descriptive statistics (e.g., mean, median, standard deviation) will summarize student knowledge levels.



3. Association between level of knowledge about menstruation and selected demographic variables are tested by Chi-square test.

Result: - This analysis reveals valuable insights into the knowledge of adolescent girl students regarding menstruation related physical, psycho-logical and psycho-social problems and their coping strategies. The findings suggest a generally positive outlook towards caring for adolescent girls suffering from menstrual problem but also highlight areas for improvement in their educational preparation.

SECTION -I

Table1: The socio-demographic variables with frequencies and percentages

Category	Frequency	Percentage
Age		
12-15 YEARS	89	89
	11	11
16-19 YEARS		
CLAS		
S	89	89
VII-IX	11	11
X-XII		
RELI		
GION	92	92
Hindu	8	8
Musli	0	0
m	0	0
Christi		
an		
others		
MOTHER'S EDUCATION		
Illiterate	25	25
Primary level	11	11
	36	36



Secondary level	28	28
Above secondary level		
FATHER'S LEVEL OF EDUCATION	23	23
a) Illiterate	12	12
b) Primary level	22	22
c) Secondary level	43	43
d) Above secondary level		
Monthly family income		
a) Below Rs 5000/-	17	17
b) Rs 5001/- Rs 10,000/-	19	19
c) Rs 10,001/- Rs 15,000/-	33	33
d) >15,000/-	21	21
Type of Family		
a) Nuclear	52	52
b) Joint	48	48
No of elder sister		
a) Yes	32	32
b) No	68	68

Table 1 showed that among 100 adolescent girls' majority of the participants (89%) are younger adolescents (12–15 years) and also 89% of participants are studying in Class VII–IX. 92% of the participants were Hindu. Majority of the mothers (36%) completed secondary level education whereas maximum fathers (43%) completed above secondary level. The majority of families (33%) earned between ₹10,001 – ₹15,000. Maximum girls (52%) belonged to nuclear families. Most of the adolescent girls (68%) didn't have any elder sister.

SECTION -II

Table 2: Mean, median and standard deviation of knowledge score

Knowledge score range	mean	median	Standard deviation
4-10	6.82	7	1.35

Table 2 showed that mean score was 6.82, median and standard deviation was 7 and 1.35 respectively which revealed that Overall, the participants had a moderate level of knowledge, with consistent performance that means most of the participants had a similar level of understanding.

Distribution of participants as per their knowledge level on menstruation

N=100

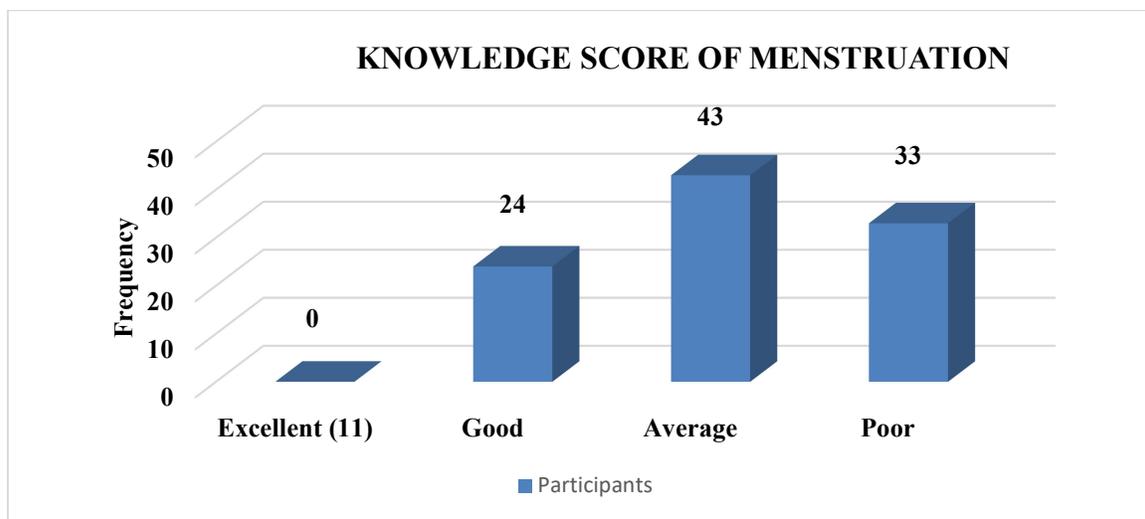


Figure 1: Distribution of knowledge score among adolescent girls

The bar diagram in Figure 1 showed that most of the participants (43%) had average knowledge followed by poor and good knowledge. No participants had reached to the excellent level

