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Awareness and Attitude of Young Girls in Urban Slums of Bhopal to Menstruation –A Cross Sectional Study

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Abstract

Background and Objectives: Stigma, shame and lack of awareness on menstruation has curbed progress. Addressing this basic physiological process and strategic planning to conquer the obstacles by both genders can lead to a breakthrough. Statistics reflect that menstrual hygiene practices need to be addressed in Bhopal. So, the study was conducted to explore the attitude and knowledge of girls of urban slums of Bhopal to menstruation including their hygiene practices.
Methods: A descriptive, cross-sectional study was conducted among adolescent girls of urban slums of Bhopal with a pre-formed questionnaire. Data was analyzed using SPSS 22.0.
Results: Total 68.2% (p=0.007) stated that they used sanitary pads. 67.1% (p=0.032) claimed that they disposed the napkins in closed bins. Logistic regression analysis yielded a positive prediction in the role of mother's educational status with knowledge of the girls regarding menstruation (p=.001).
Conclusion: Central India needs to focus on improved measures towards female reproductive health by ensuring easy availability of absorbents and education on hygiene.

Keywords: Absorbent, hygiene practices, menstruation, sanitary napkins.

1. INTRODUCTION

Menstruation is a natural, physiological process, it is absolutely mandatory to ensure continuum in human species survival. The female sex hormones, controlled by the hypothalamo pituitary axis, lead to the cyclical shedding of the endometrial layer [1]. Menarche, an important milestone of womanhood, is usually attained at an average age of 13 years and this tender age demands awareness on menstruation preparedness and management [2]. Lack of empathy at homes, work place, schools and colleges may sometimes lead to a negative impact, which definitely reduces the female workforce [3]. Adolescence is a transition phase between childhood and adulthood, aged between 10 and 19 years and encompasses physical, psychological and emotional development demanding special attention and adjustment [4]. It is characterized by changes in the physical growth, sexual maturity and psychosocial development. Intense re-adjustment of oneself, family, place of

education and social life is required [5]. Mothers at home and teachers at school play a vital role in removing inhibition on such sensitive topics; hence sex education and genital hygiene need to be introduced in school curriculum [6].

Many studies have reported the differences in norms in the society due to cultural and ethnic differences preventing women to seek knowledge on menstrual health care. Orthodox mind-set and customs have made mothers reluctant to discuss these crucial topics with their daughters. Monthly cycles are considered to make the female impure and she is isolated, preventing her from entering the kitchen or participating in religious activities [7,8]. The topic is rarely dealt upon, either at home or in schools as it is considered an interdict [9, 10]. A staggering 355 million females in India fall in the bracket of reproductive phase yet about 70% of them remain ignorant on reproductive and menstrual health [11]. The aim of this study was to understand the attitude of girls of urban slums in Bhopal to menstruation. The objective of this survey was to educate girls in slums on menstrual hygiene, create awareness on proper disposal of sanitary napkins, and train them in turn, to become trainers, to remove the stigma and to debunk the myths associated with monthly cycles.

2. Materials and Methods

2.1. Study Design

The present descriptive cross-sectional study was designed to survey the knowledge and practices pertaining to menstrual hygiene amongst the residents of urban slums of Bhopal. Females under the age of 12– 24 years were taken up for the study survey. Prior to the commencement of the study a written consent was taken up by the Institutional Ethical Committee.

2.2. Sample size: Calculation of the sample size was done using formula at 90% confidence level, N= Za2 .X p (1- p). With the prevalence of 90% and allowable error of 5%, the minimum sample size was calculated as 139.A total 337 subjects were interviewed for this study.

Inclusion criteria: Females who have attained menarche and gave informed consent.

Exclusion criteria: Females who have not yet attained menarche, and females who have hit menopause.

A total of 337 females participated in the study. The participants so selected were approached by a local representative to eliminate bias. A self-administered facilitated questionnaire in the local language regarding knowledge and practices of menstruation was construed by trained personnel. After data collection every participant was educated and made aware about menstruation, cleanliness and hygiene.

2.3. Statistical Analysis: Entries of each questionnaire were done under a unique identification code. Data analysis was done using SPSS version 22.0 Descriptive analyses was used to assess the variables and presented in frequency and percentages and evaluated to conclude the results.

