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Determinants of menstrual hygiene among school going adolescent girls in a rural area of Odisha

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Abstract

Background: Menstrual cleanliness is a disregarded issue in country India. Absence of menstrual cleanliness in immature young ladies can make them susceptible to different morbidities, for instance, regenerative tract contamination and urinary tract disease and their long-term results, for instance, cervical malignant growth, barrenness, and ectopic pregnancy. This examination plans to discover the determinants of menstrual cleanliness among the school going youthful young ladies in a rustic territory of West Bengal.

Destinations: To evoke the menstrual cleanliness rehearses among the examination populace and to discover the relationship of poor menstrual cleanliness rehearses with sociodemographic factors, for example, age, occupation and instruction of the guardians, lodging, and nearness of sterile can.

Materials and Methods: A clear, cross-sectional ponder was led among 307 school going pre-adult young ladies of 12–17 years age bunch in a country territory of West Bengal.

Results: Majority of the understudies in the two schools (62.9%) were Hindu, general standing (54.1%) and had a place with family unit (69.7%). Most of the guardians in the two schools had finished their instruction up to essential dimension. Bivariate investigations were done, and the noteworthy components anticipating great menstrual cleanliness were gone into the multivariable calculated relapse display. It uncovered that great menstrual cleanliness was more among those whose moms were taught (balanced chances proportions [AOR] 2.3 [1.06–5.01]), and who were homemakers (AOR 2.3 [1.06–5.01]).

Ends: Menstrual cleanliness among the investigation populace was observed to be poor. The improving training dimension of the moms can go far in improving menstrual cleanliness practice.

Keywords: Adolescent girls, menstrual hygiene practices, multivariable logistic regression

Introduction

About one-fifth (21.4% or 243 million) of India's populace is comprised by the young people who can change the social and monetary fortunes of the country^[1].

Youthfulness is a period among adolescence and adulthood. Young ladies experience monthly cycle out of the blue amid immaturity. Feminine cycle might be characterized as an intermittent and repeating shedding of endometrium joined by loss of blood. It happens at around 28-day interims between the menarche (beginning of monthly cycle) and the menopause (end of menstruation)^[2]. Menstruation is such an issue which is frequently obfuscated by different legends and misguided judgments in our general public. In spite of the fact that it is an ordinary physiological marvels, this theme isn't examined straightforwardly. The immature young ladies get suspended because of different social misinterpretations, low financial conditions, and absence of appropriate wellbeing instruction either at home or at school. Besides, insufficient and unseemly Water, sanitation and cleanliness offices in schools, particularly in rustic regions additionally comes in the method for dealing with their feminine cycle steadily, securely, and with poise. These influence their wellbeing and instructive fulfillment. They now and then much experience the ill effects of conceptive and

Youthful young ladies are regularly hesitant to talk about the point in regards to period with their folks and frequently dither to look for medicinal help in regards to menstrual issues. All these can prompt genuine complexities, for example, ectopic pregnancy, fruitlessness, and incessant pelvic fiery illness.

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Numerous investigations have been done in India and in abroad concentrating on menstrual cleanliness, yet so far not very many examinations on this subject have been done in the country zone of West Bengal. For example, studies done in India by Jaikhani *et al.* [1], in Mirat, Ray S *et al.* [3]. In West Bengal and in abroad by El-Gilany A.H [4], in Egypt have attempted to discover menstrual cleanliness practice and its determinants among the youthful young ladies. A large number of these determinants are modifiable. In the event that these are distinguished and tended to, it can go far in advancing great menstrual cleanliness practice among immature young ladies from the earliest starting point. With this foundation, the present investigation was embraced among youthful school going young ladies in a provincial region of West Bengal with the accompanying targets:

To consider the socio demographic profile among the school going youthful young ladies of age bunch 12-17 years chose from two schools in a rustic region of West Bengal

To discover the menstrual cleanliness rehearses among the investigation populace.

