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Indigenous Research Study to Elucidate the Barriers of Menstrual Hygiene in Adolescent School Girls of Kolar Area in Bhopal City

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ABSTRACT

Background: Menstruation is an eternal phenomenon, running since evolution still we have poor grip over medical impact associated with it which results into adverse health effects.

Methods: This observation cross sectional study was undertaken to analyze various factors related to menstruation. Study was done for 7 months involving 300 participants.

Result: Findings were tabulated as number & percentage of distribution of study population in accordance with socio demographic, knowledge, and practice based factors.

Conclusion: The study has highlighted the need of adolescent girls & their informant channels of communication to have correct information about menstruation and hygienic practices to be followed during menstruation.

Keywords: Adolescent School Girls, Menstrual Hygiene Management (MHM), Water, Sanitation & Hygiene (WASH) Facilities, Bhopal

INTRODUCTION

Stalin says "Not a single great movement of the oppressed in the history of mankind has been able to do without the participation of women. Women, the most oppressed among the oppressed, never have or could stand aside from the broad path of the liberation movement". But the revolutionary struggle for women emancipation inevitably contain many twists and turns like several types of associated morbidities.Globally, approximately 52% of female population (26% of total population) is of reproductive age and most of them are menstruating every month.[1] Menstruation is an eternal phenomenon, running since evolution still we have poor grip over medical impact associated with it which results into adverse health effects.

Poor water, sanitation and hygiene (WASH) facilities in schools, lack of sanitary protection material, and improper menstrual hygiene management (MHM) cause girls to experience menstruation as shameful and uncomfortable phenomena.[2] Insufficient MHM may result in urinary and genital tracts infections because plug of mucus normally found at opening of cervix is dislodged allowing blood to pass out of body creating pathway for bacteria to travel back into uterus and pelvic cavity. Around 14% of women in India were reported suffering from various menstrual infections.[3] Poor MHM has accounted to 27% of the world's cervical death in India.[4] Of 113 million adolescent girls in India 68 million attend about 1.4 million schools, with poor MHM practices and cultural taboos considered to be impediments to their school attendance.[2] According to UNICEF India experiences dropout rate of more than 40% as in India66% of girl's school do not have functioning girls toilet.[4]

Due to indirect effect of menstruation on gender discrepancy and school absenteeism, less concentration and participation, fear of using latrines, poor MHM may gravely hamper the realization of Millennium Development Goals (MDG) -2 on universal quality education and MDG -3 on gender equality and women empowerment.[5] To overcome these problems at some places there are female friendly latrines installed with eco-friendly incinerator and water within latrine cubicle, changing blocks and are also accessible to girls and women with disabilities,[3] but according to the requirement it is only a few.

Puberty in girls is marked by many important changes including appearance of secondary sexual characters and most importantly the appearance of menarche. In country like India where females are not treated equally as males and issues like female feticide are common, menstruation is considered as taboo and those undergoing menstruation are considered as impure and face various restrictions. There are many misconceptions and lack of knowledge regarding menstruation which is passed from generations to generations which leads to adverse health outcomes. As there is scarcity of data and literature on this topic from ours area of country hence we prioritized to conduct this study in order to get the real scenario.

AIMS AND OBJECTIVES

Study was undertaken to assess the knowledge, attitude and practices regarding menstruation amongst adolescent girls of government school.

MATERIALS AND METHODS

After getting approval from Ethical Committee of L.N. Medical College & J.K. Hospital, Kolar, Bhopal this observational cross sectional study was carried out from the month of January to July 2017 at two government schools of Bhopal city amongst adolescent girls who have attained menarche.

Inclusion criteria-: From the previous studies it was revealed that mean age of menarche was 13.2 years. So, All adolescent girls of more than or equal to 13 years of age who have attained menarche and are studying in higher secondary school were included in the study.

Exclusion criteria: Absentees on the day of survey and girls not ready to fill questionnaire were excluded from the study.

Method of data collection-: A self-administered, semi structured, open/closed ended questionnaire was used as epidemiological tool. Questionnaire was developed after review of literature and questions were framed on the basis of measured parameters of similar previously performed studies at different geographical locations.

Sample size estimation-: Sample size estimation is done by using the qualitative formula sample size (n) $=4\times p\times q/l^2$. Where, p stands for prevalence which is 26%, q=100-p, l stands for allowable error which we have taken 5% in our study. So using the above formula calculated sample size was 308. So a convenience sample of 300 was taken for the study, among school going adolescent girls studying in class 8^{th}-12^{th} standard.

A self-administered, semi structured questionnaire was used as epidemiological tool which was framed in both English and Hindi language. A written consent was taken from school authorities, parents and students. All the girls were asked to fill the given questionnaire which included socio-demographic profile, menstrual profile etc. Multiple choice questions were included.

