

Comparison of Menstrual Hygiene Awareness and Practices among School going Adolescent Girls of Government and Private Schools

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ABSTRACT

Introduction: Menstruation is an important milestone in a girl's life, which marks the beginning of her reproductive life. Awareness about menstrual hygiene is a vital aspect of health education among menstruating girls to avoid insufficient and incorrect information regarding menstruation.

Aim: To find the awareness and their hygiene practices about menstruation among adolescent girls in government and private schools.

Materials and Methods: A descriptive cross-sectional study was conducted among 200 adolescent girls of 9th to 12th standard of government and private schools of Rewa, Madhya Pradesh, India for four months from June 2019 to September 2019, after obtaining informed consent from their parents and principals of respective schools, with the help of a pretested and semi-structured

questionnaire. Data were analysed statistically by simple proportions. Chi-square test was applied to find the association between the variables.

Results: Mean age of the participant girls was 15.82±1.34 years. An 84.88% of girls of private schools had heard about menstruation before menarche, 96.5% girls of private schools and 87.7% girls of government schools knew menstruation is a normal phenomenon. Hygienic practices are better in private school's girls than government school. Study participants of government schools experienced more restrictions than private school girls.

Conclusion: Awareness about menstrual health among adolescent girls was less, so it is essential that health professionals and officials of health must give family education and trained teachers about factors affecting the reproductive health of girls.

Keywords: Awareness regarding menstruation, Menarche, Reproductive health, School going girls, Type of school

INTRODUCTION

Menarche marks the onset of the reproductive phase of a girl's life. During puberty, the physical changes occur which transform the body of a child into an adult with changes in body size and shape [1]. Menstruation starts in the girl at an average age of 13 years and is called menarche and on average, continues menstruating till age of 51 years, which is called as menopause [2]. India has over 355 million menstruating women and girls, but millions of them across the country face bad experiences with Menstrual Hygiene Management (MHM) [3]. Girls receive their gynaecological information from their mothers, religious books, older sisters or a peer. However, such information is usually given after menarche rather than before. Girls with adequate and proper knowledge regarding menstruation can understand that it is a natural phenomenon [1]. Insufficient sanitary practices associated with menstruation are not washing genitalia regularly, using unclean cloth, etc., during menstruation has been associated with serious ill health ranging from genital tract infections, urinary tract infections, and bad odour [4-6] and future long term ill effects like premature births, stillbirths, miscarriages, infertility, toxic shock syndrome, carcinoma cervix as a complication of recurrent reproductive tract infections [7]. Therefore, correct knowledge about menstruation after primary education to girls may improve safe practices and should help in mitigating the suffering of many of them.

In India, many women experience restrictions on cooking, work activities, bathing, worshipping and eating certain foods. These restrictions are due to people's misperception and social taboos regarding menstruation. By educating both males and females regarding menstruation, we can overcome these false beliefs and taboos [8]. According to a study, in India, one-fourth woman in the reproductive age group has any one type of Reproductive Tract Infections (RTIs) [9]. The prevalence rate of RTIs in various states

of India was 19-71% [10] and only 36% of women in India use sanitary pads during periods [11]. In India, as per School Education Statistics, the Gross Enrolment Ratio (GER) at classes I-V (6-11 years) is 100.7 for girls, it falls to 97.6 in classes VI-VIII (11-14 years) [12]. A contributory factor has been the lack of adequate toilet facilities at schools, lack of access to modern menstrual hygiene products and the reluctance of parents to send girls to school on account of menstrual health issues [13,14].

Rewa is a developing city. This study attempts to throw some light on awareness and practices regarding menstrual health among adolescent school going girls of the city and made a comparison between them. The present study was conducted, among adolescent school going girls in government and private schools to assess the level of awareness regarding menstruation and their menstrual hygiene practices.

MATERIALS AND METHODS

This community based observational, cross-sectional study was carried out among the school going adolescent girls of Rewa for four months from June 2019 to September 2019. A total of 200 adolescent girls aged between 10-19 years, were selected using a multistage random sampling technique. Ethical approval was taken from the Institutional Ethical Committee (IEC) with ethical clearance number 9457.

