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Assessment of Knowledge and Practice of Menstrual Hygiene Among Adolescent Girls of Tamil Nadu State India

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ABSTRACT

The menstrual hygiene problem is inadequately understood and has not received adequate attention. The use of sanitary pads and genital washing are important practices for preserving menstrual hygiene. The goal of the study is to assess the knowledge and practice of menstrual hygiene management among the adolescent gilrs in Dharmapuri district of Tamilnadu. This is a cross-sectional study was administered with adolescent girls in Sri Vijay Vidyalaya Arts and Science College, Dharmapuri district, Tamil Nadu. This study was done among 200 adolescent girls under the age group of 19-24 years. A self-administered structured questionnaire was developed to obtain information from school students. Descriptive analysis was done to analyses the knowledge and practice among the adolescents on menstrual hygiene management. The results of that study revealed that, 53% and 41% of them were under the age group of 23-24 years in the control group and experimental group. The control group subjects secured 44% of them having poor knowledge (30-39) and 36% were having regular (40-49) nutritional knowledge and remaining 16% and 4% were very poor (20-29) and bad nutritional knowledge category. In experimental group, 24% of the adolescent was shifted to a good knowledge, 11% of them were under satisfactory (50-59), and 63% of them were in good knowledge and had a positive attitude towards menstrual hygiene management related issues. From this study it was concluded that, knowledge of menstrual hygiene management among adolescents is very fair, still attitude and practice has to be improve and need a healthy awareness campaigns to improve behavior alongside regular enhancement of school health education schemes.

KEY WORDS: KNOWLEDGE, ATTITUDE, PRACTICE, MENSTRUAL HYGIENE, MANAGEMENT

INTRODUCTION

Adolescence has been described as a period between 10-19 years by the WHO (WHO, 1997). The word adolescence comes from the term "to grow to maturity" in Latin. By 2025, the teenage population in developed and developing countries are going to be about 19% and 27%, respectively (Bansal and Mehra, 1998; Kulkamai and Baride, 2002). Adolescent girls constitute not only a vulnerable group in terms of their social standing, but also in terms of their health. In this respect, in society, menstruation is considered impure or filthy (Dasgupta and Sarkar, 2008). Consistent with the UNICEF (The Status of World's Children 2011) survey, there are an approximate 1.2 billion teenagers within the world aged 10-19 years, making up 18% of the world's population, and 88% of them sleep in developing countries. In Haryana, teenagers structure 21% of the entire population (Census 2011).

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Adolescence accounts for 20% of the nation's population in India (UNICEF, 2011). Hygiene-related practices of girls during menstruation are of considerable importance, because it features a health impact in terms of increased vulnerability to reproductive tract infections (RTI). The interplay of socio-economic status, menstrual hygiene practices, and RTI are noticeable. Today many women are sufferers of RTI and its complications and sometimes the infection is transmitted to the offspring of the pregnant mother (Dasgupta and Sarkar, 2008 Sharma 2017 ICDS 2019).

There are over 355 million menstruating women and girls in India, but many girls across the globe still face major problems with a relaxed and dignified menstrual hygiene management experience. In India, during their menstrual cycle, about 88 percent of girls use homemade items (e.g., old cloth or rags). The key reasons for using the cloth-based product are personal preference and familiarity, lack of approach to or affordability for good-quality commercial sanitary pads, and lack of sufficient knowledge about pads. A locally produced cotton fabric is additionally employed by some girls. The incidence of reproductive tract infection (RTI) was 70% more prevalent among women and girls if hygienic sanitary practices weren't practiced during menstruation (Garg et al., 2012). Menstrual hygiene is an issue that every girl has to deal with in her life, but there is lack of awareness on the process of menstruation, the physical and psychological changes associated with puberty and proper requirement for managing menstruation. The taboos surrounding this issue in the Indian society prevent girls and women from articulating their menstrual needs. The problems of poor menstrual hygiene management have been ignored or misunderstood by the society as well the policy makers till now (Juyal et al., 2012, ICDS 2019).