3. Results

3.1. Menstrual knowledge of the subjects:

When the knowledge variables were elicited for menstrual awareness, a majority of the participants (40.9%) which was statistically significant at p = 0.034 [Table 1] felt that menstruation was a normal process. Mothers, who were graduates (13.6%), had a higher proportion of study participants for good awareness. Hence this study exhibited a positive prediction of mother’s education level to the menstrual knowledge at (p=0.001).

Table1: *Variables eliciting menstruation*

Mother's qualification	**Primary School**	**Middle School**	**Higher secondary**	**Graduate**	**Total**	**Chi Square statistic**	**P value**
Feeling about your first menstruation							
Normal process of the body	29 (8.6)	36 (10.7)	27(8.0)	46(13.6)	138(40.9)	18.114	0.034*
curse from God	8 (2.4)	4 (1.2)	3 (0.9)	14 (4.2)	29(8.6)		
disease	19(5.6)	15 (4.5)	6(1.8)	41 (12.2)	81(24.0)		
unsure	29	22	12	26	89(26.5)		
Before the onset of menstruation, have you had any learning related to it in your life?							
Yes	32 (9.6)	20 (6.0)	11 (3.3)	27 (8.1)	90 (26.9)	7.740	0.042*
No	52 (15.5)	57 (17.0)	36 (10.7)	100 (29.9)	245 (73.1)		
Total	**85 (25.2)**	**77 (22.8)**	**48 (14.2)**	**127 (37.7)**	**337 (100)**		

** = Highly Significant; * = Significant; NS = Not Significant

Decimals rounded to the nearest number

It was disheartening to note that (73%) of these girls did not have any knowledge regarding menstruation before the onset of menarche. The self-perceived knowledge regarding menstruation was discerned to be 26.6% which non- significant between the levels of mother's education. This finding hypothesizes the mental block associated with menstruation wherein a great majority remained unaware. Only 8.3% of the participants were aware of the uterus being the organ involved in this process. A majority of them were under the misconception that the bladder was the organ involved, which was significant at p=.032.

3.2. Use of absorbent:

It was encouraging to see a progressive attitude as far as use of absorbents was concerned as most (68.2%) (p=0.007) females used commercially made sanitary napkins. Majority (38%) (p=0.038) of the respondents stated that they changed commercially made sanitary napkins twice a day on an average. About 5% of the participants used cloth instead. Those who used cloth claimed to reuse it after washing with soap and water and drying it indoors, which probably reflected on the taboo of the people's mind regarding menstruation (73%) (p=0.017). Majority (67.1%) (p=0.044) of participants realised there is a foul odour associated with the menstrual blood and probably that is why there is a misconception that the menstrual blood is unhygienic.

3.3. Disposal of absorbent:

A strong point in favour of poor environmental practice was reflected in the fact that 67.1% of people disposing the pads in closed bins (p=0.032). The progressive attitude in females was reflected in decreased amount of absenteeism at school or work, that is 73% of people attended school or work during their periods (p=0.030).

4. Discussion:

This study involved 337 participants who resided in 3 slums at Bhopal. Before the onset of menarche, 73.1% (p=0.042) did not have any knowledge of menstruation. This was not very deviant from Udgiri R et al [12] who stated that 81.58% were ignorant of this phenomenon.

Private issues such as monthly cycles are usually discussed between mothers and daughters and most of the mothers were illiterate in this study. This could probably be a strong reason for the lack of transmission of knowledge to the subjects in the slums, before the onset of menarche. The present study exhibited a positive prediction of mother's education level to menstrual knowledge at p=0.001 [Table 2]. This finding is concordant with the report of Upashe et al [13]. Aswathy RSV et al [14] reported 48% of participants knew uterus to be the source of blood compared to8.3% (p=0.032) in the present study [Table 3]. A significant point to be noted is the report of Shrivastava S and Chandra M who stated that 73% of the school going girls knew the source of menstrual blood [15], which could be attributed to their family life education program. 32% of the study participants still resorted to use of unconventional absorbents such as soft paper napkins and rag cloth [Table 4], which was similar to a report by Sudeshna R et al [16].