To discover the relationship between poor menstrual cleanliness rehearses with socio demographic factors, for example, - age, class, religion, rank, and sort of family, training and control of guardians, lodging, and nearness of sterile can. Toilet.

Materials and Methods

The study was a school-based cross-sectional study conducted for 2 months (June 2014–August 2014). The study was conducted in two Government Higher Secondary Girls' Schools selected purposively in Chinsurah -Mogra Block of Hooghly District which is situated in a rural area of West Bengal.

From the school lists and information gathered from D. I. office of Hooghly district, two schools fulfilling the predetermined criteria were shortlisted:

- Girls' school
- Government Higher Secondary Schools situated in a rural area
- Students were mainly coming from nearby rural area.

The first school selected was Shyama Prasad Vidyalaya for Girls' (High). It is a government sponsored Higher Secondary Bengali Medium Girls' School. The second school chosen was Saradmoni Balika Vidyalaya. It was also a government sponsored Higher Secondary Bengali Medium Girls' school.

All the students of Classes VII-IX and age group of 12–17 years attending the two schools during the study period were considered as the study population.

Inclusion criteria

Those students who had attained menarche at the beginning of the study had been assessed for practice regarding menstrual hygiene.

Exclusion criteria

- Students not willing to take part in the study were excluded from the study
- Students who were seriously ill were excluded from the study.

Study tools

Pretested questionnaire

The questionnaire was prepared in such a way that it conformed to the objectives of the study.

The questionnaire had three sections

- **Section A:** Consisted of questions related to socio demographic characteristics
- **Section B:** Consisted of questions related to perception regarding menstruation
- **Section C:** Comprised of questions on practice of menstrual hygiene and restrictions practiced during menstruation.

The questionnaire was first prepared in English. Then, it was translated into Bengali by an expert in that language keeping semantic equivalence. To check the translation, it was back translated into English by two independent researchers who were unaware of the first English version. Face validity of each item and content validity of each domain had been checked by the experts of All India Institute of Hygiene and Public Health, Kolkata. All efforts were made to keep the questions simple and unambiguous according to the objectives of the study.

Pretesting of the questionnaire

Pretesting of the questionnaire was done to see the clarity, absence of ambiguity, objectivity, and simplicity in another school selected purposively from the schools enlisted as per study criteria. Bans Beria Girls' High School was chosen for this purpose. This school selected for pretesting of the questionnaire was a different school but fulfilled the same criteria used for selection of the study schools.

The questionnaire had been pretested among 12 students. Average time taken for each respondent was also calculated for feasibility of the study. Necessary corrections and modifications were made accordingly.

Method of data collection

Selection of the schools

The schools were selected as described before. The permission for conducting a study in schools was taken from Head Teacher and School Committee of both the schools after due explanation of cause, methods, and implication of the study. Permission of class teachers was taken explaining to them how the study was to be conducted.

Obtaining the ethical clearance

The protocol was cleared by the Institutional Ethics Committee and was later approved by the West Bengal University of Health Sciences.

Preparation of list of the students

A list of students of both the schools was obtained from school records.

Recording of information was done regarding socio demographic characteristics, perception regarding menstruation, menstrual hygiene practices, and restrictions practiced during menstruation by administering the questionnaire. The questionnaire was provided to those students who had achieved their menarche at the beginning of the study. Care was taken that no consultations were

made with the fellow students by strict vigilance with the help of school teachers.

Limitations of the study

Two schools were selected purposively. Recall bias or conscious falsification on the part of the students regarding socio demographic profile or practice of menstrual hygiene could also have affected the results of the study.

Statistical analysis

Data were analyzed in SPSS (version 20, IBM, Kolkata, West Bengal). Continuous variables were presented as median and interquartile range and categorical data were presented based on frequency and percentage. Multivariable logistic regression had been done to find out the strength of association between dependent variable and independent variables. First, a univariate regression was done to ascertain the relationship of the dependent variable with other independent variables. Only those found to be significant were entered into the multiple logistic regression model.