Sample size calculation: This study was conducted among school going girls of class 9th to 12th. Schools were selected by random sampling; one government school and one private school in Rewa city. Convenient sampling was used to take sample size 200. In this way, data were taken from a total of 200 girls.

Inclusion criteria: Adolescent school girls studying in class 9th-12th standard, who had attained menarche and was willing to answer and consent.

Exclusion criteria: Adolescent school girls and/or the parents who refused to give consent for the study and who did not attain menarche.

Data Collection

Multistage random sampling used for selection of schools from list of schools then selection of students from school attendance register. First of all, a list of all higher secondary schools was obtained in Rewa city from School Education Department District Education Office (DEO).

Study Procedure

In Rewa, total of 12 Government Higher Secondary schools, 52 Private Higher Secondary schools and one residential schools are available. To get a representation of all section of the community two government schools, two private schools were selected randomly and one residential school (which is the only residential school presented in Rewa) were taken. Total of 200 girls of 9th to 12th standard were selected by, from their school attendance register.

Pretested, semi-structured proforma was used to collect the data after obtaining permission from principals of respective schools and informed consent of parents after due explanation of cause, methods, and implication of the study. Proforma contained total of 25 questions, regarding their socio-demographic profile, knowledge and practices regarding menstruation, imposed restrictions, hygiene during menstruation and prepared in Hindi and English language [Annexure-1]. It was prepared with the help of the faculty of the Department of Community Medicine, Shyam Shah Medical College, Rewa, Madhya Pradesh, India. The validity of the questionnaire was checked by a pilot study, done on 50 subjects other than the sample size. The reliability score was 0.75. Confidentiality and anonymity was maintained for the data collected throughout the study. After data collection, correct information regarding menstrual health was given to girls and queries were solved.

STATISTICAL ANALYSIS

Data were collected, compiled and analysed using MS excel and percentages for qualitative variables and mean and Standard Deviation (SD) for quantitative variables was obtained. Chi-square test was applied wherever necessary to know the association between variables. The value of $p < 0.05$ was considered statistically significant.

RESULTS

[Table/Fig-1] depicts that out of 200 study participants, 114 (57%) adolescent study participants studied in government schools and 86 (43%) in private schools. Maximum, 80 (40%) of the study participants studied in class 10th and 153 (76.50%) belonged to 15 to 17 years of age group with mean age of 15.82 ± 1.34 years. Among all the study participants, maximum belonged to Hinduism (175, 87.5%), regarding education 153 (76.5%) mothers of study participants were literate, in which 126 (63%) were educated up to higher secondary and above. A 142 (71%) mother of the study participants were housewives. Taking socio-economic status [15] into consideration, a maximum, 65 (32.5%) of the study participants belonged to the upper middle class followed by 50 (25%) of the upper class and 11 (5.50%) lower class.

S. No.	Parameters	Study participants, N=200 (%)
Type of school		
1	Government	114 (57)
2	Private	86 (43)
Education standard		
1	9 th Class	36 (18)
2	10 th Class	80 (40)
3	11 th Class	51 (25.5)
4	12 th Class	33 (16.5)

Age group (years)		
1	12-14	31 (15.5)
2	15-17	153 (76.5)
3	18-19	16 (8)
The mean age of study participants was 15.82 ± 1.34 years		
Religion		
1	Hindu	175 (87.5)
2	Muslim	18 (9)
3	Others	7 (3.5)
Mother's education		
1	Graduate and above	78 (39)
2	Up to higher secondary	48 (24)
3	Up to primary school	27 (13.5)
4	Illiterate	47 (23.5)
Mother's occupation		
1	Professional	16 (8)
2	Service (Government/Private)	23 (11.5)
3	Business	13 (6.5)
4	Housewife	142 (71)
5	Other's	6 (3)
Socio-economic status (according to modified BG prasad scale, updated 2020) [15]		
1	Class I- Upper class	50 (25)
2	Class II- Upper middle class	65 (32.5)
3	Class III- Middle class	44 (22)
4	Class IV- Lower middle class	30 (15)
5	Class V- Lower class	11 (5.5)

[Table/Fig-1]: Distribution of study participants according to the type of school and their socio-demographic characters.