Data was tabulated as frequency in number & percentages. Continuous variables were summarized as mean ± standard deviation. Categorical variable were expressed as percentage. Data analysis was done with help of Epi info and Microsoft Excel.

OBSERVATION AND RESULTS

The mean age of our study population is 15.14± 1.35 years while their age range was 13 to 18 years.

Table 1: Socio demographic profile of study population (N= 300)

Variable	N (%)
Age	
13	37(12.33)
14	69(23.00)
15	77(25.67)
16	56(18.67)
17	54(18.00)
18	7(2.33)
Religion	
Hindu	275(92)
Muslim	25(8)
Socioeconomic status	
Middle class	18(6)
Lower middle	29(8)
Low class	35(12)
Below poverty line	223(74)
Mother education	
Illiterate	156(52)
Primary	82(27)
Secondary	47(16)
Higher secondary	12(4)
Graduate	3(1)
Mother occupation	
Housewife	165(55)
Working	135(45)

Table 2: Menstrual knowledge in study population (N=300)

Variable	Participants (%)
Premenarche knowledge	
Yes	38(12.6%)
No	262(87.33%)
Post menarche source of knowledge	
Mother	254(85%)
Sister	29(10%)
Friends	14(4%)
Others	3(1%)
Cause of menstruation	
Hormonal	65(22%)
Natural	150(50%)
Physical	85(28%)
Source of bleeding	
Uterus	5(2%)
Vagina	63(21%)
Bladder	90(30%)
Abdomen	2(1%)
Don't know	140(46%)
Nature of cycle	
Regular	254(84.6%)
Irregular	46(15.3%)
Duration of menstrual cycle	
Less than 25 days	47(15.67%)
25-28 days	178(59.33%)
28-35 days	41(13.67%)
>35 days	34(11.3%)
Consider decrease in blood vol. after menstruation	
Yes	155(51.67%)
No	145(48.33%)
Consider menstrual blood unhygienic	
Yes	242(80.67%)
No	58(19.33%)

The mean age at menarche was 13.3 ±0.88 years. Regarding facilities and condition of girl's toilet in schools: - Survey was conducted in two schools and both the schools had napkins available for emergency situation. In one school the incinerator was in process of installation while other school didn't have incinerator. There was no menstrual hygiene session in both the schools. The girls toilet in both schools were separable from boys toilet and were not accessible to girls with disabilities, all the toilet compartments were lockable from inside and had water supply while soap was not available in toilet for washing hands.

DISCUSSION

Sanitary napkins prevalent globally nowadays present perfect example of women emancipation.[6] Over the years treatment has been applied to increase absorbency and acceptability. It contains synthetic material like polyacrylate blocking wetness and temperature causing growth of yeast and bacteria. Dioxin is used in production of sanitary napkins which is carcinogenic.[7]

The widespread use of sanitary napkins by urban and growing rural market for these has increased the burden of menstrual waste which is growing every day. Around 36 million women in India use sanitary napkins with 9000 tons of waste (432 million pads) annually,[8] this ever growing menstrual waste has become a menace not only to women but to whole society. Unsafe disposal of used sanitary material causes issues related to manual scavenging. Less attention to afterlife of soiled napkin create wrong impact on health and environment.

In our study, Kuppuswamy scale was used to determine socioeconomic status of the participants. It was observed that participants with poor socio demographic profile were more susceptible to morbidities associated with poor menstrual hygiene.Our studies mean age is comparable to study conducted in Rural Kheda district of Gujarat in 2015 by Dhara J Prajapati et al; where mean age of menarche was 13.44± 1.35 years, age range being 11 -15 years.[5] Another comparable study was conducted in Saoner, Nagpur by Subhash B Thakre et al. in 2010 highlighted that mean age of menarche was 12.85± 0.867 years, age range being 12-17 years.[14] Another study (Teklemariam Gultie) in 2014 regarding age of menarche and knowledge about menstrual hygiene management among adolescent girls in Amhara province, Ethiopia revealed that mean age at menarche was 14.1± 1.4 years.

Like our research work, study by P. Seenivasan et al in Chennai in 2016 reported that 40% girls had premenarche knowledge while mother was source of post menarche knowledge in 47.7% cases.[18] Another comparable study by P Verma et al. in Varanasi (2013) reported that 58.3% study population had premenarche knowledge while mother was informant of post menarche knowledge in 41.66% girls.[13]

A study in Rural Kheda district of Gujarat by Dhara J Prajapati et al. in 2015 observed that 47% girls believed menstruation to be natural process while 32% considered it as hormonal process; 72.5% girls were unaware of source of menstrual bleeding while 27.5% girls were aware that uterus was source of menstrual bleeding; 76% girls believed menstrual blood was impure.[5] Our study results are comparable.