Scoring was done for menstrual hygiene practice. Range of score was 9-68. More than median of the attained score was considered good. [Table 1]. For the entire statistical test applied $P < 0.05$ had been considered to reject null hypothesis.

Results

Majority of the students of both the schools (62.9%) were Hindu. Majority of the parents of the students in both schools had

Table 1: Scoring adapted for analysis of research work

Variable	Number of items	Range of attainable scores	Categorization used in regression
Menstrual Hygiene practice	9	9-68	Good: More than median of attained score Poor: Less than or equal to the median of the attained score

Table 2: Sociodemographic profile of the study population ($n=307$)

Variable	<i>n</i> (%)
Class of schooling	
Class VII	96 (31.3)
Class VIII	106 (34.5)
Class IX	105 (34.2)
Age (in completed years)	
12	45 (14.7)
13	61 (19.9)
14	118 (38.4)
15	52 (16.9)
16	17 (5.5)
17	14 (4.6)
Religion	
Hindu	193 (62.9)
Muslim	25 (8.1)
Christian	89 (29.0)
Type of family	
Nuclear	214 (69.7)
Joint	93 (30.3)
Education level of mother	
No formal education	23 (7.5)
Below primary	36 (11.7)
Primary	141 (45.9)
Middle	33 (10.7)
Secondary	63 (20.5)
Higher secondary	9 (3.9)
Graduate and above	2 (0.65)
Education level of father	
No formal education	8 (2.6)
Below primary	30 (9.8)
Primary	69 (22.5)
Middle	109 (35.5)
Secondary	54 (17.6)
Higher secondary	34 (11.1)
Graduate and above	3 (0.9)
Occupation of mother	
Homemaker	221 (71.9)
Unskilled labor	13 (4.2)
Semi-skilled labor	13 (4.2)
Skilled labor	14 (4.6)
Clerical/shop-owner	33 (10.7)
Semi-professional	13 (4.2)
Occupation of father	
Unemployed	3 (0.9)

Unskilled labor	29 (9.4)
Semi-skilled labor	55 (17.9)
Skilled labor	53 (17.3)
Clerical/shop-owner	138 (44.9)
Semi-professional	11(3.6)
Professional	18 (5.9)
Housing	
Pucca	79 (25.7)
Semi-pucca	133 (43.3)
Kutchra	95 (30.9)
Sanitary toilet in house	
Present	195 (63.5)
Absent	112 (36.5)

Completed their education up to primary level (father - 65.1% and mothers - 30%) [Table 2].

In both school, the majority of the respondents (50.2%) said that the primary source of information regarding menstruation was their mother. Majority of the students knew that menstruation was a normal physiological process (97.0%). The majority of the respondents had a wrong knowledge that the source of menstrual blood is urinary tract (56.7%). Only 28.3% had a correct knowledge that the source of menstrual blood is uterus [Table 3].

60.6% of the study population restricted sour foods, 86.3% restricted religious activities, 63.5% restricted shampooing hair, and 6.19% restricted wearing washed clean clothes [Table 4].

In both schools, majority of the study population (47.9%) use both sanitary napkin and cloth. 20.8% use only sanitary napkins whereas 31.3% use only cloth. Those who were using cloth majority of them were reutilizing it (74.1%). Majority of the study population did not dry the reutilizable clothes in sunlight (72.2%). Majority of the study population dispose the menstrual absorbent in vat (42.3%) [Table 5].

