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Original Research Article

Socio-cultural barriers for menstrual hygiene management among adolescent school girls of southern India

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ABSTRACT

Background: India is home to 20% of the world's adolescent population, with 1 in 10 children currently experiencing puberty. Menstruation, a physiological process in females is influenced not only by race, nutrition and heredity but also by the socio-cultural milieu. In Indian society, the social and cultural restrictions influence the knowledge, attitudes and the practices of adolescent girls towards menstrual hygiene. The present study was carried out to find out the level of knowledge, attitude and practice and the restrictions they face during the process of menstruation.
Methods: The study was a descriptive cross-sectional study where 489 adolescent school going females of the age group of 13-15 were recruited using simple random sampling from a cluster of schools and interviewed using a semi structured questionnaire for their knowledge, attitudes, practices and the restrictions they face during menstruation. A scoring system was adopted and categorised as poor, average and good.
Results: 423 (88.6%) participants demonstrated average to poor knowledge scores, while 279 (57.1%) participants demonstrated average to poor practice scores. There was a significant difference observed between the educational status of mother (p=0.041) and the knowledge scores of study participants. There was no correlation observed between the monthly per capita income of households and the knowledge (r=0.097) and practice scores (r=0.0034). 375 (76%) study participants faced multiple restrictions during menstruation like not allowed to pray or visit temples (93.6%), total seclusion (74.6%), wash clothes separately (74.6%), sleep on floor (74.6%), restriction on leisure (70.4%), eat out of separate utensils (70.4%), and restriction on consumption of food items (49.8%).
Conclusions: Knowledge and practices regarding menstrual hygiene was low among study participants and was influenced by various prevalent socio-cultural restrictions.

Keywords: Adolescence health, Barriers, Menstrual hygiene, Menstrual hygiene management, Restrictions, Socio-Cultural

INTRODUCTION

The World Health Organization (WHO) defines adolescence as a transition period from childhood to adult years.[1] India, home to 253 million adolescents constitutes 20% of the world's adolescent's population.[2] In addition, more than 1 in 10 children in India are teenagers currently experiencing puberty, and more than a quarter of all children will transition to adolescence and puberty within the next decade.[3-5] Menstruation, a physiological process, unique to females is part of the female reproductive cycle that begins at puberty.[6] The first menses called "Menarche". occurs between the ages of 11 and 15 continues cyclically, except during pregnancy and

lactation throughout the reproductive years.[7] With the onset of menstruation, the female becomes aware of her emerging identity which is not only influenced by her internal emotional and physical change but also the external environment she lives and the feedback she receives from her family ,her peers and the society.[8] The ages of onset of menstruation is influenced by heredity, race and the nutritional status.[9,10]

Astonishingly, still today in rural India, the physiology of menstruation is poorly understood due to many myths, taboos and misconceptions which act as a barrier for Menstrual hygiene Management (MHM) thus endangering the reproductive health of the female.[11] Poor menstrual hygiene and inadequate self-care can lead to urinary tract infections (UTI), scabies in the vaginal area, abnormal abdominal pain, absence from school, and complications during future pregnancy.[12-15]

The myths and taboos regarding menstrual health and disease are explored by various studies.[16,17] Some of the myths are related to the day when a girl attains puberty. The month, the day and the time are noted. If it happens to be on Monday, the girl will be eminently chaste. Tuesday is not favorable, as she is likely to be a widow early in her days of wedlock. If it is Wednesday, she will be wealthy and so on.[18]

Another myth is the notion of impurity which ascertains that the movement of the girl should be restricted. Restrictions in daily activities such as not being allowed to take bath, change clothes, comb hair, enter holy places and dietary restrictions (taboo on consumption of food like rice, curd, milk, lassi, potato, onion, sugarcane etc.) during the menstrual period are also imposed.[19] The girl should have a separate place and mat for sleep, use separate vessels, mat, pillow and wash things every day morning during menstruation; sleep alone on empty floor and shouldn't throw out her dress with blood stain.[2]

As proximate care givers mothers, grandmothers, aunts and other relatives have a major role in influencing the attitude and practices of adolescence girls in Indian society. Absence of scientific information, incorrect practices and a negative attitude by these proximate care givers leads to intergenerational transfer of myths, taboos and misconceptions regarding menstrual hygiene. As a result, most adolescent females in rural India have incomplete and inaccurate information about menstrual physiology and hygiene, which predisposes them to infections.[3]

So, the present study was conducted to explore the knowledge, attitudes and practices regarding menstruation and menstrual hygiene of the adolescent females in the study area, the influencers which play a major role in their knowledge and practice behavior and the socio-cultural restrictions they face during the physiological process of menstruation.

