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## A Comparative Assessment on Menstrual Hygiene Knowledge, Perception, and Practices Among the Adolescent Girls in Rural and Urban Schools of Karur District, Tamil Nadu, South India

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### ABSTRACT

*Menstruation is a taboo subject in the Indian context and considers it as unclean where socio-cultural restrictions keep girls and women ignorant of the scientific facts and hygienic practices that result in adverse health outcomes. This study has assessed the knowledge, practices, and perceptions of the adolescent girls both in rural and urban and compared the same. This is a cross-sectional study that has been conducted among 309 school going adolescent girls who were selected randomly from the selected schools at Karur District, Tamil Nadu covering both rural and urban. A structured questionnaire was used to collect the data. Data obtained was compiled and analyzed using the SPSS version 22. This study shows that urban adolescent girls have better knowledge regarding menstrual hygiene than rural adolescent girls. But most of the negative perceptions found to be similar among both rural and urban girls. However, there is a change in perceptions in certain aspects among urban girls than rural girls. Majority of the respondents (88%) are using sanitary pads at the time of menstruation and only 12% of respondents use cloths which is a good indicator for hygienic practice. However, the frequency of changing pad is more important hygienic practice. One-fifth of the girls do not practice it which is found to be more among the rural girls compared to the urban girls. The findings on the knowledge, practices, and perceptions among the adolescent girls show that rural girls need more information /facts on menstruation compared to urban girls. It is the need of the hour that we need to integrate all the stakeholders viz the health, education and community professionals both private and state to work together for the promotion of menstrual hygiene management among adolescent girls.*

**Keywords**— Principal, JK College of Nursing, Coimbatore, Tamil Nadu, South India, Dean, School of Humanities and Sciences, All Nations University, Koforidua, Ghana E/R

### 1. INTRODUCTION

Puberty and menstruation in most cases considered as an issue, rather than a healthy sign of having good reproductive health. Girls achieve this developmental milestone due to hormonal changes occur in their body and that indicates their normal growth. When the physical growth is taking place, the psychological state of every individual also needs to cater so that the girls can able to handle and understand the changes happening to them. But, because of the cultural taboos and practices existing in the society, the girls are not able to handle it. Also due to the strict cultural silence on menstruation, it is also not discussed in homes and therefore girls do not get the right information about menstruation instead they get into several issues.

Early puberty is becoming common nowadays that also leads to some psychological consequences. They need to be educated on menstruation prior to puberty so that they can be prepared mentally to handle the menstruation without any fear and anxiety. The myths and taboos attached to menstruation also hamper girls' holistic development especially their mobility are restricted which directly affects access to education. Menstruation is one of the reasons for the dropouts, absenteeism and reduced performance among girls. Menstrual discomforts, pain, inadequate sanitation facilities and lack of access to sanitary pads contribute more for absenteeism. The traditional beliefs and the cultural taboos shaped girls to have negative perceptions about menstruation that limits their empowerment.

Hygienic practices are more important for the wellbeing of an individual and also for the wellbeing of society. Various researches indicate that girls are not practising hygienic practices ie they use unclean clothes, cloths not dried properly, using sanitary pads for long hours and not disposing of it properly that leads to infection which may later pan out into other complications including cervical cancer, infertility and abnormal pregnancy. Financial barrier is the main reason in most of the cases of the unhygienic

practices because they cannot afford buying sanitary pads available in the market. Also, various researches indicate that there is a vast information gap exists among rural and urban adolescent girls and therefore this study is conducted with a primary objective to assess and compare the knowledge, practices, and perceptions among the rural and urban adolescent girls.