Adolescence is that the most vulnerable period within the human life cycle after puberty, marked by rapid development and growth with a transition from infancy to maturity. The teenage term is taken from the Latin word 'adolescence,' aiming to mature into adulthood (ICDS, 2012). For girls, menstruation may be a physiological process which begins in puberty and is unprecedented for ladies . it's periodic discharge of blood and mucosal tissue from the uterus for 4-5 days (average) occurs regularly every 28-30 days of the cycle (Roy et al., 2014). Women with improved menstrual hygiene skills and good practices are less prone to reproductive tract infections and their effects. Increased awareness of menstruation right from childhood will also escalate healthy practices and can also alleviate the misery of millions of women. The social stigma attached to menstruation causes dangerous grooming activities to be carried out by many girls and women.

Girls and women frequently suffer from discomfort and infection, avoiding urination during menstruation, and using any kind of cloth available old (or) unwashed as an, but still girls do not visit medical practitioners, lacking a forum to share menstrual hygiene problems. Hence, the present study was planned to assess the menstrual hygiene knowledge and self-care practice among the adolescent gilrs and to seek out the impact of knowledge and practice among the adolescents (Roy et al., 2014 Sharma 2017).

MATERIAL AND METHODS

In phase I clinical trial a quantitative research approach was adopted for the study. The research design chosen for this study was a descriptive cross-sectional research design. The population chosen for this study was, adolescent girls studying in Sri Vijay Vidyalaya Arts and Science College, Dharmapuri district, Tamil Nadu. Adolescent girls who fulfill the sampling criteria were included within the study. The sample size for the study was 200 (control group n=100; experimental group n=100). The technique adopted for this study was the straightforward sampling technique. An in depth interview schedule was developed by the investigator to elicit information about the socio-economic status, History of menstruation deals with menarche, menorrhea and menstrual duration, health status and private habits of the chosen subjects. Before starting the study, a pilot was adopted among 10 percent (n=10) of the entire subjects to seek out validation within the formulated interview schedule. In phase II clinical trial , nutrition education was given to the chosen adolescent groups through PowerPoint presentation and therefore the knowledge and practice were evaluated using the questionnaire. A nutritional knowledge questionnaire was formulated which consisted of 10 questions of multiple-choice and 10 nutritional practice questions that were developed to seek out the menstrual hygiene knowledge and practice between both the control group and therefore the experimental group.

Within the control group, 100 adolescent subjects were chosen and there was no intervention was adopted during this group. During this experimental group, 100 adolescent subjects were grouped during a big hall. Before starting the assessment of data pretest was assessed using the structured questionnaire. the themes were projected with the Power Point presentation about menstrual hygiene and self-care materials. Posttest about menstrual hygiene and self-care was assessed after one week through an equivalent questionnaire. The collected questionnaire was validated and every correct answer is scored and therefore the total score obtained by each subject is noted right down to test their pre and post nutritional knowledge. The difference between the initial and final scores was assessed to seek out the impact of nutrition education. Questions were scored as followed 1 mark for the right answer and 0 marks for wrong or no answer. the entire score of every aspect equal 60% or Quite → Adequate or satisfactory knowledge and practice). the entire of every aspect but 60% → inadequate e or unsatisfactory knowledge and practice.

Table 1. Socioeconomic status of the selected subjects

Socioeconomic details	Control group (n=100)		Experimental group (n=100)	
	Number	%	Number	%
Age (years)				
19-20	22	22	28	28
21-22	25	25	31	31
23-24	53	53	41	41
Ethnic				
OC \FC	10	10	21	21
BC	45	45	40	40
MBC	35	35	35	35
SC\ST	10	10	14	14
Religion				
Hindu	68	68	59	59
Christian	24	24	24	24
Muslim	8	8	17	17
Others	-	-	-	-
Educational qualification of parents				
Elementary school	10	10	-	-
High school	55	55	74	74
College	35	35	26	26
Illiterate	-	-	-	-
Employment				
Sedentary	49	49	34	34
Moderate	35	35	47	47
Heavy	16	16	19	19

RESULTS AND DISCUSSION

The results and discussion of this study was discussed below with the relevant tables, which describes the datas in details.