Our study variable of menstrual cycle duration is almost equal to study by Dhara J Prajapati et al in Kheda, Gujarat in 2015 in which 41.5% girls had 28-35 days cycle followed by 25-28 days (34%) while menstruation was found to be regular in 69.5% girls.[5]

Table 3: Practices followed during menstruation (N=300)

Variables	Freq(%)
Type of material used during menstruation	
Sanitary napkin	101(34)
Old cloth	67(22)
New cloth	13(4)
Sanitary pad and cloth	119(40)
Reason for not using sanitary pad	
Cost	42(36)
Difficulty in disposal	5(4)
Lack of knowledge	70(60)
If due to cost, is pad supplied by government	
Yes	0(0)
No	300(100)
Frequency of change	
Once a day	87(29)
Twice a day	155(52)
Thrice a day	40(13)
More than thrice	18(6)
Insertion of unclean material into vagina during menstruation	
Yes	0(0)
No	300 (100)
Wiping from back to front after defecation/urination	
Yes	162(54)
No	138(46)
Wash hand after changing absorbent	
Yes	292(97)
No	8(3)
Ablution of washing ext. genital during menses	
Water	219(73)
Soap and water	81(27)
Water and antiseptic	0(0)
Bath daily during menstruation	
Yes	282(94)
No	18(6)
Method of disposal	
Disposing in open	51(17)
Disposing in dustbin	148(49)
Flushing in toilet	1(0)
Burying in pit	59(20)
Burning	32(11)
Washing and reusing	3(1)
Disposing in open& washing	2(1)
Other	4(1)
Restriction during menstruation	
Yes	143(48)
No	157(52)
School absenteeism during menstruation	
Yes	70(23)
No	230(77)
If absent ,reason	
Physical discomfort/pain	37(53)
Difficulty in school	3(4)
Fear of staining clothes	29(42)
Restrictions imposed	1(1)

The study by K. Sathyamurthy in 2014 revealed that around 46.67% girls used cloth as menstrual absorbent and they reuse the cloth after washing it with soap and water and discarded the cloth by burning it. 15.67% girls used sanitary napkins. Among those who used cloth, 65.70% were found to be suffering from genital infections as compared to 12.3% in those who used sanitary napkins.[10]

Our study findings are in line with the study by D. Shanbagh et al in Bangalore in 2012 in which 21.2% study population used both sanitary napkin and cloth as menstrual absorbent,44.1 % used only sanitary pads while 34.7% used cloth as menstrual absorbent.[12] In study by Dhara J Prajapati et al in Gujarat in 2015; 89.5% girls used cloth during menstruation.[5]A study by P Verma et al in Varanasi in 2013 highlighted that 50.8% girls used sanitary pad as menstrual absorbent while 49.16% used old plain cloth.[13]The most common reasons for not using sanitary pad were lack of knowledge and cost which are similar with findings of study in Varanasi by P Verma et al in which reason for not using sanitary pad was feeling uncomfortable (4.28%), high cost 71.8%, unavailability 6.3% and shyness 7.9%.[13]

A study in Nagpur by Tarhane S et al in 2014 observed that 1.3% girls changed absorbent once a day, 35.4% twice a day, 40.5% thrice a day & 18.9% more than thrice [9]while study P. Seenivasan et al in Chennai (2016) showed that 37.6% changed pads 3-4 times a day, 34.4% changed 2-3 times a day & 28% changed 1-2 times a day.[18]Our results are more or less comparable.

In our study 73% girls used only water for washing external genitalia during menstruation while 27% used soap and water; 54% girls had the habit of wiping from back to front following defecation/urination; 97% girls washed hand with soap after changing sanitary napkin; 94% of study population took bath daily during menstruation. A study by P. Seenivasan et al in Chennai in 2016 showed that 47.6% girls used only water & 37.4% girls used both soap & water to clean their external genitalia during menstruation.[18]Similar study by Juyal R et al in Uttarakhand in 2012 concluded that 94% girls washed external genitalia only with water during menstruation while and 64% girls were bathing daily during menstruation.[15]Study in Pondicherry in 2014 (Abhijit VB, ShibShekhar-Datta , Karthiga V) regarding perception and practices regarding menstruation among adolescent girls in Pondicherry revealed that 77% girls used sanitary pads,100% girls took bath daily during menstruation and 43% girls washed external genitalia by soap and water during menstruation.[16]

The main source of information about menstrual hygiene management was teacher about 41.3%. 90.7% girls had high level of knowledge about menstrual hygiene management.[17]A study by Tarhane S et al in Nagpur in 2014 highlighted that 41% girls washed genitals only with water, 40% girls with soap and water and 19% girls with water and disinfectant. [9]

Table 4: Prevalence of infections during menstruation (N=300)