An 80% of participants in the present study experienced menarche between the ages of 12-14 years. Minimum age of menarche was 10 years and maximum of 17 years. Mean age of menarche was 13.24 ± 1.20 years [Table/Fig-2].

Age of menarche (in years)	Number (%)	Mean±SD
<12	7 (3.5)	13.24±1.20
12-14	160 (8)	
>14	33 (16.5)	

[Table/Fig-2]: Distribution of study subjects according to age of menarche.

[Table/Fig-3] shows 84.88% of study participants of private school heard about menstruation before menarche (compared to 56.14% of government school students). In the context of knowledge of the source of menstrual blood, study participants of the private schools were more aware and there was a significant association ($p=0.05$).

Parameters	Type of school		χ^2 value	p-value
	Government (114) (%)	Private (86) (%)		
Have you heard about menstruation before menarche				
Yes (137)	64 (56.14)	73 (84.88)	18.769	0.00001 S
No (63)	50 (43.86)	13 (15.12)		
Is menstruation a disease?				
No (183)	100 (87.7)	83 (96.5)	4.872	0.027 S
Yes (17)	14 (12.3)	3 (3.5)		
Menstruation by pregnant women				
No (164)	90 (78.9)	74 (86)	1.674	0.196 NS
Yes (36)	24 (21.1)	12 (14)		
Menstruation stops at the particular age				
No (17)	9 (7.9)	8 (9.3)	0.125	0.724 NS
Yes (183)	105 (92.1)	78 (90.7)		

From where does menstrual blood originate?				
Uterus (110)	56 (49.12)	54 (62.79)	5.9	0.05 S
Other (vagina, urethra etc.) (38)	28 (24.56)	10 (11.62)		
Not Known (52)	30 (26.31)	22 (25.58)		

[Table/Fig-3]: Association of knowledge about menstruation with the type of school.
NS: Not significant; S: significant

[Table/Fig-4] shows study participants of private and government schools use sanitary pads and reuse absorbents in equal proportion and there was non significant association between them ($p=0.642$). Menstrual practices were better in private school like changing absorbents twice a day, throwing them in the dustbin, using soap to wash genitalia, cleaning of genitalia >3 times/day and bath daily. Significant association has been found between frequency of changing absorbents, disposal method and frequency to clean genitalia with the type of school ($p<0.05$). Out of 184 sanitary pads users, the main source of buying sanitary pads was general store. A 38.46% of govt. school girls got it from govt. supply (ASHA, Anganwadi centre). Most of the girls were not using sanitary pads because non availability of sanitary pads and felt uncomfortable.

Parameters	Type of school		χ^2 value	p-value
	Government 114 (%)	Private 86 (%)		
What do you normally use during your period?				
Sanitary pad	97 (85.1)	77 (89.5)	3.378	0.642 NS
Cloth	8 (7)	5 (5.8)		
Menstrual cup+Tampon	2 (1.8)	1 (1.2)		
Sanitary pad+Cloth	7 (6.1)	3 (3.5)		
Do you reuse it?				
No	109 (95.61)	81 (94.18)	0.21	0.646 NS
Yes (cloth, menstrual cup)	5 (4.39)	5 (5.82)		
How many times do you change absorbents?				
≥3 times/day	9 (07.89)	14 (16.28)	26.186	<0.001 S
2 times/day	50 (43.86)	60 (69.77)		
Once	55 (48.25)	12 (13.95)		
How do you dispose of it?				
Burn	40 (35.09)	19 (22.09)	6.26	0.044 S
Dustbin	74 (64.91)	65 (75.58)		
Flush	0	2 (02.33)		
What do you use to clean genitalia?				
Plain water	32 (28.07)	10 (11.63)	7.988	0.004 S
Soap	82 (71.93)	76 (88.37)		
How many times do you clean genitalia?				
Once	12 (10.53)	10 (11.63)	6.375	0.041 S
2 times	33 (28.95)	12 (13.95)		
≥3*	69 (60.52)	64 (74.42)		
*Satisfactory: Frequency of cleaning of external genitalia is ≥3				
Do you take bath daily during a period?				
Yes	100 (87.71)	82 (95.35)	3.844	0.061 NS
No	14 (12.29)	4 (4.65)		