Socioeconomic status of the selected subjects:

Data about the study revealed that 53 percent and 41percent of them were under the age group of 23-24 years in the control group and experimental group. Nearly 22percent and 28percent of them were belonged to 19-20 years of age. In our society menstruation is considered as very personal and private matter of discussion. In the present study most of the girls (80.82%) had attained menarche between 13-15 years of age. Other studies by Sharma (2017) showed comparative findings where 57.35 percent of girls had menarche between the ages of 13-15 years. Majority of 40% of the selected subjects were under backward ethnic group. The religion said that most (above 50%) of the subjects were Hindu. About 35 percent of them under MBC and 45 percent of the girls belonged to BC in the control group. In the experimental group, 40percent of them belonged to the BC category, and 14percent were Sc/ST group (Drakshayani et.al., 1994).

The majority of 68percent of them were Hindu and only 8percent of them were Muslim in the control group and the experimental group 59percent them and 17percent of them were Hindu and Muslim respectively. 10 percent did their elementary level, 55 percent had studied up to high school and 35 percent of them were graduates in the control group. Whereas in the experimental group, 74 percent of them did their high school level education and 26 percent of them were finished their college studies. 49percent were as sedentary workers, 35percent were as moderate workers and 16 were as heavy workers in the control group and 47percent of them were moderate worker and 19percent of them were a heavy worker in the experimental group. Menstruation-related information and activities are often based on socio-economic circumstances (Drakshayani et.al., 1994).

Percentage of distribution of menstruation and menstrual hygiene knowledge among study participants:

About 81 percent (control) and 50 percent (experimental) of participants were able to answer that Menstruation was a physiological process and 44 percent and 52 percent of girls were knowing about dysmenorrheal. Dysmenorrhea is one of the most common complaints and gynecological problems among worldwide women (George and Bhaduri, 2002; Harel, 2006 and Agarwal and Agarwal, 2010). Among the study participants, 48 percent and 755 answered the definition of menstruation. About 80 percent of girls able to open up their time of ovulation. In the control group, 55 percent of the girls do not have signs and symptoms of menstruation. In the experimental group, 77 percent of them know the causes of menstruation. Almost 70 percent of the girls knew about the menstrual flow organ. About 67 percent and 82 percent of the group girls knew that poor menstrual hygiene practices lead to infections. Almost70 percent of girls were aware that menstruation indicates fertility (Sapkota et al., 2014).

The knowledge score was demarcated into Poor, Average, and Good and is given in the table. The pre and post-test Knowledge Mean initial scores were 15, 20, 8, and 18 for poor scores, 75, 70, 32, and 67 for average scores and 10, 10, 60, and 15 were good scores of both groups. In the present study 39 (23.64%) of the adolescent girls were found to be absent from school during their menses in comparison to a study done by Kumar et al where 42.8% adolescent girls were absent from school during menses. Regarding the percentage of distribution of menstruation and menstrual hygiene knowledge, 48 percent and 75% were answered the definition of menstruation. Nearly about 67% and 82% of girls knew that poor menstrual hygiene practices lead to infections. There is limited knowledge and many misconceptions about menstruation among young women in India before and even after the menarche. This usually leads to undue fear, anxiety, and undesirable practices (Mahon and Fernandes, 2010). Juyal et al., (2012) and Sapkota et al.,

(2014) stated in their study that 83% of the respondent had the idea that menstruation is a physiological process, which is significantly higher than findings (Juyal et al., 2012; Sapkota et al., 2014).

Table 2. Percentage of distribution of menstruation and menstrual hygiene knowledge among study participants

S. No	Questions	Control group (n=100)		Experimental group (n=100)	
		Pre test (%)	Post test (%)	Pre test (%)	Post test (%)
1.	Menstruation is a regular process				
	Physiological process	81	81	50	60
	Disease	2	2	31	10
	Sin	10	10	2	18
	Do not know	7	7	17	12
2.	Definition of dysmenorrheal				
	Painful	34	34	47	50
	No periods	44	44	52	42
	Do not know	22	22	1	8
3.	Definition of menstruation disorder				
	No periods	30	30	14	15
	Normal menstrual cycle	48	48	75	85
	Do not know	22	22	11	0
3.	Time of ovulation				
	Yes	85	85	89	92
	No	15	15	11	8
4.	Signs and symptoms before or during menses				
	Yes	45	45	62	84
	No	55	55	38	16
5.	What is the cause of menstruation?				
	Hormones	50	50	77	67
	Diseases	1	1	24	33
	Do not know	39	39	0	0
6.	From where does the menstrual blood flow?				
	Uterus	85	85	73	85
	Vagina	15	15	27	10
	Abdomen	0	0	0	5
	Do not know	0	0	0	0
7.	Do food habits affect menstrual cycle?				
	Yes	67	67	82	88
	No	23	23	18	12
8.	Have you heard about menstrual hygiene?				
	Yes	72	72	69	72
	No	28	28	31	28
9.	Do poor menstrual hygiene practices lead to infections?				
	Yes	67	67	82	88
	No	23	23	18	12
10.	Menstruation indicates fertility				
	Yes	79	79	88	94
	No	21	21	12	6

