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Knowledge and practice on menstrual hygiene among adolescent girls of selected slums in Kathmandu valley

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Abstract

Introductions: Hygiene related practices during menstruation are of considerable importance. This study assesses the existing level of knowledge on menstrual hygiene, and its compliance, among adolescent girls of selected slum areas in Kathmandu, Nepal.

Methods: Descriptive cross sectional study design was applied and slums in Kathmandu district were selected conveniently as research site. Primary data were collected through interview by using structured questionnaire. The association between knowledge and practices were identified through chi square test.

Results: There were 282 respondents for study. Less than half 121 (42.9%) had adequate knowledge related to menstruation and its hygiene. Two-third 185(65.6%) of the participants used sanitary pads, 183 (98.9%), washed hands after pad change, 271 (96.1%) cleaned perineal area during menstruation, 227(80.5%) were aware about the myth and 61.9% followed social norms and restriction related with menstruation. Age of the participant, their education level and the income sources were found statistically significant with their level of knowledge on menstruation.

Conclusions: More than half of adolescent girls of slums in Kathmandu district had inadequate knowledge regarding menstruation and two-third practiced menstrual hygiene.

Keywords: adolescent, slum, menarche, menstruation hygiene

Introductions

Adolescence is the period of attaining reproductive maturity between the ages of 10-19 years.¹ The onset of menstruation is one of the most important changes occurring in adolescent girls.²

Mensuration and hygiene practices are still clouded by taboos and sociocultural restrictions.³ Although menstruation is a natural process, it is linked with several perceptions and practices, which sometimes result in adverse health outcomes.⁴ Women having a better knowledge regarding menstrual hygiene and safe menstrual practices are less vulnerable to reproductive tract infections and its consequences.⁴

The study was carried out to assess the knowledge and practice on menstrual hygiene among adolescent girls of selected slums of Kathmandu valley, Nepal.

Methods

A cross sectional study was conducted over June-July 2018 among adolescent girls from selected slum areas of Kathmandu district, Kathmandu valley, Nepal.

Out of 40 slum areas in Kathmandu valley,⁵ five slum areas in Tripureswor (Bansighat); Balkhu (Jagarand tole, ward no. 14); Sinamangal (ward no. 31); Sankhamul (ward no. 10); and Balaju (ward no. 16) were selected based on convenient sampling. Out of total slum population (15000 persons),^{6,7} 282 adolescent slum girls were taken for the study who were available at that time of study.

Pretesting of tool was done in similar setting in 10% of sample size (i.e. n=42) at Manohara and necessary modification of tools was applied after pre-testing.

The predesigned, pretested semi structured questionnaire were used as tool for data collection through interview. Content validity was based on literature review and consultation with supervisors and subject experts.

Only those female who already had menarche were included in the study. Girls who were not available at the time of data collection were excluded. Data were entered into Epi-data and then transferred to Statistical Package for Social Sciences (SPSS) version 22. Descriptive statistics like frequency, mean, standard deviation, percentage chi square test were used for data analysis. The knowledge scores were calculated by recoding knowledge related question with 0 for wrong answer and 1 for the right one; and those variables were computed. The mean (6) was calculated of new computed variables. The less than mean (<6) and more than mean (>7) were considered as inadequate and adequate knowledge level.

Ethical approval for the research was obtained from Research Department of Asian college for Advance studies. Interview was carried out after obtaining informed verbal consent from the respondents. Confidentiality and anonymity of the participants were assured and maintained.

Results

There were 282 respondent, age between 10 to 19 years (mean 15.3), 211 (74.8%) in age group 13-17 years, 261 (92.6%) were unmarried, 150 (53.2%) of Hindu religion, 135 (47.9%) Janajati Ethnicity, 203 (72%) educated up to secondary level (6-10 grade) and 8 (2.8%) had no formal education, 89 (35.6%) was daily wage/laborer with monthly family income of >10,000 and 203 (72%) belonged to nuclear family. Mothers of 171 (60.6%) girls were illiterate and 148 (52.5%) were housemaker. Toilet facility was available in 280 (99.3%), (Table 1).

The mean age at menarche (by recall) was 12.51 year, 264 (93.6%) by the age of 11-14 years and 213 (75.5%) had information on menstruation before menarche from mothers 138 (64.8%) and 4 (1.9%) from mass media about and 195 (61.9%) followed restriction related with menstruation and 62 (31.5%) were forced to practice restriction during menstruation, (Table 2).