**2. METHODOLOGY**

A descriptive study was conducted among the adolescent school girls studying in Government, Government Aided, and Private schools in rural as well as in Urban. The simple random sampling procedure was adopted in the selection of schools and the selection of adolescent girls. Girls in this study were selected according to the WHO criteria for adolescence (10 -19 years) and the data were collected from 309 adolescent girls from different grades from 6<sup>th</sup> to 12<sup>th</sup> Standard in different schools in Karur District through a structured questionnaire that consisted of four parts namely menstrual history and problems, knowledge on menstruation, perception on menstruation and menstrual hygiene practices. Knowledge was assessed using 15 questions with multiple choice. All questions had only one correct answer. Each correct response was awarded a single score according to the predetermined key and zero score was awarded to wrong responses and omissions. The total possible maximum score for all the items was 15. The perception was assessed using 15 questions. Right responses receive a single score and the other response receives zero. The total possible maximum score for all the items was 15. The practice was assessed using 10 questions and every right response receive ‘1’ score and every other response receives ‘0’ score. The total possible maximum score for all the items was 10. Data obtained was compiled and analyzed using the SPSS version 22, and the findings were reported in the form of descriptive statistics viz frequencies and percentages for the analysis of Socio-economic variables, Mean and Independent sample ‘t’ test to compare the level of knowledge, perception and practices between rural and urban adolescent girls, and p-value of <0.05 was considered statistically significant.

**3. RESULTS AND DISCUSSIONS**

The results are discussed in the following four headings 1. Knowledge on Menstruation, 2. Perception, Belief and cultural restriction on Menstruation, 3. Practices of Menstrual hygiene, 4. School absenteeism during Menstruation.

The present study shows that three fourth of the respondents are aware of menstruation prior to attainment of menarche of which 85.35% were from urban and 65% were from rural. The awareness about menstruation was low in rural compared to urban. This study shows the increase in the awareness about menstruation among rural and urban girls in contrast to most of the studies that carried out two decades earlier where the awareness about menstruation prior to menarche was low (Bhatia JC, Cleland J , 1995; Mehara S. (Ed), (1995); Durge P M and Waradpande U. 1993). UNICEF study conducted a decade earlier also shows that 56% of girls- both in and out of school – did not have any information about menstruation before the onset of menarche. Gupta S, Sinha A., 2006 found that 63.77% of the girls belonging to upper social class and 60% belonging to the lower class were partially aware of adolescent physical change and menarche. Now the awareness has increased which may be due to various menstrual hygiene interventions that have been carried out through schools, health schemes and programmes and media. In this study mother become the main source of information in nearly half of the respondents followed by teachers and friends and this finding is similar to various studies viz., Khanna A, Goyal RS, Bhawsar R., 2005; Mudey AB, Keshwani N, Mudey GA, Goyal RC, 2010; Omidwar S, Begum K., 2010; MitraRS, Roy S, Ghosh A, Das BM., 2010; Nemade I, Anjenaya S, Gujar R., 2009. Rama Rao A. highlighted the fact that girls with no previous knowledge about menstruation felt more scared at menarche. The girls with little knowledge felt uncomfortable, indifferent or disgusted. Majority of the girls had a negative reaction to menarche and this might be a reflection of taboos and prejudices in society about menstruation.

**3.1 Knowledge on menstruation**

Unlike several studies which studied about the awareness of menstruation prior to menarche, this study studied in detail about the knowledge on menstruation where several knowledge related questions were asked and scored. This study observed that only 25 percent of rural girls have good knowledge about menstruation whereas 42 percent of urban girls have good knowledge which shows that urban girls have access to more knowledge on menstruation than the rural girls. It is found that the mean knowledge score of urban adolescent girls is higher than the mean knowledge score of rural adolescent girls. And there is a significant difference among the rural and urban adolescent girls (see Table 1).

Nearly one third of the rural girls and one fifth of the urban girls do not have awareness that it is a physiological process and majority of the rural and urban girls are aware that menstruation is a physiological process and this corroborates the findings of the study conducted by Khanna et al & Dasgupta et al. Overall, 23% of the adolescent girls do not know where the blood comes from. It is pathetic to see that 18 percent of the girls understand that the bleeding comes from the bladder rather than from uterus. When looking at the rural-urban difference the majority of the urban girls are aware of the source of menstrual bleeding compared to the rural girls. One-fourth of the rural girls were not aware of the source of the menstrual bleeding was the uterus whereas only one-tenth of the urban girls do not aware. When looking at the mean comparison the mean responses of the urban girls is more than the mean responses of the rural girls and there is a significant difference among the rural and urban adolescent girls. (See Table 1)