The variables which were found to be significant in binary

logistic regression were age, religion, caste, education of parents, and occupation of mother. The variables which remained significant in the multivariable analysis were education level and occupation of the mother. The strength

Table 3: Perception regarding menstruation among the study population (n=307)

Variable	Frequency (%)
Primary source of information regarding menstruation	
Mother	154 (50.2)
Sister	73 (23.8)
Friend	71 (23.1)
Relatives	3 (1.0)
Teacher	6 (1.9)
Menstruation is	
Normal physiological phenomena	298 (97.0)
Disease	9 (3.0)
Organ from which menstrual blood comes	
Stomach	45 (14.6)
Uterus	87 (28.3)
Urinary tract	174 (56.7)
Ovary	1 (0.3)

Table 4: Restrictions practiced during menstruation among the study population (n=307)

Restrictions	Frequency (%)
Restrict sour foods	186 (60.6)
Restrict religious activities	265 (86.3)
Restrict shampooing hair	195 (63.5)
Restrict wearing washed clean clothes	19 (61.9)

Of association of these variables was attenuated when controlling for the other variables in the multivariate analysis [Table 6].

Discussion

The present study showed that the mother of the adolescent girl was the primary source of information regarding menstruation, for majority of the respondents.

Similar studies done by Damor and Kantharia, [5] Jaikhan, [1] Jogdand and Yerpude [6] in urban settings in

Meeraj and Guntur found that the main source of information regarding menstruation was mother. Ray S, Dasgupta A, [3] in rural secondary school of West Bengal the main source of knowledge being mother and sister (45%). These findings are consistent with the present study. Whereas Yasmin *et al.* [7] reported that in most cases their first informant was their friend. Juyal *et al.* [8] in Uttarakhand reported that friends were the first informant in about 31.8 % girls.

Table 5: Baseline menstrual hygiene practices among study population (n=307)

Variables	Frequency (%)	Score
Type of absorbent (n=307)		
Only sanitary napkin	64 (20.8)	8
Both sanitary napkin and clothes	147 (47.9)	3
Only clothes	96 (31.3)	1
Absorbent change times (n=307)		
≥ 4 times	130 (42.3)	4
<4 times	177 (57.6)	1

Cleaning of genitalia during last menstrual cycle (n=307)		
≥ 4 times	160 (52.1)	4
<4 times	147 (47.9)	1
Material used for genitalia cleaning (n=307)		
Soap and water	194 (63.2)	4
Only water	113 (36.8)	1
Reutilize the cloth (n=243)		
Yes	180 (74.1)	1
No	63 (25.9)	5
Place for washing reutilizable clothes (n=180)		
Pond water	53 (29.4)	1
Tap water	82 (45.6)	3
Both pond and tap water	45 (25.0)	2
Use soap for washing clothes (n=180)		
Yes	166 (92.2)	4
No	14 (7.8)	1
Dry the reutilizable clothes in sunlight (n=180)		
Yes	50 (27.8)	4
No	130 (72.2)	1
Dispose menstrual absorbent (n=307)		
Dispose indiscriminately	52 (16.9)	1
Dispose in a vat	130 (42.3)	2
Dispose in latrine	39 (12.7)	1
Dispose in ground	27 (8.8)	4
Dispose in a dustbin	59 (19.2)	4

Table 6: Association between baseline practice score and socio demographic characteristics of study population (n=307)

Variables	Good practice (>23 i.e., median), n (%)	OR (CI)	AOR (CI)
Class			
IX	58 (55.2)	1.59 (0.99-2.57)	-
VII and VIII	88 (43.6)	1	
Age (continuous)		1.2 (1.002-1.44)	1.16 (0.9-1.41)
Religion			
Hindu	103 (53.4)	1.89 (1.18-3.03)	1.36 (0.8-2.32)
Muslim and Christian	43 (37.7)	1	
Caste			
General	92 (55.4)	2.00 (1.27-3.16)	1.26 (0.54-1.69)
SC, ST and OBC	54 (38.3)	1	
Type of family			
Nuclear	107 (50.0)	1.38 (0.85-2.26)	-
Joint	39 (41.9)	1	
Education level of mother			
≥ Secondary	51 (68.9)	3.22 (1.85-5.62)	2.67 (1.36-5.23)
< Secondary	95 (40.8)	1	1
Education level of father			
≥ Secondary	55 (60.4)	2.09 (1.27-3.46)	1.24 (0.67-2.30)
< Secondary	91 (42.1)	1	1
Occupation of mother			
Homemaker	121 (54.8)	2.95 (1.73-5.05)	2.53 (1.42-4.50)
Others	25 (29.1)	1	
Housing			
Pucca	43 (54.4)	1.45 (0.87-2.42)	-
Kutcha, semi-pucca	103 (45.2)	1	