Table 1. Socio-demographic characteristics of adolescent girls (N=282) of selected slums in Kathmandu valley

Variables	N	%
Age (years)		
<13	22	7.8
13-17	211	74.8
>17	49	17.4
Mean Age + SD=15.3+2.054 years		
Marital status		
Never Married	261	92.6
Married/Living together	21	7.4
Religion		
Hindu	150	53.2
Buddhist	34	12.1
Christian	86	30.5
Others	12	4.3
Level of education		
No Education	8	2.8
Primary (up to 5th grade)	20	7.1
Secondary (6th-10th grade)	203	72
Higher secondary (+2)	51	18.1
Main source of income of family		
Business	81	32.4
Service	50	20
Wage/Labor	89	35.6
Other	30	12
Average income of the family (per month in NRs)		
<1000	20	8
1000-5000	81	32.4
5000-10,000	50	20
>10,000	89	35.6

Table 2. Information about menstruation experiences of adolescent girls (N=282) of selected slums in Kathmandu valley

Variables	N	%
Age at Menarche		
<11 years	7	2.5
11-14 years	264	93.6
>14 years	11	3.9
Mean Age \pm SD=12.51 \pm 1.101		
Information about menstruation before menarche		
Yes	213	75.5
No	69	24.5
If yes, source of information* n=213		
Mother	138	64.8
Sisters	94	44.1
Friends	119	55.9
Teachers	80	37.6
Relatives	16	7.5
Mass medias	4	1.9
Reaction towards menarche		
Embarrass	56	19.9
Scared	138	48.9
Discomfort	170	60.3
No Difference	40	14.2
Follows any restriction		
Yes	195	69.1
No	87	30.9
If yes,* n=195		
Not allowed to go to temple/Participate in religious activities	195	40.1
Not allowed to participation in occasion and festive	180	37
Routine household work/Not allowed to enter kitchen	56	11.5
Not attending school	5	1
Not allowed to see and touch members	27	5.6
Not allowed to stay/go in other's house	8	1.6
Keep in separate place (away from home or in corner)	15	3.1
Forced to practice restriction during menstruation, n=195		
Yes	62	31.5
No	135	47.9

*Multiple Response

Table 3. Knowledge about menstruation and hygiene of adolescent girls (N=282) of selected slums in Kathmandu valley (N=282)

Variables	N	%
Normal age for Menarche		
8-10 years	5	1.8
10-12 years	112	39.7
12-14 years	154	54.6
above 15 years	11	3.9
Menstruation meaning		
Normal monthly bleeding	271	96.1
Bleeding due to internal injury	7	2.5
Bleeding due to disease	4	1.4
Causes of menstruation		
Body process	263	93.3
Curse of God	4	1.4
Injury in Uterus	15	5.3
Organ from which menstrual blood comes		
Vagina	151	53.5
Urethra	117	41.5
Anus	3	1.1
Uterus	11	3.9
Interval of menstrual cycle		
15-20 days	37	13.1
20-25 days	38	13.5
25-30 days	182	64.5
30-35 days	25	8.9
Normal Duration of Menstruation		
2-3 days	38	13.5
4-5 days	189	67.0
6-7 days	53	18.8
>7days	2	0.7

Table 4. Practice of menstruation hygiene of adolescent girls (N=282) of selected slums in Kathmandu valley

Variables	Frequency	Percentage
Only cloth	17	6
Only pad	185	65.6
Both cloth and pad	80	28.4
If uses pad only		(n=185)
Frequency of pad change per day during menstruation		
2 times a day	66	35.7
3 times a day	76	41.1
4 times a day	37	20
4 + times a day	6	3.2
Handwashing after changing the pad		
Yes	183	98.9
No	2	1.1
Method of disposal of sanitary pad		
Wrap in paper and discard in dustbin	150	81.1
River	15	8.1
Other	20	3.8
Clean perineal area during menstruation		
Yes	271	96.1
No	11	3.9
If yes,		
How often perineal area is cleaned*		
After Urinating	124	24.8
After Defecating	119	23.8
During Bathing	85	17
During Pad change	171	34.3
Clean perineal area using		
		n=271
Clean water	255	90.4
Soap and water	27	9.6
Bathing during menstruation*n=282		
Daily	50	17.7
First day	74	26.2
Second day	58	20.6
Third day	81	24.1
Forth day	68	41.5
Fifth day	117	158.9