METHODS

The present study was a part of a completed educational intervention project to improve the menstrual hygiene of adolescent girls in the Perambalur district of Tamil Nadu state of India during the period of June 2015 to October 2017. The findings from the pre-test of the study are discussed in the present paper.

The study participants were high school adolescence girls of 13-15 age group selected using random sampling technique. Review of literature suggested that 50% of school going adolescents have adequate knowledge regarding menstruation and an effect size of 0.31 post intervention. As the project involved intervention carried out on three different groups of adolescent girls the sample size computed for each group was 81, which came out to be 243 for three groups. On considering the design effect of 2, the final sample size came to be 486 study participants. The investigator recruited 490 participants in the study

Details regarding number of girls studying in 8 and 9 grades, location of school were collected from District Educational officer. Considering a minimum enrolment of 50 girls in class 8th and 9th, the investigators needed approximately 9 schools for the study to reach a sample size of 490. From the list of schools, 9 schools were chosen by cluster random sampling. From selected schools, all eligible consenting adolescent girls were included as study participants for the study. Adolescent girls of grades 8th and 9th, who have attained menarche at least 6 months back and who gave consent were included in the study.

A self-administered, pre-tested and semi-structured questionnaire in local language was used for data collection. The questionnaire included Socio demographic profile, menarche and menstruation details, knowledge regarding menstruation and menstrual hygiene, attitude of participants towards menstruation and menstrual hygiene, practices during menstruation and restrictions faced by participants during menstruation. The questionnaire adopted a scoring system for ease of analysis. It included a knowledge score of Poor: 0-3, Average: 4-7 and Good: 8-10 and a Practice score of Poor ≤4, Average 5-8 and Good: ≥9. After explaining the purpose of the study, written informed consent of the participants was obtained and a pre-test was conducted for all the 490 participants in class room of the schools selected. Questions were explained to the students and they were asked to answer them without discussing among themselves. It was made sure that all the questions were answered by the participants.

All the data collected were coded and entered in Microsoft excel sheet which was re-checked and analysed using Statistical Package for Social Sciences (SPSS) version 21. Descriptive statistics were expressed as Mean and Standard Deviation. To test association between

categorical variables chi-square was computed and an p value of less than 0.05 was considered significant. Correlation coefficient (r) was calculated to study the relationship between two continuous variables.

RESULTS

In the present study, totally 489 adolescent females participated in the study one participant refused to consent

Socio-demographics

Among the participants, 349 adolescent females i.e., 71.3% were in the age group of 14 years followed by 13 (22%) and 15 years (0.7%).

Among the participants 470 (96.2%) of the participants belonged to Hindu religion, 392 (80.1%) were from nuclear family. About 321 (65.6%) and 344 (70.4%) of participant's mother and father were literate respectively. Regarding occupation status of the parents, 381 (77.9%) and 440 (89.9%) of participants' mother and father were employed respectively. 222 (45.4%) of study participants lived in kutcha house while 59.5% (n=291) of the study participants belonged to class IV of modified B.G. Prasad scale (Table 1).

Menarche and menstruation details

About 276 i.e., 56.5% participants attended age at Menarche at 13 years. Among the participants, 406 (83.1%) of them had regular menstrual cycles whereas, 83 (16.9%) girls had irregular cycles.

Table 1: Socio-demographic and menstrual details of the study participants (n=489).