**Table 1: Mean comparison of scores of knowledge and its indicators**

	Region	N	Mean	Std. Deviation	Std. Error Mean	T-test for Equality of Means			
						t	Df	Sig. (2-tailed)	Mean Difference
Knowledge score	Rural	152	9.5461	2.59862	.21078	-5.442	298.515	.001	-1.51127
	Urban	157	11.057	2.26524	.18079				
Menstruation is Physiological process	Rural	152	.6382	.48212	.03911	-2.840	296.832	.005	-.14528
	Urban	157	.7834	.41322	.03298				

Part from which bleeding occurs	Rural	152	.6842	.46637	.03783	-3.742	279.254	.001	-.17566
	Urban	157	.8599	.34823	.02779				
Menstrual blood has blood and tissues	Rural	152	.3158	.46637	.03783	-6.610	307	.001	-.35300
	Urban	157	.6688	.47215	.03768				
Best material to use during menstruation	Rural	152	.9013	.29922	.02427	.959	307	.338	.03507
	Urban	157	.8662	.34148	.02725				
Frequency of Changing pads	Rural	152	.6382	.48212	.03911	-4.461	277.089	.001	-.21535
	Urban	157	.8535	.35474	.02831				
Best way to dispose the used sanitary napkins	Rural	152	.9342	.24873	.02017	3.351	264.398	.001	.12529
	Urban	157	.8089	.39441	.03148				
Best Cloth to use if cloth is used instead of sanitary pads	Rural	152	.7237	.44865	.03639	-.686	307	.493	-.03428
	Urban	157	.7580	.42969	.03429				
Unhygienic Practices leads to Reproductive track infections	Rural	152	.5658	.49729	.04034	-6.172	266.564	.001	-.30045
	Urban	157	.8662	.34148	.02725				

UNICEF Study in 2007 shows that 75% of girls did not have any idea about what material to use to absorb the flow. This study is carried out a decade after which shows that the majority of the girls are aware that sanitary pad is the best material to use during menstruation. It could be due to the wide awareness that has taken place through the media, health programme for adolescent groups, the peer group interactions etc. Both the rural and urban girls become aware that usage of the sanitary pad during menstruation is the best material which is revealed from this study that there is no significant difference among rural and urban girls on the knowledge on use of best material during menstruation. This shows that the message on the sanitary pad has reached all the girls not only among the urban girls but also among the rural girls that sanitary pads must be used to ensure the good menstrual hygienic practices. These girls were also aware that these pads have to be changed every 4 or 5 hours which is also an important hygienic practice. But when looking at the rural-urban difference, it reveals that there is a significant difference in the knowledge on the frequency of changing pads. Rural girls are aware of it in less number compared to urban girls. In case of the disposal mechanisms, majority of the rural girls aware that that burning the used sanitary napkin is the best way to dispose when compared to the urban girls and it is proved through the means test that the mean score of the rural girls found to be high than the mean score of the urban girls which is also a good indicator that the menstrual hygiene awareness has reached the rural girls. T-test also confirms that there is a significant difference between rural and urban girls on the proper disposal of sanitary pads (Table 1).

**3.2 Perception, belief and cultural restrictions on menstruation**

Menstruation is still regarded as something unclean or dirty in Indian Society. There are cultural taboos and belief around the puberty and menstruation which are practiced for several generations and still carried out through the parents and relatives in the name of traditions and beliefs that menstruation is impure and therefore one should stay separately and should not see the male members and also should not participate in the holy rituals etc. In this study, it is proved that Myths and taboos found to be high among the rural than the urban adolescent girls. Overall, it was revealed that nearly 59 percent of the adolescent girls have a perception that menstruation is impure and should not touch who menstruate and this perception leads to a lot of cultural taboos of impurity, unclean etc. and there is no difference in perception this regard among rural and urban girls. Both consider menstruation as impure. Some of the perceptions which are religious and related to impurity, untouchable issues are also found to be similar among rural and urban girls and similar to Shubhas *et al* (73.64% girls) and Dasgupta *et al*. (85% girls) this study also found that majority of the girls practised different restrictions during menstruation.