*Multiple Response

Table 5. Association of socio-demographic variables with overall knowledge level of menstruation and hygiene of adolescent girls (N=282) of selected slums in Kathmandu valley

Variables		Level of Knowledge		Test of Association	P
		Inadequate n %	Adequate n %		
Age of participant	<13	33 (27.7%)	79 (48.5%)	12.35	0.000*
Mean age \pm SD=15.3 \pm 2.054		15.06 \pm 2.203	15.47 \pm 1.906	-1.676 (t test)	0.095
Education level of the participant	No Education	3 (2.5%)	5 (3.1%)	26.098	0.000*
	Primary (up to 5th grade)	18 (15.1%)	2 (1.2%)		
	Secondary (6-10 grade)	86 (72.3%)	117 (71.8%)		
	Higher secondary (+2)	12 (10.1%)	39 (23.9%)		
Main source of income of family	Agriculture	16 (15.0%)	4 (2.8%)	18.991	0.001*
	Business	37 (34.6%)	44 (30.8%)		
	Service	13 (12.1%)	37 (25.9%)		
	Wage/Labor	35 (32.7%)	54 (37.8%)		
	Other	6 (5.6%)	4 (2.8%)		

*Significant at <0.05 level

For menarche, 154 (54.6%) thought 12-14 years of the age to be normal and 252 (89.4%) were aware that menstruation is a normal process, 271 (96.1%) believed that it as monthly normal bleeding phenomenon, 263 (93.3%) stated the causes of menstruation to be a body process and 4 (1.4%) thought it due to curse of god, 215 (76.2%) believed that menstrual blood is impure, 151 (53.5%) believed that menstrual blood comes from vagina and 11 (3.9%) believed uterus as the main organ and 253 (89.7%) assumed that sanitary pad is the ideal material that used for absorbing menstrual blood, (Table 3).

During menstruation, 185 (65.6%) were using sanitary pad, 17 (6%) used cloth materials and 80 (28.4%) both cloth and sanitary pads, 76 (41.1%) girls changed pad three times a day, 183 (98.9%) washed hands after changing the pad, 150 (81.1%) disposed absorbent by wrapping in paper and discarding it in dustbin, 271 (96.1%) cleaned perineal area during menstruation of which about 171 (34.3%) clean during pad change, 50 (17.7%)

participants bathed daily during menstruation and 68 (41.5%) bathed on the fourth day of menstruation, (Table 4).

Inadequate knowledge related to menstruation hygiene was seen in 161 (57.1%) girls and adequate in 121 (42.9%). There was statistically significant association in between knowledge and socio-demographic variables i.e. age, education level, source of family income, and no association between overall knowledge and practice of menstrual hygiene, (Table 5)

Discussions

In this study, the majority of study subjects' were in the age between 10 to 19 years with mean age of 15.3 years. This may be due to nutritional, general health and age difference of study subjects. Our study found that the mean age of menarche is 12.51 years, similar to the various studies reporting of 12.8 years.⁴ The similar studies from India and others found that the awareness of menstruation before

menarche was only 37%, while in our study 213 (75.5%) knew about menstruation before their menarche.^{8,9} Similar to our study with 263 (93.3%) believing it was due to normal body process, in other studies too, 86.25% % believed that menstruation is due to normal body process.⁴ The main source of information about menstruation and menstrual hygiene in our study was from family members i.e. from mother 138 (64.8%), sisters 94 (44.1%), friends 119 (55.9%) and only 4 persons heard it from mass media. Similar findings has been reported from the study done in school going adolescent in rural Nepal in which 39.3% (24) responded that mothers were their source of information followed by sisters and friends (each 18%).³

In this study, out of 282 girls interviewed, majority used sanitary pad (65.5%), washed hands (98.9%) and disposed pad by wrapping in paper and discarding it in dustbin (81.1%) which is similar to the various studies showing 65.4% to 70% of girls wrapped and disposed of the used materials during menstruation in a closed container.¹⁰ This may be due to target group being adolescent girls and education level. Regarding other menstrual hygiene practices: majority of participants 271 (96.1%) clean their genital areas, different from the study which reports only 42% girls were doing vaginal wash in maintaining menstrual hygiene.^{10,11} These differences may be due to education level and age factor of the study population. Only 50 (17.7%) participants bathed daily during menstruation, lower than the other study in which 90-95% girls took regular bath during period.¹⁰ These contrast is due to their study population was school going adolescents from general population unlike slum girls of present study.