From the above table -3 it was found that about 76 percent and 86 percent of the participants in all two groups use a sanitary napkin during menstruation. Regarding several pads per day, 80 percent of participants answered that they change it more than 3 times in a day. They were asked whether they change pad before sleep for which 60 percent of participants responded yes. Burying, burning, disposing of in waste bin after proper wrapping was considered to be fair practice and 83.8 percent girls were practicing it. About 80 percent of participants of both groups were cleaning their genitalia regularly.

Table 3. Percentage distribution of menstruation and menstrual hygiene practice among subjects

S,no	Questions	Control group (n=100)		Experimental group (n=100)	
		Pretest (%)	Posttest (%)	Pretest (%)	Posttest (%)
1.	What absorbent do you use during menstruation?				
	Sanitary pad	76	76	85	92
	New cloths	24	24	15	8
	Old cloths	0	0	0	0
2.	How many times do you change pad/cloths per day?				
	One time	67	67	82	52
	Two time	23	23	18	20
	Three time	0	0	0	28
	Four time	0	0	0	0
3.	Do you change pad/cloth before sleep?				
	Yes	72	72	69	80
	No	28	28	31	20
4.	If you are using cloth or absorbent (re-usable), How do you dry it?				
	Outside room in sunlight	-	-	-	9
	Inside room with sunlight	67	67	82	74
	Without sun light	23	23	18	17
	Not using reusable absorbent	0	0	0	0
5.	Type of pads used				
	Piece of clothes	0	0	0	0
	Piece of new cloths	8	8	2	0
	Piece of cotton	0	0	0	2
	Sanitary pad	92	92	98	98
6.	Number of pads per day				
	Single per day	85	85	89	50
	Twice per day	15	15	11	50
	Thrice per day	0	0	0	0
	Four or more per day	0	0	0	0
7.	How do you dispose your sanitary pads?				
	Buried	30	30	14	30
	Burned	48	48	75	65
	Dustbin	22	22	11	5
	Latrine	0	0	0	0
	Throw on road	0	0	0	0
8.	When do you clean your genitalia?				
	Every time use toilet	85	85	89	85
	During bathing	15	15	11	15
	Do not clean regularly	0	0	0	0
9.	Material used for cleaning of external genitalia				
	Water and antiseptic	22	22	15	10
	Soap and water	48	48	75	80
	Only water	30	30	10	10
	Not cleaning regularly	0	0	0	0
10.	Do you practice any restriction during menstruation				
	Yes	85	85	89	92
	No	15	15	11	8

A study conducted by Dasgupta and Sankar (2008) in which just 48.75% knew the use of a sanitary pad. Mudey et.al., (2010) stated that poor genital hygiene negatively afects adolescents' health. Most girls are unaware and unprepared for menarche as they are not informed or ill-informed about menstruation. This increment in knowledge indicates the exposure and readiness of school adolescents to adopt hygiene behavior. Though the majority of students know about menstruation which might be attributed to the inclusion of reproductive health education in school curricula and exposure to a wide range of information media like television, radio, internet; still misperceptions persist in this matter (Dasgupta and Sankar 2008; Mudey et.al., 2010).

The results of the 't' value of the control group were 0.44 which is more than the 5% level of significance. The two-tailed p-value was 0.76 which means that the mean nutritional knowledge was increased (2.28) which was not significant at a 5% level (Lawan et al., 2010).

The results of the 't' value of the experimental group were 47.2 which is less than a 1% level of significance. The two-tailed p-value was 0.00 which means the mean final nutritional knowledge was increased (2.87) which was significant at a 1% level. Dasgupta and Sankar (2008) pointed out that the increased awareness and knowledge about menstruation from the early days is most likely to inculcate healthy practices and help in lowering the sufferings of millions of women. Results of the 't' value of the control group were 12.4 which is more than the 5% or 1% level of significance. The two-tailed p-values were 0.81 which means the mean final attitude was increased (0.44) which is not significant at 5% or 1% level. The results of the 't' value of the experimental group were 1.04 which is less than a 1% level of significance (Lawan et al., 2010).