Table 2: *Linear regression analysis showing knowledge relation to education of mother*

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**95.0% Confidence Interval for B**	
	B	**Std. Error**	**Beta**			**Lower Bound**	**Upper Bound**
(Constant)	23.403	.558		41.919	.000	22.305	24.502
Mother education	.555	.162	.185	3.432	.001	.237	.873

a. Dependent Variable: Knowledge

Mean age of attaining menarche – 11.00 + 4.58 years (Knowledge variable 4)

Duration of normal menstruation – 4.73 + 2.29 days (Knowledge variable 5)

Table 3: *Knowledge variables regarding menarche in study population based on mother's education*

Mother's qualification	**Primary School**	**Middle School**	**Higher secondary**	**Graduate**	**Total**	**Chi Square statistic**	**P value**
From which organ does menstrual blood comes?							
1. uterus	4 (1.2)	9 (2.7)	8 (2.4)	7 (2.1)	28 (8.3)	22.500	0.032*
2. vagina	26 (7.7)	28 (8.3)	15 (4.5)	32 (9.5)	101(30.0)		

3. bladder	38 (11.3)	18 (5.3)	16 (4.7)	52(15.4)	124 (36.8)		
4. abdomen	5 (1.5)	7 (2.1)	0 (0.0)	7 (2.1)	19 (5.6)		
5. intestine	12 (3.6)	14 (4.2)	9 (2.7)	30 (8.9)	65(19.3)		
Do you think there is foul odor during menstruation?							
1.Yes	66 (19.6)	53 (15.7)	31 (9.2)	76 (22.6)	226 (67.1)	8.115	.044*
2.No	19 (5.6)	23 (6.8)	17 (5.0)	52 (15.4)	111 (32.9)		
Do you think menstrual blood is unhygienic?							
1.Yes	24 (7.1)	19 (5.6)	18 (5.3)	47 (13.9)	108 (32.0)	4.238	0.023*
2.No	61 (18.1)	57 (16.9)	30 (8.9)	81 (24.0)	229 (68.0)		
Total	**85 (25.2)**	**76 (22.6)**	**48 (14.2)**	**128 (38.0)**	**337 (100)**		

** = Highly Significant; * = Significant ; NS = Not Significant Decimals rounded to the nearest number

Table 4: *Practice variables regarding menarche in study population based on mother's education*

Mother's Qualification	**Primary School**	**Middle School**	**Higher secondary**	**Graduate**	**Total**	**Chi Square statistic**	**P value**
What absorbent material do you use during menstruation?							
1.Commercially made sanitary pad	65 (19.3)	59 (17.6)	26 (7.7)	79 (23.5)	229 (68.2)	27.110	.007*
2.Napkin (soft paper)	3 (0.9)	3 (0.9)	2 (0.6)	2 (0.6)	10 (3.0)		
3.Rag made pad	2 (0.6)	2(0.6)	1 (0.3)	5 (1.5)	10 (3.0)		
4.Cloth	15 (4.5)	1 2 (3.6)	16 (4.8)	42 (12.5)	85(5.3)		
5.Other(specify)	0	0	2 (0.6)	0	2 (0.6)		
How do you clean cloth							
1. Soap and water	79 (23.4)	70 (20.8)	44 (13.1)	113 (33.5)	30.6 (90.8)	8.075	.779