In this study, more than half of the girls 195 (69.1%) followed restriction related with menstruation which is in contrast to the study on school going adolescents from general population which showed 34% of girls had to practiced restrictions during menstruation.¹² The restriction were that girls had to sit separately, cannot go to religious places, not allowed to attend religious ceremonies, cannot

enter kitchen and not allowed to make food and even going out in night time was restricted. These variances could be due to differences in geographical, environmental, nutritional and socio-economic factors.

There are various reports on numbers of settlements and population.^{6,7} A study reports 40 squatter settlements exist in Kathmandu Valley, holding 12,726.⁵ The age, education level and family income were associated with overall knowledge level. This study fails to illicit association between knowledge about menstruation and its hygiene practice.

There are some limitations of this study. The study was confined to adolescent girls of certain area of slums and carried out within short duration of time. Data were collected from participants who were available at the time of data collection. Only five settlements were included with convenient sampling, and thus the findings may not be generalized. This was a one shot study with no follow up.

Conclusions

This study reveals that more than half of adolescent girls of selected slums in Kathmandu valley had inadequate knowledge regarding menstruation. Menstrual hygiene practice was good among a large proportion of the adolescent girls of slum areas. There was significant association between knowledge with age and education level of participants and family income. The knowledge and practice of menstrual hygiene had no significant association.

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References

1. Prajapati DJ, Shah JP, Kedia G. Menstrual hygiene: knowledge and practice among

- adolescent girls of rural Kheda district. National Journal of Community Medicine. 2015;6(2):349-53. [PDF](#)
2. Rajakumari A. A study on knowledge regarding menstrual hygiene among adolescent school girls. Global Journal of Current Research. 2015;3(4):111-6. [PDF](#)
 3. Sapkota D, Sharma D, Pokharel HP, Budhathoki SS, Khanal VK. Knowledge and practices regarding menstruation among school going adolescents of rural Nepal. Journal of Kathmandu Medical College. 2013;2(5):122-8. DOI: 10.3126/jkmc.v2i3.9962
 4. Dasgupta A, Sarkar M. Menstrual hygiene: how hygienic is the adolescent girl? Indian J Community Med. 2008;33(2):77-80. DOI: 10.4103/0970-0218.40872 PMID: 19967028
 5. Toffin G. Urban fringes: squatter and slum settlements in the Kathmandu valley (Nepal). Contrib Nepalese Stud. 2010;37(2):151-68. [PDF](#)
 6. Lumanti. Status of squatter communities along the Bagmati river and its tributaries in Kathmandu Valley. Kathmandu: Lumanti; 2008:69 p. [Web link](#) [PDF](#)
 7. Halbert RJ, Natoli JL, Gano A, Badamgarav E, Buist AS, Mannino DM. Global burden of COPD: systematic review and meta-analysis. Eur Respir J. 2006;28(3):523-32. DOI: 10.1183/09031936.06.00124605 [PDF](#)
 8. Thakre SB, Thakre SS, Reddy M, Rathi N, Pathak K, Ughade S. Menstrual hygiene: knowledge and practice among adolescent school girls of Saoner, Nagpur District. Journal of Clinical and Diagnostic Research. 2011;5(5):1027-33. [PDF](#)
 9. Raina D, Balodi G. Menstrual hygiene: knowledge, practise and restrictions amongst girls of Dehradun, Uttarakhand, India. Global Journal of Interdisciplinary Social Sciences. 2014;3(4):156-62. [PDF](#)
 10. Taklikar C, Dobe M, Mandal RN. Menstrual hygiene knowledge and practice among adolescent school girls of urban slum of Chetla, Kolkata. Indian Journal of Hygiene and Public Health. 2016;2(1):57-67. [PDF](#)
 11. 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. [PDF](#)
 12. 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(5):1945-51. DOI: 10.18203/2320-1770.ijrcog20171954 [PDF](#)