Table 3: Frequency and percentage distribution of Psychosocial problems faced by adolescent girls during menstruation N=100

Sl no	Psychological and psycho-social problem	Frequency(f)	Percentage (%)
1.	Mood swings during period	88	88
2.	Irritability or anger during period	86	86
3.	Anxiety during menstruation	72	72
4.	Feeling of hopelessness or sadness	70	70
5.	Feeling of fear or embarrassing herself due to	60	60

	menstrual bleeding		
6.	Absent from school on those days during menstruation	54	54
7.	Change of appetite/sleep pattern	55	55
8.	Forbidden to do household work	90	90

Table 3 showed that large number of girls had emotional disturbances like mood swings (88%), irritability or anger (86%), anxiety (72%) hopelessness or sadness (70%), feeling of fear or embarrassing (60%) etc. 55% participants had suffered from the psychosomatic symptom like change in appetite or sleep pattern. 54% girls were absent from school and interestingly, a very high percentage (90%) were forbidden from doing household work.

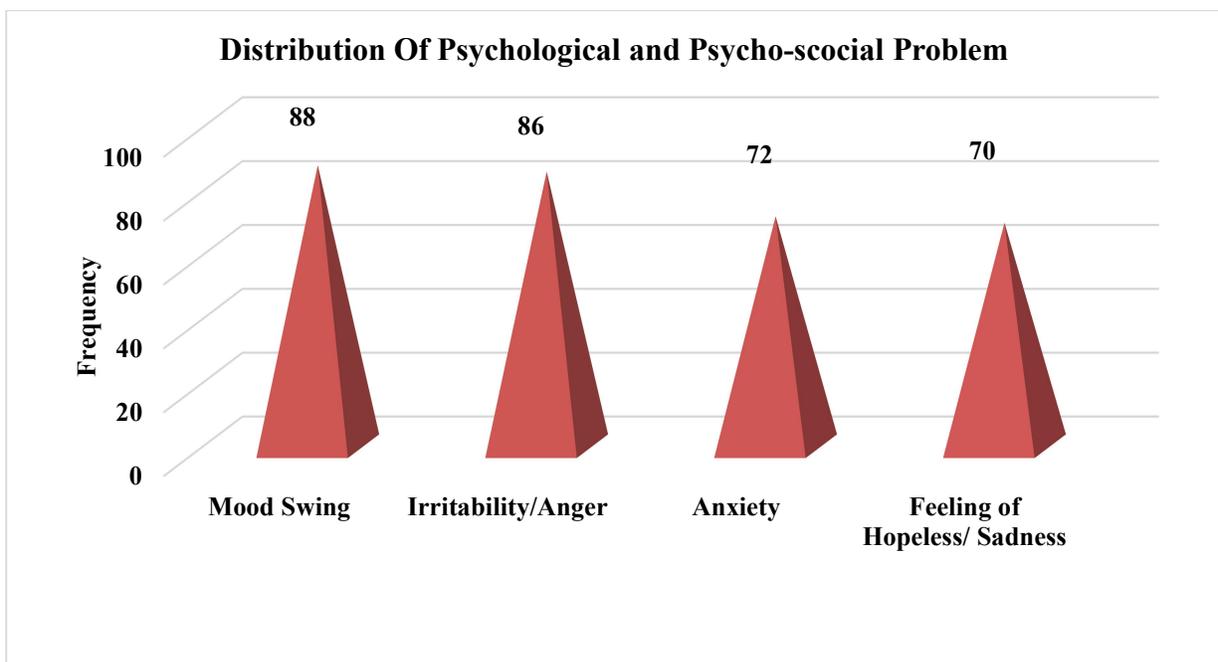


Figure 2:

Table bar diagram showed that large number of girls had emotional disturbances like mood swings (88%), irritability or anger (86%), anxiety (72%) hopelessness or sadness (70%), feeling of fear or embarrassing (60%) etc. 55% participants had suffered from the psychosomatic symptom like change in appetite or sleep pattern. 54% girls were absent from school and interestingly, a very high percentage (90%) were forbidden from doing household work.