2. only water	3 (0.9)	4 (1.2)	3 (0.9)	10 (3.0)	20 (5.9)		
3. Antiseptics	2 (0.6)	2 (0.6)	1 (0.3)	3 (0.9)	8 (2.4)		
4. others	1 (0.3)	0(0.0)	0 (0.0)	2 (0.6)	3 (0.9)		
On an average how regularly do you change your pad?							
1. Once a day	25 (7.4)	16 (2.1)	11 (3.3)	37 (11.0)	89 (26.4)	14.457	.023*
2. Twice a day	25 (7.4)	28 (8.3)	25 (7.4)	50 (14.8)	128(38.0)		
3. Once in 6 hours	28 (8.3)	28 (8.3)	11 (3.3)	37 (11.0)	104 (30.9)		
4. Once in 3-4 hours	7 (2.1)	4 (1.2)	1(0.3)	4 (1.2)	16 (4.8)		
If you are using cloth How do you dry the cloth?							
1. Sunlight	16 (4.7)	15 (4.5)	10 (3.0)	19 (5.6)	60 (17.8)	8.172	.017*
2. Inside the house	69 (20.5)	61 (18.1)	38(11.3)	109 (32.4)	277 (82.2)		
Where do you dispose your pads?							
1.Wrap &dispose open dustbin.	11 (3.3)	9 (2.7)	4 (1.2)	11 (3.3)	35 (10.4)	13.642	.032*
2. Dispose into a well/ lake.	5 (1.5)	10 (3.0)	4 (1.2)	9 (2.7)	28 (8.3)		
3.Dispose directly into a sanitary latrine.	8 (2.4)	1 (0.3)	6 (1.8)	15 (4.5)	30 (8.9)		
4. Wrap into a closed waste bin.	58 (17.2)	53 (15.7)	32 (9.5)	83 (24.6)	226 (67.1)		
5. Dispose in open ground.	3 (0.9)	3 (0.9)	2 (0.6)	10 (3.0)	18 (5.3)		
Do you go to school/work place during menstruation?							

1. Yes	63 (18.7)	62 (18.4)	38 (11.3)	83 (24.6)	246 (73.0)	11.285	0.030*
2. No	22 (6.5)	14 (4.2)	10 (3.0)	45 (13.4)	91 (27.0)		

When will you bath during Period?							
1. Daily	30 (8.9)	31 (9.2)	13 (3.9)	51 (15.2)	125 (37.2)	17.515	0.131 (NS)
2. After the 1st day	6 (1.8)	2(0.6)	5(1.5)	19 (5.7)	32(9.5)		
3. After 2nd day	1 (0.3)	4 (1.2)	3 (0.9)	2 (0.6)	10(3.0)		
4. After the 3rd day	46(13.7)	38(11.3)	26(7.7)	53(15.8)	163(48.5)		
5. After 6 days	2 (0.6)	1 (0.3)	1 (0.3)	2 (0.6)	6 (1.8)		
Total	**85 (25.3)**	**76 (22.6)**	**48 (14.3)**	**127 (37.8)**	**337 (100)**		

** = Highly Significant; * = Significant; NS = Not Significant

Compared to studies conducted by Garikipati S [17], Balat MS et al [18] who said that 56% of their participants used sanitary napkins, the present study reported the same to be at 68.2% (p=0.007). It was heartening to note that Pandit D et al [19] , from a Kolkata study, reported 71.72% of girls used sanitary napkins. However, a study from Lucknow reported 11% usage of napkins [20]. Proper hygiene maintenance is absolutely necessary to prevent the possibility of developing reproductive tract infection, urinary tract infection & sexually transmitted diseases. Unhygienic measures could even lead to a life-threatening ailment like cervical cancer [21]. The choice of sanitary absorbent material depends upon the economic status, availability in local market, ethnic beliefs and personal preferences. Disposable pads, although hygienic, are not biodegradable; alternatives such as reusable tampons, menstrual cups, bamboo fiber pads, banana fiber pads, water hyacinth pads which are eco-friendly can be used [2]. Tax exemption would ensure wider usage, positively impacting Menstrual Hygiene Practices, and promoting Swatch Bharat Abhiyan [22].

It was reassuring to note that 68% of the study participants (p=0.023) felt that this blood was not unhygienic. 40.9% (p=0.034) of them felt that it is a normal process, compared to a study from North Kerala [14] who reported that 19% felt the same way. An inspiring finding in our study was that only 27% (p=0.030) of the research subjects remained absent from school during their menstruation compared to Vashisht A et al [23] who stated that 40% of the girls did not attend school in this phase. While 38% of our study population (p=0.023) changed pads twice a day, which was concordant with the report of Adika VO et al [24] who stated 46.4% of their participants doing the same. 62.8% of our participants claimed to not bathe daily during their period which was in stark contradiction to studies from other parts of India [25,26]. Mohite RV [27] reported 88% of their respondents drying their reusable cloth absorbent in sunlight, which is in sharp contrast to the present study where 17.8% (p=0.017) did the same. Rajagopal S and Mathur K [28] reported that girls dried their menstrual clothes by hiding them under other clothes or in cracks of stone hidden out of sight. On a positive note, we found 67.1% (p=.032) girls disposed their used napkins in closed bins, as compared to Deshpande TN et al [21] who reported 51.6% disposed the pads properly. Seenivasan P et al reported that 72.6% disposed napkins in dustbin [29] and 23% in open space [20]. Kaur R et al. [2] suggested separate collection system of napkins, covered dustbins,