Variable	Freq (%)
Heard of reproductive tract infection	
Yes	0(0)
No	300(100)
Symptom	
Itching in genital area	44(15)
Burning in genital	31(10)
Frequent urination	18(6)
Rashes in genital	10(3)
Both itching and burning	13(4)
Both itching and rashes	2(1)
Other	8(3)
No infection	174(58)

Regarding disposal 49% girls disposed menstrual waste in dustbin, 17% disposed in open, 20% buried in pit, 11% burnt the menstrual waste, 1% washed & reused it, 1% both disposed in open and washed & reused, 1% followed other method. In study by P. Seenivasan et al in Chennai in 2016- 3.6% disposed of pads burning, 72.6% in dustbin and 12.2% flushed in toilet. [18]Another comparable study by Haftu B et al in Mekelle town, Tigray, Ethiopia in 2016 concluded that 4.8% dumped sanitary material into open field, 61.1% disposed into latrine, 2.4% disposed into dustbin & 9.5% didn't dispose it.[11] In our study the most common method was disposal in dustbin but it adversely affects the environment so according to us the preferred method should be treatment of these menstrual absorbent in incinerator but neither the residing locality of girls nor girl's school had incinerators installed. Study by P. Seenivasan in Chennai in 2016 shown that 100% study population faced restrictions during menstruation[18] while in study in Varanasi by VermaP et al (2013) restrictions were imposed on 82.5% girls.[13]In a study by Tarhane S et al in Nagpur (2014) 14% girls were absent from school during menstruation 28.6% due to dysmenorrhea and 42.9% due to excessive bleeding.[9]In our study restrictions were imposed on relatively lesser chunk.

In our study the most common problems/ infections during menstruation was itching in genitalia (15%), burning sensation in genitalia (10%), frequent urination (6%), rashes in genitalia (3%), both burning & itching in genitalia (4%), other allergic problem (3%) &both itching& rashes (1%). A study in Kheda, Gujrat by Dhara J Prajapati et al in 2015 the most common menstrual problem was dysmenorrhea 62%, followed by backache (26%) and headache (18.5%).[5]

While conducting our study we also distributed information leaflet to all the participants after they filled the questionnaire. We informed them physiology of menstruation; clean hygienic practices like using only sanitary pads, changing pads thrice a day etc.; wrapping the menstrual waste in a paper while disposing.

Government should include training sessions for teachers so that they also have correct knowledge about menstrual hygiene management to guide girls. Besides this the Government of India runs various schemes for adolescent girls on menstrual health like KishoriSwasthyaYojana, Rajiv Gandhi scheme for empowerment of adolescent girls & National Population Policy 2000 (revised one also), firstly these schemes are not implemented properly and secondly the beneficiaries of the scheme are unaware of these, so government should take strict action for proper implementation of these schemes and should make efforts to increase public awareness regarding these scheme by use of methods like mass communication.

Based on studies done in past about menstrual waste management we found out that incinerators are safest method of disposal when compared to other methods. Our study recommends for use of incinerators according to ecofriendly guidelines. We suggest government to make schemes for mandatory installation of incinerator in at least all schools and for treatment of all menstrual waste in incinerators only.

Incinerators release gases like dioxin and furan when used at low temperature so it should be used at 800 degree Celsius for safe incineration. Most of the times incinerators burn below required below temperature level so more & more such studies are to be undertaken across the globe in future to find out more effective and environment friendly methods of disposal etc.

The study has highlighted the need of adolescent girls & their informant channels of communication to have correct information of menstruation and hygienic practices to be followed during menstruation. Adolescent girls are unaware of reproductive tract infection and many of them undergo various kinds of infections during menses which is possibly due to following of wrong practices during menstruation & they do not tell about these problems to anyone due to shyness & hesitancy completely unaware of the fact that these small problems can lead to serious health problems in future. In order to solve such problem effort should be made at school level, regular menstrual hygiene sessions should be conducted in school so that their hesitancy to discuss on topics like menstruation is removed and they have correct knowledge regarding menstruation. If we want girls to stop following wrong menstrual hygiene practices the first thing that should be done is to make them comfortable to speak up on topics like and convince them that it is normal

process, for this effort should be made at both family level and school level.

CONCLUSION

The study reveals that awareness regarding menstrual hygiene was very low in adolescent girls in Bhopal city. Unawareness about physiology of menstruation, low use of sanitary pads, lack of knowledge regarding hygienic menstrual practices, and total unawareness on reproductive tract infections were the major problems identified. Though not a part of the study, during the study we also observed wrong method of disposal of sanitary pads which may adversely affect environment and unsatisfactory facilities and irresponsible behavior of teachers in schools regarding menstrual hygiene education. So, we recommend conducting more such studies in different part of the country incorporating these points.

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