However, there is a change in perception in certain aspects that they started talking about this matter where before it was a cultural silence. They started moving together where before it is an untouchable issue, they talk to boys and male members in the family and this is found high among urban girls than the rural girls and it is evident in this study that there is a significant difference between rural and urban girls on this perception.

Similarly some of the attitudes which are religious and related to impurity, untouchable issues such as ‘mother should not see the daughter first on her menarche’, ‘during menstruation one should not go to temple’, ‘one should not touch tulsī (commonly known as holy basil) plant’, ‘one should not see male members in the family etc., this attitude is found to be similar among rural and urban girls because majority of the respondents are Hindus and the Hindu beliefs said that it is impure and one who undergoes menstruation should refrain from all the religious rituals and sacred things and therefore these indicators found to be similar in both urban and rural girls and this study also reveals that there is no significant difference between the rural and urban girls on the above four indicators

**Table 2: Mean comparison of perception score and its indicators**

	Region	N	Mean	Std. Deviation	Std. Error Mean	T-test for Equality of Means			
						t	Df	Sig. (2-tailed)	Mean Difference
Perception Score	Rural	152	5.065	2.66861	.21645	-4.137	307	.001	-1.37370
	Urban	157	6.439	3.14059	.25065				
During Menstruation one should not touch other because it is impure	Rural	152	.4013	.49179	.03989	.001	307	.999	.00004
	Urban	157	.4013	.49172	.03924				
Menstruation is a private issue and should not talk openly	Rural	152	.3487	.47813	.03878	-3.580	306.964	.001	-.19909
	Urban	157	.5478	.49931	.03985				

Menstrual Blood is impure	Rural	152	.2171	.41364	.03355	3.951	243.767	.001	.15341
	Urban	157	.0637	.24499	.01955				
Eating food like papaya, sweets during menstruation induce bleeding	Rural	152	.0855	.28059	.02276	-.492	307	.623	-.01638
	Urban	157	.1019	.30350	.02422				
During Menstruation girls should not see boys	Rural	152	.4671	.50057	.04060	-3.518	304.743	.001	-.19532
	Urban	157	.6624	.47440	.03786				
The used Cloth if touched by snakes will cause infertility	Rural	152	.1776	.38347	.03110	-5.189	292.338	.001	-.26186
	Urban	157	.4395	.49791	.03974				
During Menstruation one should not go to temple	Rural	152	.0592	.23680	.01921	-1.907	284.444	.058	-.06181
	Urban	157	.1210	.32719	.02611				

**3.3 Hygienic practice regarding menstruation**

A decade earlier studies have found that least percentage of girls used commercially available sanitary pads both in rural and urban areas (Narayan KA et al., 2001; Singh AJ et al., 2006). Darkshayani DK et al. (1994) found that almost all the girls were using an old cloth as menstrual absorbent and 38 percent reused the material. Similar findings supported by various other studies in Nepal by Adhikari et al. (2007) and in India (Dasgupta et al. (2008) and Khanna A et al (2005). Report by Water aid (2009) found that the use of an old piece of cloth was higher among the rural group. In UNICEF study (2007), Majority of girls (75%) use cloth. 27% of girls out of school did not use any material at all. 82-85% of girls reuse the material during and across cycles. 41% of school girls’ dry cloth in the sun; 15% do not change the material they use unless it is completely soiled.

Current studies found a difference in hygienic practices in contrast to the earlier studies among adolescent girls both in rural and urban. However, it is found that the hygienic practices are more satisfactory in urban areas as compared to a rural area. Use of sanitary pads found to be high in urban (62 percent) compared to rural (43 percent). Use of old piece of cloth was higher among the rural group (52 percent) (Rupali Patle et al., 2014). This difference may be due to the wider awareness created through media and other social groups, initiatives taken as well as the increase in the literacy and socio-economic status.

In this study, both rural and urban girls practice certain good practices as they were aware of personal hygiene and the use of sanitary pads. There is no significant difference in personal hygiene such as taking bath, cleaning the genitalia, use of sanitary pads during menstrual periods between rural and urban girls and it is found to be better. However, the frequency of changing pad is more important hygienic practice. Even though the majority of the girls are changing pads every 4-5 hours, one fifth of the girls do not practice it which is found to be more among the rural girls compared to the urban girls, and it is proved in this study that there is a significant difference between rural and urban girls on the frequency of changing pads. Narayan K.A et al. (2001) found that 42 percent girls had changed their pads 2 times a day.