incinerators be made available at colleges, schools, work places, with active participation of government to make waste disposal environment friendly mandatorily. In addition, construction of separate clean toilets could be one of the keys to empowering females [30]. The municipal corporation needs to adopt active measures in waste disposal with easy accessibility.

In the present digital India, a wider coverage on such topics is required to promote awareness and annihilate menstruation taboo in society. The leaders of a country have to be actively involved in empowering girls and this step has been positively approached in India where prominent people have advocated sanitation for women. Comprehensive programmes, campaigns on menstruation involving both men and women can help in breaking the taboo.

5. Conclusion

Meagre existing literature on menstruation attitude prompted this study and definitely needs to be taken to a wider dimension in order to provide foolproof statistical analysis on the semi urban attitude in Central India to menstruation. The concept of reproductive health should be made mandatory in schools. A feasible method of gender gap reduction is by extending basic amenities like toilets, economical napkins, disposal facilities and education on reproductive health care measures.

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References

[1] Sharma N, Sharma P, Sharma N, Wavare RR, Gautam B,Sharma M. A cross sectional study of knowledge, attitude and practices of menstrual hygiene among medical students in North India. The Journal of Phytopharmacology 2013; 2(5):28-37.

[2] Kaur R ,Kaur K, Kaur R. Menstrual Hygiene, Management and Waste Disposal: Practices and Challenges Faced by Girls/Women of Developing Countries.Journal of Environment and Public Health .

[3] Vashisht A, Pathak R, Agarwalla R, Patavegar BN, Panda M. School absenteeism during menstruation amongst adolescent girls in Delhi, India. J Fam Community Med 2018; 25:163-8

[4] Jain R , Anand P , Dhyani A , and Bansal D. Knowledge and awareness regarding menstruation and HIV/AIDS among schoolgoing adolescent girls.J Family Med Prim Care. 2017;6(1): 47–51

[5] Bhattacherjee S, Ray K, Biswas R, Chakraborty M. Menstruation: Experiences of Adolescent Slum Dwelling Girls of Siliguri City, West Bengal, India. Journal Of Basic and Clinical Reproductive Sciences, July-Dec 2013; 2(2):85-91.

[6] Deshpande TN, Patil SS, Gharai SB, Patil SR, Durgawale PM. Menstrual hygiene among adolescent girls -A study from urban slum area.J Family Med Prim Care, Nov-Dec 2018 ;7(6):1439-45.

[7] Garg S, Anand T. Menstruation related myths in India: strategies for combating it. J Family Med Prim Care, Apr-Jun2015; 4(2): 184-86.

[8] Sharma P, Singh N, Tempe A, Sharma S. Knowledge, practices and restrictions related to menstruation in young girls: a study from North India. Int J Community Med Public Health 2018; 5:3340-4.

[9] Muthusamy Sivakami, Anna Maria van Eijk, and Penelope A Phillips. Howard Effect of menstruation on girls and their schooling, and facilitators of menstrual hygiene management in schools: surveys in government schools in three states in India, 2015 J global heath 2019;9(1):010408

[10] Alharbi KK, Alkharan AA, Abukhamseen DA, Altassan MA, Alzahrani W, Fayed A. Knowledge, readiness, and myths about menstruation among students at the Princess Noura University. J Family Med Prim Care 2018; 7:1197-202

[11] https://swachhindia.ndtv.com/23-million-women-drop-out-of-school-every-year-when-they-start-menstruating-in-india-