[Table/Fig-4]: Association of practices followed by study participants with type of schooling.
NS: Not significant; S: significant

[Table/Fig-5] shows that out of 184 sanitary pads users, the main source of buying sanitary pads was general store. A 38.46% of govt. school girls got it from govt. supply (ASHA, Anganwadi centre). Most of the girls were not using sanitary pads because non availability of sanitary pads and felt uncomfortable [Table/Fig-6].

Source of sanitary pads (n=184)	Government 104 (%)	Private 80 (%)
Chemist shop	10 (09.62)	26 (32.5)
General store	54 (51.92)	46 (57.5)
Government supply	40 (38.46)	8 (10)

[Table/Fig-5]: Association of the source of sanitary pads with the type of school.
Chi-square: 26.403, p-value <0.001

Reason for not using sanitary pads	N=16 (%)
Not available (nearby)	5 (31.25)
Feeling costlier	3 (18.75)
Not comfortable	5 (31.25)
Using other things (menstrual cup and tampon)	3 (18.25)

[Table/Fig-6]: Reason for not using sanitary pads among adolescent girl.
Chi square -1.7, p-value is 0.631, this association is not significant

[Table/Fig-7] depicts that more study participants of government school faced restrictions during menstruation. A 29.82% of study participants of government school and 11.63% of private school missed school during periods. The majority of study participants (85.96%) of government school did not go to worship places due to periods, compared to 65.12% study participants of private schools. It shows a significant association between restrictions in going out, to carry out the daily activity and going to worship place with the type of school.

Parameters	Type of school		χ^2 value	p-value
	Government 114 (%)	Private 86 (%)		
In a month do you miss school because of your period?				
No	80 (70.18)	76 (88.37)	9.459	0.002 S
Yes	34 (29.82)	10 (11.63)		
Does your period make you unable to carry out daily activities?				
No	42 (36.84)	10 (11.63)	16.198	0.00005 S
Yes	72 (63.16)	76 (88.37)		
Does your period make you unable to go to a worship place?				
No	16 (14.03)	30 (34.88)	12.031	0.0005 S
Yes	98 (85.96)	56 (65.12)		

[Table/Fig-7]: Association of restrictions during menstruation with the type of schooling.
NS: Not significant; S: significant

DISCUSSION

In the present study, maximum number (76.5%) of the study subjects belonged to the middle adolescents age group (15-17 years) and the mean age of the study subjects was 15.82 ± 1.34 years. Similar findings were also found by Udayar SE et al., Hema Priya S et al., and Juyal R et al., [16-18]. In present study, the maximum study subjects were Hindu (87.5%), followed by Muslims (9%). Similar findings were also observed by Udayar SE et al, in Andhra Pradesh, maximum girls were Hindu (83.3%) followed by Muslims (10.6%) [16]. Also, in the study conducted by Sharma S et al., in Delhi, similar findings were seen [19]. In the present study, most of the mothers 76.5% were educated, out of which 13.5% were educated up to primary school, 24% up to higher secondary and 39% graduated and above while 23.5% had no formal education. According to study by Mathiyalagen P et al., which was done in Union territory India, 30% of mothers were illiterates [20]. In the present study, as per socio-economic status, maximum participants (32.5%) belonged to the upper middle class (class II), followed by the upper class (class I 25%) and the lower middle class (class III 22%), according to Modified BG Prasad Scale, updated 2020 [15]. Findings in the study by Hema Priya S et al., and Mathiyalagen P et al., were contrary to present study in which lower class population was comparatively more than those of middle class [17,20]. This difference may be because of area of study in present study belongs to urban area which comprises better socio-economic status.