Table 4: Frequency and percentage distribution of coping strategies of psychological and Psychosocial problems faced by adolescent girls during menstruation.

Sl no	Coping strategies	Frequency	percentage
1	Meditation	49	49
2.	Discussion within friend circle	40	40
3	Ignoring of minor ailments of menstruation	38	38
4	Getting the help from family and friends	50	50

Data in table 4 showed that adolescent girls employed a variety of coping strategies during menstruation, with emotional and social support (from family, friends, or peer groups. They have been used the different coping strategies like Meditation (49%), discussion with friend circle (40%) Ignoring of minor ailments of menstruation (38%) and getting the help from family and friends.

Table 5: Association between knowledge level with selected demographic variables among adolescent girls.

Variables	Knowledge scores		Chi square value	df	P value at 0.05 level	Significance at 0.05 level	
	Below median	Above median					
Age in years							
	12-15	38	45	0.29	1	3.84	not significant
16-19	9	8					
Class	VII-IX	24	17	1.28	1	3.84	Not significant
	X-XII	41	18				
Mother's education	Below secondary level	40	34	0.10	1	3.84	Not significant
	Above secondary level	15	11				
Presence of							

elder sister						
Yes	25	9	0.989	1	3.84	Not significant
No	42	24				

The data presented in table 5 showed that there was no significant association between menstruation knowledge level of adolescent girls and selected socio-demographic variables like age, class, mother's education, and presence of an elder sister.

Conclusion:

The study concludes that while most adolescent girls had average to good knowledge about menstruation, indicating a gap in comprehensive menstrual education. A significant proportion faced psychosocial challenges such as mood swings, irritability, anxiety, sadness, school absenteeism, and cultural restrictions, highlighting the emotional and social burden associated with menstruation. Statistical analysis showed no significant association between knowledge level and demographic factors like age, class, mother's education, or presence of an elder sister, suggesting that menstrual knowledge is influenced more by external sources such as school education and awareness programs. These findings indicate the urgent need for holistic menstrual health education and psychosocial support through school-based education, media, peer discussion or health education program for adolescent girls.

Recommendations:

1. Comprehensive Menstrual Health Education in Schools

- ❖ Implement regular and age-appropriate menstrual health sessions for adolescent girls (and boys), starting before menarche so that they will be oriented about this normal physiology
- ❖ Include topics on biology, hygiene, emotional changes, and social myths and engaging of female teachers to conduct the session sensitively.

2. Psychosocial Support:

- ❖ Arranging counselling services to adolescents within certain interval by school nurses/female teachers/Doctors etc. to provide emotional support and guidance.

3. Parental Involvement:

- ❖ Conduct **awareness sessions for parents**, especially mothers, to encourage open communication and to promote positive attitudes at home.

4. Improve Menstrual Hygiene Management (MHM) Facilities



- ❖ Ensure schools have proper facilities like privacy, clean and functional toilets with running water and waste disposal systems.
- ❖ Consistent supply of free sanitary products.

5. Further Research:

- ❖ Conduct long-term studies tracking adolescent girls' emotional, psychological, and educational outcomes related to menstruation.
- ❖ Explore how early menstrual experiences affect self-esteem, school participation, and mental health over time.
- ❖ Investigate the influence of male family and school members on menstrual stigma and support.
- ❖ Assess the effectiveness of including boys in menstrual education in reducing taboos and improving girl participation in school.

Limitations of the study:

A) Limited Generalizability and sample size

- ❖ The study was conducted in selected rural areas of West Bengal, and the findings may not be applicable to urban settings or other states with different cultural, educational, or economic backgrounds.
- ❖ The study was conducted among 100 adolescent girls which may not represent the larger segment of population.

B) Cross sectional Design: Being a cross-sectional study, it captures only a snapshot in time. It does not allow assessment of how knowledge, attitudes, or coping strategies evolve over time or due to interventions.

C) Self-reported Data: The data on psychosocial problems and coping strategies were collected through self-report, which may be subject to recall bias or social desirability bias—especially on sensitive topics like menstruation.

D) Limited Male Involvement

- ❖ Menstrual health is also influenced by boys, fathers, and male teachers, but their perspectives were not included in this study, missing a holistic view of menstrual stigma and support.

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