[12] Udgiri R, Angadi MM, Patil S, Sorganvi V. Knowledge and practices regarding menstruation among adolescent girls in an urban slum, Bijapur. Journal of the Indian Medical Association. 2010 Aug;108(8):514-516.
[13] Upashe SP, Tekelab T, Mekonne J. Assesement of knowledge and practice of menstrual hygiene among high school girls in Western Ethiopia. BMC Women's Health 2015;15(84):1-8.
[14] Aswathy RSV, Prabhakumari C. Perceptions, attitudes and practices of menstrual hygiene among rural and urban high school girls in a Northern district of Kerala. Int J Community Med Public Health 2020; 7:2734-42.
[15] Srivastava S, Chandra M. Study on the knowledge of school girls regarding menstrual and reproductive health and their perceptions about family life education program. Int J ReprodContraceptObstetGynecol 2017; 6:688-93.
[16] Ray Sudeshna, DasguptaAparajita Determinants of menstrual hygiene among adolescent girls: a multivariate analysis, November 2012 National Journal of Community Medicine 3(2)
[17] Garikapati S, BOUDOT C To Pad or Not to Pad: Towards Better Sanitary Care for Women in Indian Slums, J. Int. Dev.29,32–51 (2017) DOI: 10.1002/jid
[18] Balat MS, Sahu SK, Patel M.Assessment of Knowledge and Practice of Menstrual Hygiene Management among Adolescent School Girls in Ahemdabad City. Natl J Community Med 2019;10(1):30-34.
[19] Dipanwita P, Prasanta KB, Raja B. IOSR Journal of Dental and Medical Sciences.2014;13(6):19-24.
[20] Van Eijik AM, Sivakami M, Thakkar MB et al. Menstrual hygiene management among adolescent girls in India: a systematic review and meta-analysis. BMJ open 2016;6: e010290. doi:10.1136/bmjopen-2015-010290.
[21] Tanvi N D, SupriyaSP, SupritiBG, S. R. Patil, P.M. Durgawal. Menstrual hygiene among adolescent girls – A study from urban slum area. J Family Med Prim Care. 2018 Nov-Dec; 7(6): 1439–1445.
[22] Sinha RN, Paul B. Menstrual hygiene management in India: The concerns. Indian Journal Public Health 2018;62; 71-74.
[23] Vashisht A, Pathak R, Agarwalla R, Patavegar BN, Panda M. School absenteeism during menstruation amongst adolescent girls in Delhi, India. J Family Community Med. 2018;25(3):163-168.
[24] Adika, V. O, Yabga, J, Apiyanteide, F. A, Ologidi, P.W and Ekpo, K.E Perception and behaviour on use of sanitary pads during menstruation among adolescent school girls in Bayelsa State, Nigeria Adv.Appl.Sci.Res.,2011,2(6):9-15
[25] Sonowal P, Talukdar K. Menstrual hygiene knowledge and practices amongst adolescent girls in urban slums of Dibrugarh town- a cross sectional study. Galore International Journal of Health Sciences & Research. 2019; 4(1): 44-51.
[26] Bhattacharyya M, Sen P, Hazra S, Sinha RN, Sahoo S. A Study of Menstrual Hygiene among Adolescent School Girls in a Slum Area of Kolkata. Ntl J of Community Med 2015; 6(3):345-348.
[27] Mohite RV, Mohite VR, Kumbhar SM, Ganganahalli P. Common Menstrual problems among slum adolescent girls of western Maharashtra, India. Journal of Krishna Institute of Medical Sciences University, Jan-June 2013;2(1):89-97.
[28] Shobhita Rajagopal, Kanchan Mathur. 'Breaking the silence around menstruation': experiences of adolescent girls in an urban setting in India, Gender & Development, 2017; 25:2, 303-317.
[29] Seenivasan P, Caroline Priya K, Arthi E et al. A cross- sectional study on awareness about menstrual hygiene among rural women. Stanley Medical Journal 2015; 2(2):17-21.
[30] Paria B, Bhattacharyya A, Das S. A Comparative Study on Menstrual hygiene Among Urban and Rural Adolescent Girls of West Bengal.J Family Med Prim Care.Oct-Dec 2014; 3(4): 413-17.