In the present study, 87.7% of girls of government school and 96.5% of girls of private school considered menstruation is a normal phenomenon. In relation to the type of school difference was significant ($p=0.027$). In contrast, Sharma N et al., study shows 71.94% of girls from the private school had correct knowledge regarding the process of menstruation in contrast to the girls of the government school where only 48.28% had correct knowledge and the difference was found to be significantly associated [21]. The observed difference may be due to the type of curriculum and knowledge imparted by teachers in respective schools.

In present study, participants of private and government schools use sanitary pads and reuse absorbents in an equal proportion which shows the non significant association between them but in contrast to the study of Kokiwar PR et al., in Hyderabad, 98.9% of the girls belonging to private school reused sanitary napkins compared to 90.8% of the girls belonging to government school [22]. Maximum girls (29.82%) of girls of government schools and 11.63% of private schools missed schools during period. More girls (85.96%) of government school did not go to worship place during menstruation compared to girls of private schools (65.12%). It shows significant association between restrictions in going out, to carry out daily activity and going to worship places with the type of school.

In the present study, frequency of changing absorbents was ≥ 3 times/day in 7.89%, 2 times/day in 43.86% of study participants of government school and 16.28% and 69.77%, respectively in girls of

private schools and the difference was significant. Similar findings in study of Sharma N et al., in Jaipur city were found [21]. The difference between the participants correct practice of frequency of changing pad in government (25.35%) and private school (43.68%) was also found to be significant and the same significant association is found in study of Dixit S et al., in Indore [14].

In present study, the frequency of cleaning genitalia during menstruation was found more satisfactory in girls of private school, and there was significant difference with type of school. In contrast the study of Sharma N et al., in Jaipur city shows that 31.26% students of the private school followed correct practice of cleaning genitalia during menstruation as compared to only 27.16% in government schools, but the difference was not significant [21]. Also, in the study of Kokiwar PR et al., the type of school was not related to good menstrual hygiene practices [22]. The practice of cleaning genitalia is more dependent on the type of school because knowledge given by teachers affects the knowledge of pupils.

In the present study, the main source of buying sanitary pads was general store in 57.50% of private school's girls and 51.92% of government school girls. A 38.46% of government school girls in present study got sanitary pads from government supply also. In a study of Kokiwar PR et al., in Hyderabad, 72.5% girls received the sanitary napkin under the government scheme [22]. Comparison of studies regarding menstrual health among adolescent girls is given in [Table/Fig-8] [14,16-22].