In the present study, majority of the students knew that menstruation was a normal physiological process. Kamath *et al.*,^[9] in Udipi taluk reported that 72.2% (n = 195) of urban and 68.9% (n = 193) of rural adolescent girls knew that menstruation was a physiologic process. Yasmin *et al.*^[7] found that 72.8% of respondents knew menstruation to be a physiological process. This finding is consistent with the present study.

The present study showed that in the majority of the respondents knew that the source of menstrual blood is urinary tract. Only 28.3% of the study population had a

correct knowledge about source of menstrual blood which was uterus.

A study done by Singh A, Bhandari A *et al.*,^[10] at villages of khirsu block of Gharwal found that 32% girls reported uterus as the organ from which the menstrual blood comes. Almost similar type of findings was elicited by Kamath *et al.*^[9] in a study done in Udipi taluk. These findings are consistent with the present study. Another study done in a rural area of West Bengal by Yasmin *et al.*^[7] elicited that 63.3% of the respondents knew bleeding occurs from the uterus. These findings are not consistent with the present

study. The study has been done in higher age group which may be the reason for the greater percentage of the girls correctly knowing the source of menstrual blood.

In the present study, the percentage of the students restricting religious activities was much more. The difference in study settings may be the cause. Another study done by Ray *et al.* [3] in a rustic territory in West Bengal evoked that limiting acrid nourishment and not visiting sanctuary have been the most widely recognized confinements seen by the young ladies. This finding is pretty much reliable with the present examination.

In the present examination, in the two schools, dominant part of the investigation populace utilize both sterile napkin and material. An examination done by Damor and Kantharia [5] among immature school young ladies in a urban setting inspired that 52.34% utilized just sterile napkins as menstrual permeable while 44.53% utilized both fabric and cushion. This finding is reliable with the present examination. Another investigation done by Singh *et al.* [10] at the towns of Khirsu square of Gharwal inspired that just 38% young ladies utilized sterile cushions amid period and 63.7% young ladies dried their garments toward the edge of the house..

Be that as it may, Yasmin *et al.* [7] in an institution-based think about under the urban field practice zone of Medical College Kolkata announced that 82.3% of the immature young ladies utilized sterile cushions just, and 15.7% of the respondents utilized old washed fabric. This finding is not quite the same as the present examination. Diverse examination setting might be the reason. Jogdand and Yerpude [6] in a community-based cross-sectional think about in a urban ghetto territory found that 78.99% young ladies were limited to go to religious events amid period.

Jaikhani [1] in a cross-sectional consider done in urban settings detailed that critical relationship of training of the moms of adolescents was found with different absorbent materials used during menstruation and reuse of cloth after washing at $P < 0.05$. This finding is consistent with the present study.

Conclusion

Menstrual hygiene among the study population was found to be poor. Improving education level of the mothers can go a long way in improving menstrual hygiene practice.

Adolescent girls in rural area are the most deprived and underprivileged. They are also at risk of having incorrect and inadequate perceptions and unhealthy practices. Adolescence being the major receptive period, if appropriate, adequate health education is given then these adolescent girls at this tender age will remain as healthy as their richer counterparts. Since they will practice healthy behavior, they will also generate the correct message when they have their own family. In this way, there will be a successful implementation of correct habit, culture, practice regarding menstruation and menstrual hygiene at individual, family, and community level for years to come.

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