Disposal of used pads is the growing concern among all the sectors of society. Girls use different methods to dispose of and it was found in this study that majority (72%) of the girls bury it in the ground and one fifth put it in the dustbin and few burn it. Some said they flush into the toilet. Even though these practices found to be prevalent among both urban and rural girls, there is a significant difference between them in the disposal mechanisms where among the least who practice well, urban girls practice better than the rural girls. Disposal of napkins is a serious issue nowadays due to the increased usage of sanitary pads among girls. This is because of the lack of sanitation facilities in schools and in other public and workplaces. This creates environmental issues and disturbs the public hygiene due to the lack of personal hygiene. Again there is a debate on the safe disposal mechanism whether it is burying or burning. In case of burning, it leads to air pollution due to the plastic material in the pad and in case of burying the complete degradable is not happening, which could be answered by the professionals and environmentalist. But safe disposal mechanism alone can help the public free from infections and diseases which will help for the overall development of women and men as well.

**Table 3: Mean comparison of hygienic related practices**

Region	N	Mean	Std. Deviation	Std. Error Mean	T-test for Equality of Means				
					t	Df	Sig. (2-tailed)	Mean Difference	
Hygienic related Practice score	Rural	152	8.0263	1.22311	.09921	-2.643	307	.009	-.36222
	Urban	157	8.3885	1.18565	.09463				
How often do you take bath during menstruation	Rural	152	.7829	.41364	.03355	-.012	307	.991	-.00054
	Urban	157	.7834	.41322	.03298				
Clean Genitalia using	Rural	152	.9145	.28059	.02276	-1.201	286.499	.231	-.03457
	Urban	157	.9490	.22061	.01761				
Material used during menstruation	Rural	152	.8618	.34621	.02808	-.980	307	.328	-.03625
	Urban	157	.8981	.30350	.02422				
Frequency of Changing pad	Rural	152	.6908	.46370	.03761	-4.634	259.091	.001	-.20730
	Urban	157	.8981	.30350	.02422				
Disposal of pad/cloth	Rural	152	.1776	.38347	.03110	-2.284	301.551	.023	-.10899
	Urban	157	.2866	.45363	.03620				

**3.4 School Absenteeism during Menstruation**

With respect to the school attendance during menstruation, majority of 81 percent of the girls attend school during menstruation and only less than one-fifth of the adolescent girls absent from school for which various reasons were quoted in this study. One reason is the menstrual discomforts where physically they suffer from abdominal pains due to cramps, psychologically they feel it

as a sickness and therefore girls often restrict mobility during that time and they absent themselves from school. Not only this reason, but are girls also suffering from lack of water facility, lack of clean toilets sometimes lack toilets in schools, lack of privacy and lack of disposal settings and these factors prevent girls from going to school or other public places during periods. In this study, less than one-fifth of the adolescent girls take leave during menstruation and there is no significant difference between rural and urban girls. Similar findings were reported by a survey undertaken by Water Aid in India, in which 28 per cent of students reported not attending school during menstruation, owing to lack of facilities. Many mentioned that fear of staining on their clothes caused them stress and depression (Fernandes 2008). It has been also shown that dysmenorrhea is considered as the main cause of absence from school among girls (Drank Shayani D.K. and Uenkafa RP., 1995). Dysmenorrhea is a problem not only causes fear but also causes many social, physical, psychological, and economic problems for women around the world.

#### **4. CONCLUSION**

The study reveals a strong need on knowing menstrual hygiene related information for the adolescent girls in terms of physiological process and hygienic practices especially in the adoption of safe disposal mechanism which can alone provide us with a clean and hygienic environment that ensures good health and secure public health. Therefore, adolescent girls should be educated about the facts of menstruation, physiological changes and process, menstrual hygienic practices of using sanitary napkins and adopting safe disposal mechanisms. It is the need of the hour that we need to integrate all the stakeholders viz the health, education and community professionals both private and state to work together for the promotion of menstrual hygiene management among adolescent girls.

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