Variables		N	Percent
Age (years)	≤13	108	22
	14	349	71.3
	15	32	0.7
Family	Nuclear	392	80.1
	Joint	97	19.9
Religion	Hindu	470	96.2
	Non-Hindu	19	3.8
Mother's education	Illiterate	168	34.4
	Literate	321	65.6
Father's education	Illiterate	145	29.6
	Literate	344	70.4
Mother's occupation	Unemployed	108	22.1
	Employed	381	77.9
Father's Occupation	Unemployed	49	10.1
	Employed	440	89.9
House type	Kuccha	222	45.4
	semi pucca	194	39.6
	Pucca	73	14.9
Age at menarche	<12 years	166	33.9
	13 years	276	56.5
	>14 years	47	9.6
Regularity of menstrual cycle	Regular cycles	406	83.1
	Irregular cycles	83	16.9
First Informant regarding menstruation	Friends	68	13.9
	Mothers	106	21.6
	Aunt	121	24.7
	Sister	147	30
	Others	47	9.6

Table 2. Various knowledge, attitude, practices and the restrictions faced by the study participants (n=489).

	Variables		N	Percent
Knowledge (n=489)	Able to explain in lay terms about menstruation	Yes	260	53.1
		No	229	46.9
	Know what is the cause of menstruation	Yes	200	40.8
		No	289	59.2
	Know from which organ blood flows during menstruation	Yes	113	23.1
		No	376	76.9
	Know whether dietary practices affect menstruation.	Yes	268	54.8
		No	221	45.2
	Have you heard about menstrual hygiene	Yes	294	60.1
		No	195	39.9
	Know whether poor menstrual hygiene leads to infection	Yes	239	48.9
		No	250	51.1
	Knows the normal duration of menstruation period	Yes	159	32.5
		No	330	67.5
	Knows the normal interval of menstrual cycle	Yes	117	23.9
		No	372	76.1
	Knows the age at which Menopause occurs	Yes	151	30.9
		No	338	69.1

Continued.

	Variables		N	Percent
	Knows that menstruation indicates fertility	Yes	243	49.7
		No	246	50.3
Attitude (n=489)	What was your emotional reaction when you got your first menses?	Afraid	268	54.8
		Embarrassed	92	18.8
		Guilty	11	2.24
		Indeterminate	117	23.9
	What is your emotional reaction when you don't get your regular menses?	Relived	109	22.2
		Afraid	181	37.2
		worried	129	26.3
		Indeterminate	70	14.3
	Do you think that it is better to know about menstruation before attaining menarche	Yes	323	66.1
		No	166	33.9
	Do you think that educating Girls regrading menstrual hygiene is necessary	Yes	404	82.6
		No	85	17.4
	To whom are you comfortable to discuss issues regarding Menstrual hygiene	Friend	205	41.9
		Mother	191	39.1
		Sister	68	13.9
		others	25	5.1
Practices (n=489)	What type of absorbent you use during your menses?	Sanitary napkin	489	100
		Cloths	0	0
	How frequently you change absorbent during day?	<2	128	26.2
		> 3	361	73.8
	Do you change absorbent before sleep?	Yes	294	60.2
		No	195	39.8
	How do you dispose off the used absorbent?	Fair practice	410	83.8
		Poor practice	79	16.2
	Do you practice regular cleaning of genitalia during Menstruation?	Fair practice	251	51.3
		Poor practice	238	48.7
	What materials you use for cleaning genitalia during menstruation?	Water with soap	250	51.2
		Water only	163	33.3
		Not washing regularly	76	15.5
Restrictions (n=375)	Seclusion/ Stay in other room	Yes	280	76.6
		No	95	25.4
	Use of Separate utensils for eating	Yes	264	70.4
		No	111	29.6
	Restriction on cooking /going inside kitchen	Yes	253	67.5
		No	122	32.5
	Restriction on consumption of certain foods	Yes	187	49.9
		No	188	50.1
	Restriction on attending school	Yes	79	21
		No	296	79
	Restrictions to on outdoor playing /exercise /leisure activities	Yes	210	56
		No	165	46
	Restriction on visit to relatives, friends and neighbours	Yes	265	70.6
		No	110	29.4
	Advocated to use empty floor, separate place or mat for sleep	Yes	280	74.6
		No	95	25.4
	Restrictions to visit Prayer room, Pray or Visit Temple	Yes	351	93.6
		No	24	6.4

Table 3: Educational status of parents and their association with knowledge and practice scores.