S. No.	Author's name and year	Place of study	Number of subjects	Age of children considered	Parameters assessed	Conclusion
1.	Udayar SE et al., (2016) [16]	Andhra Pradesh	293	10-19 years	The majority of the girls attained menarche at the age of 13 years, and 82.3% are having a regular menstrual cycle. 78.5% used sanitary pads and disposal of absorbents was by throwing them into the dust bins in 58.0% of people. Source of information about menstruation before menarche for almost all of them was mother restrictions during menstrual period was seen.	Among the study subjects, proper knowledge, attitude and hygienic practices in menstruation were not seen. Suitable planned health education and adequate sanitary facilities was needed.
2.	Hema Priya S et al., (2017) [17]	Rural Puducherry	528	10-19 years	89.2% of the adolescent girls were using sanitary pads fresh and reusable cloths were used by 6.6% and 4.2%, respectively. 65.3% girls changed their soaked absorbent 2-5 times in a day. 60.8% of the girls disposed of their used absorbent by burying or burning. 67.9% girls were washing genitalia during micturition.	Even though sanitary pad users were high, unhygienic practices were noticed, so more emphasis is needed to be given on awareness of menstrual hygiene practices among adolescent girls.
3.	Juyal R et al., (2014) [18]	District of Dehradun, Uttarakhand	453	9 th to 12 th standard	64.5% of girls (71.1% Rural and 57% Urban)-aware of menstruation prior to the menarche. Awareness among rural girls > urban girls. First informant in about 31.8% girls- friends. Correct reason and source of bleeding during menstruation was not known to most of them. 38.4% of adolescent girls (48.1% Rural and 27.6% Urban)-used sanitary napkins, while 30%-used cloth.	Need to educate the girls about menstruation, its importance and hygiene maintenance; to lead a healthy reproductive life in future.
4.	Sharma S et al., (2017) [19]	Delhi	85	10-19 years	The majority was between 15 to 19 years. The mean (\pm SD) age of menarche- 11.4 \pm 5.3 years. 46.4%- girls practised different restrictions during menstruation. 85.9%- used sanitary pads during menstruation.	It is imperative to strengthen the Menstrual Hygiene Management (MHM) programs. Multiple strategies such as education on reproductive health and menstruation provided in schools, media campaign's and improving water and sanitation in schools.
5.	Mathiyalagen P et al., (2017) [20]	Union territory, India	242	12-18 years	The mean age for menarche- 12.99 \pm 0.9 years; 51.7%- not aware of menstruation before attaining menarche; 71.5% -not known about the cause and 61.2% -not known source of the menstrual bleeding, 78.1%-used only sanitary pads whereas 21.9% used both old clothes and sanitary pads as the absorbents. Unsatisfactory cleaning of the external genitalia was practised by 12% of respondents. dysmenorrhoea in 82.2% 25.2% -excessive genital discharge. 88.4%- reported any one of the reproductive morbidities and only 37.4% sought medical treatment.	Underscored the necessity of adolescent girls to have adequate and precise knowledge about menstruation before menarche. Proper menstrual hygiene practices (which could be imparted at earlier stages of life) can prevent the girls from reproductive morbidities.

6.	Sharma N et al., (2019) [21]	Jaipur	996	10-19 years	80.72% - aware of menstruation before their menarche. 68.07%- used sanitary pad as absorbent material. 34.53% changed the pad at least 3 times or more in a day. 29.21% cleaned the genitalia twice or > 2 times a day. 86.14%- restricted to do religious activities.	Strong need to promote good menstrual hygiene knowledge and practices among adolescent girls. Also improving a mother's knowledge of MHM is useful.
7.	Kokiwar PR et al., (2018) [22]	Telangana	171	8 th to 10 th standard	90.8% of the girls (government school) -used sanitary napkins, 98.9% of the girls (private school) and this difference was statistically significant. There was no significant difference between the girls of two schools relating to sanitary disposal methods. The main source of information related to menstruation mother (74.7%). 51.9%- aware about the government scheme of free distribution of sanitary napkins. 72.5%- received the sanitary napkin under government scheme (who were aware of the scheme).	Mother's education played a significant role in good menstrual hygiene of the daughter. Health education programs should focus on the awareness of the mothers in the community.
8.	Dixit S et al., (2016) [14]	Central India	100	12-16 years	First informant regarding menstruation in case of 70% of girls-Mother (54% in government school and 86% girls in private school). 44% of girls used both soap and water for genital cleaning (60% girls from the government school and 28% from private school) and 56% girls used plain water. 98%-used sanitary pads, 38% girls used the absorbent material for 6-12 hours in which (50% of private school and 16% of government school).	Awareness was higher and better in the private school as compared to government regarding menstrual hygiene.
9.	The present study (2021)	Rewa Madhya Pradesh, India	200	10-19 years	The mean age of the participant girls was 15.82 ± 1.54 years. 84.88% girls of private schools heard about menstruation before menarche, 96.5% girls of private schools and 87.7% girls of government schools knew menstruation is a normal phenomenon. Hygienic practices are good in private school's girls than government school. Study participants of government schools experienced more restrictions than private school's girls.	Awareness about menstrual health among adolescent girls was less, so it is essential that health professionals and officials of the ministry of health should give family education and train teachers about factors affecting the reproductive health of girls.

[Table/Fig-8]: Comparison of studies regarding menstrual health among adolescent girls [14,16-22].

Limitation(s)

As this study was conducted among school going girls of 9th to 12th grades, some young girls of lower classes might have been missed, who had attained menarche. Therefore, further studies can be done without excluding those younger girls, and because of small sample size, results could not be generalised.