Table 4. Mean comparison of the control group and experimental group regarding menstrual hygiene knowledge and practice

Aspects studied	Total scores	Groups	Pretest Mean ± SD	Post-test Mean ± SD	't' value	Significance
Nutritional knowledge	10	Control Group	4.48 ± 1.26	6.76±4.26	0.44	0.76NS
		Experimental Group	5.36± 2.32	8.23±1.92	47.2	0.00**
Practice	10	Control Group	3.51±0.95	3.95±0.69	12.4	0.81NS
		Experimental Group	4.35±0.91	7.52±0.71	1.04	0.02**

*- significant at 5% level, ** -significant at 1% level; NS -not significant

Table 5. Nutrition knowledge of adolescents based on Z scores

Standard Mean scores*	Control group (N=100)		Experimental group I (N=100)	
	Pre test	Post Test	Pre test	Post test
Excellent >80	-	-	-	-
Very good 70-79	-	-	-	2
Good 60-69	-	-	-	63
Satisfactory 50-59	-	-	-	11
Regular 40-49	-	45	-	24
Poor 30-39	-	15	-	-
Very poor 20-29	56	20	62	-
Bad	44	20	38	-

The two-tailed p-value was 0.02 which means the mean final attitude was increased (3.71) which was significant at a 1% level. The promotion of adolescent sexual and reproductive health and the prevention of diseases are among the key reasons for menstrual hygiene. Our study found that the majority of adolescent girls used sanitary pads (commercial or reusable) during their menstruation. This is similar to reports from Lawan and colleagues from Nigeria but in contrast to the study conducted in India and Adinma's study where the majority was found to be using toilet rolls to manage menstrual blood (Lawan et al., 2010). Ciccone et al. (2010) study has clearly demonstrated that educating the subject on health and management will have greater impact in reducing the burden of risk. The outcome of the work warrants a strong partnership between the care manager and the subject and collaboration between the physician and the care manager in the health management. Our

results are in agreement with the above study (Ciccone et al., 2010).

Nutrition knowledge of adolescents based on Z scores:

Results of the Z score of adolescents reported that in the control group initially 44 percent of them were in bad nutritional knowledge category and 56 percent came under very poor (20-29) nutrition knowledge and after one week. 44 percent of the subjects were shifted to poor category (30-39) and 36 percent were regular (40-49) nutritional knowledge and remaining 16 percent and 4 percent were very poor (20-29) and bad nutritional knowledge category respectively. Results of the experimental group indicated that initially 44% of the subjects were in the bad nutritional knowledge category and 56 percent were in very poor (20-29) nutritional knowledge after nutrition education 24 percent of the adolescent were shifted to a regular category, 11 percent to satisfactory (50-59) and 63% of them were in a good category. Following the findings from our study, 55.4% believed menstruating females should not consume poultry and sour food items. Sapkota et al., (2014) done his finding in rural Nepal regarding food taboos and this was agreed. Despite the expansion of the knowledge horizon, cultural taboos in society prevent a shift of attitude; thus, practice among adolescents on menstrual hygiene management. In the name of history, this case shows the desperate need to counter harmful practices (Sapkota et al., 2014).

CONCLUSION

Nearly three forth of the participants had good knowledge of menstruation and menstrual hygiene but they were not following due to the taboos. The practice of menstrual hygiene was satisfactory (80%). In conclusion, although adolescents' attitude toward menstruation was relatively positive; they mostly had poor knowledge about menstrual hygiene; consequently, a poor practice was expected. Also, the results indicated that students' mothers were the main source of their information on mensuration. It is very important to become aware of the need for knowledge about good menstrual practices. Health data on menstrual hygiene should also be stressed by the mass media. Policymakers and stakeholders should also set up a health education campaign to raise knowledge of good menstrual hygiene and practice. Hence, awareness through the change in curriculum and more friendly relationship between the students and the teachers will contribute significantly to the improvement in the status of menstrual hygiene and overall health of the adolescent.

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