		Grades	Graduation	Illiterate	Primary	Secondary	Total	P value
Knowledge scores	Mothers education	Average	7	68	71	79	225	0.041
		Good	4	23	16	13	56	
		Poor	3	77	48	80	208	
	Fathers Education	Average	11	58	76	80	225	0.19
		Good	1	24	16	15	56	
		Poor	13	63	58	74	208	
Practice scores	Mothers education	Average	6	81	71	69	227	0.284
		Good	7	72	53	78	210	
		Poor	1	15	11	25	52	
	Fathers Education	Average	13	71	62	81	227	0.452
		Good	11	59	66	74	210	
		Poor	1	15	22	14	52	

Regarding information related to menarche and menstrual cycle, 147 (30%) of the study participants replied that elder sister was the primary source of the knowledge, followed by 121 (24.7%) from aunt, 106 (21.6%) from mother, 68 (13.9%) from friends and 47 (9.6%) received information from grandmother and neighbors (Table 2).

Knowledge about menstruation and menstrual hygiene

About 260 (53.1%) of participants were able to answer that menstruation was a physiological process and 200 (40.8%) of participants were aware that it is caused by hormonal changes in the body. Among the study participants, 113 (23.1%) answered that menstrual blood flows through the uterus.

More than half, 268 (54.8%) of participants replied that diet doesn't affect menstruation. 294 (60.1%) participants said that they have heard about menstrual hygiene and 239 (48.9%) were aware that poor menstrual hygiene can lead to infection of the reproductive tract. About 159 (32.5%) and 117 (23.9%) participants respectively had appropriate knowledge regarding the normal duration of menstrual cycle and normal intervals between cycles, while 151 (30.9%) replied correctly the age at which menopause occurs. 243 (49.7%) participants were aware that menstruation indicates fertility. Cumulative knowledge scores were calculated for each participant followed by calculation of mean. Mean cumulative knowledge scores calculated was 4.22±2.28 (SD). Among the study participants, only about 56 (11.4%) had good scores whereas the 423 (88.6%) were poor to average scorers.

Attitudes

Attitude of study participants towards menstruation and menstrual hygiene was assessed. When questioned regarding first reaction towards menarche 268 (54.8%) of participants responded that they were afraid when they had their first menses. About 323 (66.1%) responded that it is better to know about menstruation before attaining menarche. Majority i.e., 404 (82.6%) of the participants responded that educating girls regarding menstruation and menstrual Hygiene is necessary before menarche.

When the participants were questioned "To whom are they comfortable to discuss menstruation and menstrual hygiene related issues?" about 205 (41.9%) of participants responded they were comfortable discussion this issue with friends followed by mother191 (39.1%).

Practices

It was found that about all participants 489 (100%) use sanitary napkin during menstruation. 361 (73.3%) of participants replied that they change it more than 3 times in a day. They were asked whether they change pad before sleep for which 294 (60.2%) of participants responded yes. Disposal of used menstrual hygiene products was questioned. Burying, burning, disposing in waste bin after proper wrapping was considered to be fair practice and 410 (83.8%) participants were practicing it. Throwing out in open, flushing it in toilets, or throwing in toilets or corners was considered as poor practice and it was found that 79 (16.2 %) participants were practicing it. 251 (51.3%) participants were cleaning their external genitalia regularly while 250 (51.2%) girls were using water and soap to clean their private parts. Those who used only water to clean were 163 (33.3%). A total of 12 points were given for practices during menstruation. Cumulative mean practice score was 8.04±2.56 (SD). 210 (42.9%) had good practice scores, 279 (57.1%) participants had poor and average scores.

Restrictions during menstruation

The participants were assessed for any restrictions they faced during menstruation. 375 (76.6%) study participants faced multiple restrictions of different categories during menstruation. 280 (74.6%) of the total 375 participants, were totally secluded and not allowed to touch anyone or any objects at house. 351 (93.6%) of participants faced restriction to enter prayer room, offer

prayers or to enter temple. Restrictions on consumption of food items were present in about 187 (49.8%) participants, whereas 264 (70.4%) of participants were given separate utensils for eating. 253 (67.5%) participants were restricted from entering kitchen during menstruation. About 280 (74.6%) of them were made to sleep on floor during menstrual cycle. Almost 280 (74.6%) of the girls were made to wash their clothes separately. 79 (21%) of the study participants were not allowed to visit school. 210 (56%) participants were not allowed to play, exercise and involve in leisure activities while 265 (70.6%) participants were restricted from meeting neighbors or relatives.