CONCLUSION(S)

Present study emphasises that it is not enough to provide sanitary pad to girls, but should be advised on hygiene practices, to abolish the problem of insufficient menstrual hygiene. The education of girl pertaining to the basic knowledge of menstruation and practices during menstruation should be more emphasised in government schools. Teachers should be trained/educated about menstrual health and should transfer this information to girls through focused group discussion in school amongst peers and to parents during parent teacher meeting in school via pictorial and written materials.

REFERENCES

- Mahajan A, Kaushal K. A descriptive study to assess the knowledge and practice regarding menstrual hygiene among adolescent girls of Government School of Shimla, Himachal Pradesh. *Chrimed J Health Res.* 2017;4:99-103.
- file:///D:/THESIS/Menstruation(periodormenstrualcycle)_healthengineBlog.html [accessed on 31/08/20].
- https://menstrualhygieneday.org/wp-content/uploads/2016/04/FSG-Menstrual-Health-Landscape_India.pdf [accessed on 16/01/21].
- Dasgupta A, Sarkar M. Menstrual hygiene: How hygienic is the adolescent girl? *Indian J Community Med.* 2008;33:77-80.
- Mudey AB, Keshwarni N, Mudey GA, Goyal RC. A cross-sectional study on the awareness regarding safe and hygienic practices amongst school going adolescent girls in the rural areas of Wardha District, India. *Global Journal of Health Science.* 2010;2(2):225-31.
- Bhatia JC, Cleland J. Self-reported symptoms of gynecological morbidity and their treatment in South India. *Stud Fam Plann.* 1995;26(4):203-16. PMID: 7482678.
- Bathija GV, Bant DD, Itagimath SR. Study on usage of woman hygiene kit among menstruating age group in field practice area of KIMS, Hubli. *Int Jour of Biomed Res.* 2013;4(2):94-98. Available from: <https://ssjournals.com/index.php/ijbr/article/view/804>.
- Kaur R, Kaur K, Kaur R. Menstrual hygiene, management, and waste disposal: Practices and challenges faced by girls/women of developing countries. *Hindawi. Journal of Environmental and Public Health.* 2018;2018:1730964. 9 pages.
- Global incidence and prevalence of selected curable sexually transmitted infections–2008 [Internet] World Health Organization. World Health Organization. 2014. [cited on 02/09/2020]. Available from: <https://www.who.int/reproductivehealth/publications/rtis/stisestimates/en>.
- Sri Devi B, Swarnalatha N. Prevalence of RTI/STI among reproductive age women (15-49 years) in urban slums of Tirupati Town, Andhra Pradesh. *Health Popul Perspect Issues.* 2007;30:56-70.
- <https://swachhindia.ndtv.com/menstrual-hygiene-day-facts>. [accessed on 16/01/21].
- https://www.education.gov.in/sites/upload_files/mhrd/files/statistics-new/ESAG-2018.pdf [Accessed on 16/01/2021].
- Amirtha G, Premarajan KC, Sarkar S, Lakshmi Narayanan S. Menstrual health-knowledge, practices and needs of adolescent school girls in Pondicherry. *Indian Journal of Maternal and Child Health.* 2013;15(1):4.
- Dixit S, Raghunath D, Rokade R, Nawaz SA, Nagdeve T, Goyal I. Awareness about menstruation and menstrual hygiene practices among adolescent girls in central India. *National Journal of Community Medicine.* 2016;7(6):468-73.
- Debnath DJ, Kakkur R. Modified BG Prasad Socio-economic classification, Updated–2020. *Indian J Comm Health.* 2020;32(1):124-25.
- Udayar SE, Kruthika K, Devi PV. Menstrual hygiene practices among adolescent girls residing in tribal and social welfare hostel in Andhra Pradesh: A Community based study. *Natl J Community Med.* 2016;7(8):681-85.
- Hema Priya S, Nandi P, Seetharaman N, Ramya MR, Nishanthini N, Lokeshmaran A. A study of menstrual hygiene and related personal hygiene practices among adolescent girls in rural Puducherry. *Int J Community Med Public Health.* 2017;4(7):2348-55.
- Juyal R, Kandpal SD, Semwal J. Menstrual hygiene and reproductive morbidity in adolescent girls in Dehradun, India. *Bangladesh Journal of Medical Science.* 2014;13(02):170-74.
- Sharma S, Mehra D, Kohli C, Singh MM. Menstrual hygiene practices among adolescent girls in a resettlement colony of Delhi: A cross-sectional study. *Int J Reprod Contracept Obstet Gynecol.* 2017;6:1945-51.
- Mathiyalagen P, Peramasamy B, Vasudevan K, Basu M, Cherian J, Sundar B. A descriptive cross-sectional study on menstrual hygiene and perceived reproductive morbidity among adolescent girls in a union territory, India. *J Family Med Prim Care.* 2017;6(2):360-65.