There was a significant difference observed between the educational status of mother's education status and the knowledge scores of study participants (0.041) but not of the father. There was no significant difference observed between the educational status of both parents and their practice scores (Table 3). There was no correlation observed between the monthly per capita income of households and the knowledge score (r=0.097) (Figure 1) and practice scores of the study participants (r=0.0034) (Figure 2).

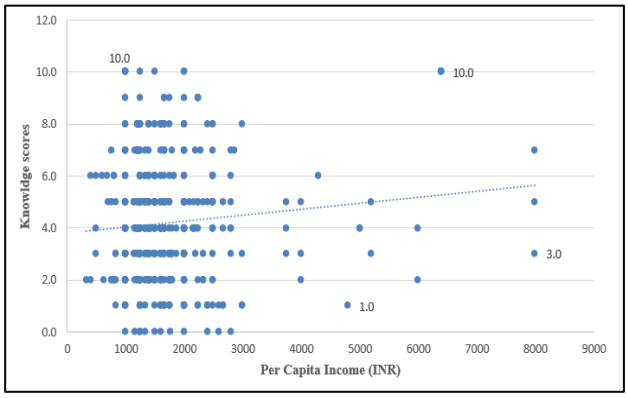

Figure 1: Correlation between monthly per capita income and Knowledge scores of study participants (r=0.097).

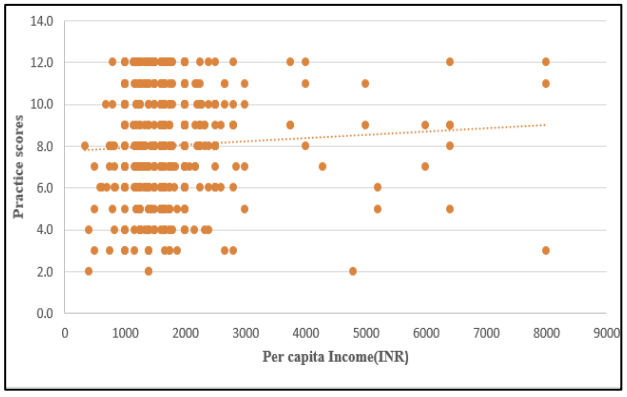

Figure 2: Correlation between monthly per capita income and practice scores of study participants (r=0.034).

DISCUSSION

In the present study, the mean age menarche in the 56% of study participants was 12.7 years (±0.66) which are similar to findings of studies conducted in Nepal by Hamal et al and in Karnataka by Ramchandra et al where the mean age of menarche was and 12.94 yrs. and 12.39 years respectively.[14,20] In the present study, 83.0% of participants had regular menstrual cycles which is comparable to study conducted in Gujarat by Rana et al and in Belgaum by Pokrel et al where 76% and 76.9% participants respectively had regular menstrual cycles.[21,22]

In the present study, the primary source of information and practice regarding menstruation hygiene was the elder sister of the participant, which is similar to study conducted in Belgaum by Pokrel et al where elder sister was the primary source of knowledge in 25.3% of study participants.[22] In contrast to this, mother was the primary source of information and practice in 41.7% of participants in the study conducted by Verma et al in Varanasi.[23]

In the present study, 53% participants were aware that menstruation is a physiological process which is similar to study conducted by Pokrel et al and Allah et al where about half of the participants were aware of it.[22,24] In the present study 41% of participants responded that menstruation occurs due to hormonal changes. In a study conducted by Kamath et al in Udupi, 45.5% of participants responded similarly.[25] Only 23.1% of participants in the present study responded that the blood flows through the uterus via the vagina, which is comparable to the studies conducted by Sapkota et al and Pokrel et al where only 36.0% and 29.7% of participants respectively could answer correctly.[22,26]

In the present study, 46% of the participants replied affirmatively that food affects menstruation which is more than the study conducted by Hague et al in Bangladesh where 34% of participants replied that food affects menstruation.[3] In the present study, majority (60%) of participants were aware of the term "menstrual hygiene" which is comparable to study done by Shiva et al in western Ethiopia where 75% of participants were aware of it.[27] This finding is in contrast to study conducted by the Tegegne et al in North east Ethiopia where only 24.5% of girls were aware of the term "menstrual hygiene".[7] In the present study, 48.7% of participants were aware that poor menstrual hygiene predisposes to reproductive tract infection which is comparable to a study done by Sapkota et al in Nepal where 37% of girls were aware of it.[26] In contrast to this, the study conducted by Haque et al in Bangladesh reports a higher percentage of participants (68.3%) aware of their predisposition to reproductive tract infections in absence of proper menstrual hygiene.[3]

About 31% participants had correct knowledge regarding age at menopause which is in similar to 58% in a study of

Ghana.[28] Mean knowledge scores of study participants were found to be 4.22 (±2.28) which is comparable with a study done by Anitha et al in Chennai where mean knowledge scores of participants were were 5.27 (±1.87). In another study conducted by Shanbhag et al in Karnataka the pretest knowledge mean score of all participants was lesser (4.04±1.32).[29,30] In the present study about 55% of participants responded that they were afraid or terrified during menarche which is similar to study in Nigeria where 53% and in Udupi where 49.6% of participants were afraid during their first menstruation experience.[25,31]

In order to promote menstrual hygiene among young rural girls, the state government of Tamil Nadu launched distribution of free sanitary pads to adolescent girls. The above initiative reflects the reason for universal usage (100%) of sanitary pads during menstruation by the study participants. This finding is similar to a studies conducted by Zaidi et al in Thiruporur and Bharathalakhsmi et al in Chidambaram of Tamil Nadu where the utilization of sanitary napkins was 93.8% and 90.5% respectively.[11,33] On contrary, in studies done by Gilany et al in Egypt and Subash et al in Nagpur lower Sanitary pad usage of 66.8% and 49.3% respectively was reported.[35]

In present study, higher proportion of the participants changed their sanitary pads frequently (more than three times a day). This is in contrast to studies done in Nepal by Sapkota and by Patavegar in Delhi where only half of the participants changed pads frequently.[26,36] In the present study 83.8% participants practiced hygienic methods of sanitary pads disposal whereas in studies done by Haque et al in Bangladesh and Dasgupta et al in Kolkata only 50% of participants were practicing a hygienic method of disposal.[3,13]

About 52% of participants in the present study were practicing cleaning of genitalia regularly whereas in studies conducted by Patevagar et al in Delhi and by Subhas et al in Nagpur, 66% and 42% of participants cleaned their genitalia frequently in the present study 51% participants used water and soap to clean genitalia while in the study by Patavegar et al 47.4% of participants wash their genitalia with water and soap/antiseptic.[35,36] The cumulative mean practice scores (SD) of the study participants in the present study was 8.04 (±2.56 SD) which is comparable to study in Chennai which showed a mean practice score (SD) of 8.22 (±1.18 SD), whereas the practice scores were lower (6.41±1.65) in a study conducted in Karnataka.[17,18]

Restrictions faced during menstruation

In the present study, majority (76%) of the study participants faced restrictions during menstruation. Among them, about 74 % of participants faced seclusion which is comparable to study done by Zaidi et al in Thiropurur where 66.0% of participants faced seclusion. Restriction on household activities was common among the study participants where 67% of them faced it during menstruation. In similar study conducted by Shanbag et al in Karnataka there were restrictions on 50% of participants for doing household chores.[18] Restrictions to pray and enter temple was universal (93.5%) in the study participants which is similar to studies done by by Pokrel et al in Belgaum and Bhudhagaonkar et al in Maharashtra where 98.3% and 100% participants faced such restriction.[12,37] About half of the participants said that certain types of foods were restricted which is similar to 33.5% in a study done by Srivastava et al in Madhya Pradesh.[38] Almost 3/4th of the participants were made to sleep separately on floor during menstruation which is similar to study done in South India where 64% of participants faced such restriction.[11]

CONCLUSION

The knowledge and practice scores regarding menstrual hygiene was low among participants and was influenced by various prevalent socio-cultural restrictions. Parents' educational status did affect knowledge and practice of study participants but income has no effect on knowledge and practice of the study participants.

Recommendations

Training in gender education by trained professionals can bring about a change in the knowledge and practice behaviour of the participants. Further qualitative studies to explore the role played by proximate care givers in influencing knowledge and practices should be conducted and health education should be targeted in this group.

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