- [21] Sharma N, Meena KK, Gaur K, Sharma D. A comparative study of knowledge and practice regarding menstrual hygiene among private and government schools of Jaipur city. *Int J Community Med Public Health*. 2019;6:3689-93.
- [22] Kokiwar PR, Ramesh B, Sumalini Reddy P, Vindhya P, Nischala RH, Sai Komal P. Menstrual hygiene among school going adolescent girls: A comparative study among government and private schools. *Indian Journal of Preventive Medicine*. 2018;6(1):63-68.

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PLAGIARISM CHECKING METHODS: [Jain H et al.]

- Plagiarism X-checker: Aug 08, 2021
- Manual Googling: Nov 24, 2021
- iThenticate Software: Nov 29, 2021 (24%)

ETYMOLOGY: Author Origin**AUTHOR DECLARATION:**

- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **Aug 07, 2021**Date of Peer Review: **Oct 11, 2021**Date of Acceptance: **Nov 29, 2021**Date of Publishing: **Dec 01, 2021****ANNEXURE 1****PROFORMA**

A Study on Menstrual Hygiene Practices and Reproductive Health Awareness among Adolescent School Girls of Rewa, Madhya Pradesh

A. General information:

1. Age of participants:
2. Class:
3. Type of school:
4. Religion:
5. Mother's: Education and occupation
6. Father's: Education and occupation
7. Family income:
and Family member:
8. Have you started your period? Yes No
If yes, then at what age.....

B. Knowledge about menstruation:

9. Have you heard about menstruation before menarche? Yes No
10. Menstruation is a disease (normal phenomenon). Yes No
11. Pregnant women menstruate. Yes No
12. Does women stop menstruating at particular age? Yes No
13. What is the source of menstrual blood? Uterus, vagina/urethra, other

C. Practice during menstruation:

14. What do you normally use during your period? (Please tick your answers) Cloth/Towel Tampon/Purchased sanitary pad/ Menstrual Cup/ Toilet paper/Cotton Mattress.
15. From where you get sanitary pads?
16. Do you reuse it? Yes No
17. Reasons for not using sanitary pads: 1) Not comfortable; 2) Not available; 3) Feeling costlier; 4) others.....
18. How many times you change absorbents in a day? Once, 2 times, >3 times
19. How do you dispose it? Flush, dustbin, burn.
20. What you use to wash genitalia? Plane water/soap/washing powder/other
21. How many times you wash genitalia? Once, 2 time, >3 times
22. Do you take bath daily during menses? Yes No

D. Restriction during menstruation:

23. In a month do you miss school because of your period? Yes No
If Yes, then why:
 - a) Because I am afraid of staining my clothes.
 - b) Because I am afraid of others making fun of me.
 - c) Because periods can make me feel uncomfortable or tired.
 - d) Because there isn't anywhere for girls to wash and change at school.
 - e) Because there is nowhere to dispose of sanitary products.
 - f) Because I use other materials than sanitary pads.
24. Does your period make you unable to carry out daily activities? Yes No
If yes, so which type of activities.....
25. Does your period make you unable to go to a worship place? Yes No