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A Cross - Sectional Study on Menstrual Hygiene Knowledge and Practices among Adolescent Girls in Tribal Population in South India

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ABSTRACT

Background: World health Organisation defines adolescents as young people between 10 and 19 years of age. Around 16% of world's population are adolescents. Transition period from childhood to adult life is termed as adolescents. It is an important and a very sensitive period in the human life cycle. Many developments like physical, mental and social development occur in this adolescent period. Knowledge about menstruation and its hygiene among adolescent girls is grossly inadequate. As a result, they suffer intense mental stress due to lack of proper guidance and support regarding proper menstrual hygiene practices.

Methodology: The community-based study was conducted in Valavanthi Primary Health Centre, Salem, Tamil Nadu, India. The sample size was attained by multi-stage sampling. By simple random sampling, Salem District was chosen. The respective block, primary health centre and sub-centres were chosen by lottery method.

Results: 73.5% girls had good knowledge about menstruation. 96.3% girls knew about the sanitary material ideally used during menstruation. 42.3% knew about the frequency of changing pad per day as 4-6 times and 98.5% girls had good knowledge about disposal of pads. 54 % of the study participants had good menstrual hygiene practices. Menstrual hygiene practices were good in adolescent girls who lived in joint families.

Conclusion & recommendations: Educational interventions can bring many changes for less discussed topics like menstruation. By social marketing (making low-cost sanitary pads available), better hygienic practices can be adopted. In the school curriculum, safe hygiene and sanitary practices should be included and better communication between adolescent girls and their teachers, mother. Adolescent girls to be encouraged to attend awareness program regularly conducted at Primary Health Centre and adolescent clinics.

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Introduction

The term adolescence comes from Latin word meaning "to grow to maturity" [1]. World Health Organisation defines adolescents as young people between 10 and 19 years of age [2]. Around 16% of world's population are adolescents [3]. Transition period from childhood to adult life is termed as adolescents. It is an important and a very sensitive period in the human life cycle. Many developments like physical, mental and social development occur in this adolescent period [4]. Currently, one in every five people on the earth is an adolescent and 85% of these adolescents live in developing countries. In India, 20.07% of the total population are adolescents [5].

Menstruation is an important change that occurs in an adolescent girl [6]. Menstruation begins with menarche and ends in menopause. Menstruation is a regular cyclical process which occurs throughout

child bearing period with the exception of pregnancy and lactation. It is a physiological process, which occurs in girls. It is important that every girl knows about the changes that occurs during menstruation. Menstrual hygiene related practices are still clouded by socio-cultural restrictions, taboos in India [4]. Misconception and malpractices about menstrual hygiene could result in adverse health problems like reproductive tract infection and urinary tract infection [7].

Knowledge about menstruation and its hygiene among adolescent girls is grossly inadequate. Various restrictions are imposed on adolescent girls during the menstruation period. These restrictions have reinforced negative attitude in the minds of adolescent girls. Several studies have reported about these restrictions which include restrictions to go to school, play, work, to religious holy places and also dietary restrictions.

Adolescents are hesitant to seek help during menstrual period from parents, friends and health care providers, which in turn leads to ignorance of hygienic menstrual practices among adolescent girls⁶.

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Adolescent girls are at risk of many diseases due to poor personal hygiene. A common etiology of gynecological diseases is poor personal hygienic practices during menstruation. There is an inter-relationship between socioeconomic status, menstrual hygiene practices and reproductive tract infection. Reproductive tract infections lead to increased incidence of cervical cancer. Also, it leads to increased incidence of HIV/AIDS, infertility, ectopic pregnancy, and a myriad of other symptoms [8].

As a result, they suffer intense mental stress due to lack of proper guidance and support regarding proper menstrual hygiene practices [7]. Health needs of adolescent girls have seldom been addressed in an adequate manner. Majority of girls acquire knowledge about menstruation and menstrual hygiene mostly through their parents, relatives and friends. Knowledge about menstrual hygiene and its practices plays a vital part of health education for adolescent girls [9,10]. Safe menstrual hygiene practices will avoid risk of RTI and its consequences. This would lead to improvement in adolescent health and maternal health in the future.

Although many studies had been done on reported menstrual practices among adolescent girls in India, very few were conducted among those who belong to most backward classes, scheduled caste and scheduled tribes. Hence, the present study is done.

OBJECTIVES OF THE STUDY:

1. To study the socio-demographic profile among tribal adolescent girls in Salem district.
2. To assess the menstrual hygiene knowledge and practices & their association among the same study population.

MATERIAL AND METHODS:

This study was conducted at the community level as a community based cross sectional study to estimate the menstrual hygiene practices and the factors influencing the menstrual hygiene practices among tribal adolescent girls in Salem district, Tamil Nadu. The community-based study was conducted in Valavanthi Primary Health Centre, Salem, Tamil Nadu, India. The study was carried out for a period of one year from August 2018 to July 2019. Tribal adolescent girls in the age group of 10 to 19 years were the study participants.

Sample size: The sample size was calculated considering a prevalence of menstrual hygiene practices to be 20% (11) from previously published studies, relative precision 20% and 5% non-response, the sample size was calculated to be 400 and found adequate. The sample size was attained by multi-stage sampling. By simple random sampling, Salem District was chosen. The respective block, primary health centre and sub-centres were chosen by lottery method. Finally, there were 1194 adolescent girls registered in the respective anganwadi centre. Four hundred respondents were selected by simple random sampling using a random number table. When two respondents were selected from the same house, both were selected for the study.

Inclusion criteria: 1) Adolescent girls in the age group of 10 -19 years who attained menarche. 2) Having at least three continuous menstrual cycles.

Exclusion criteria: 1) Adolescent girls in the age group of 10 - 19 years those who had not attained the menarche. 2) Adolescent girls who have psychological problems. 3) Adolescent girls who are seriously ill. 4) Adolescent girls who are not able to contact for 3 consecutive visits.

The data was collected from those who satisfied the inclusion criteria. If the study participants were above the age of eighteen years, a written informed consent was obtained from the study subject and if the study participants were below eighteen years of age, a written informed consent was obtained from her parents. The data collection was done using a semi structured questionnaire in the local language by interview method.

Statistical Analysis: Data was entered in MS Excel and analyzed using the Statistical Package for Social Sciences (SPSS) Version 16.

Descriptive statistics such as Mean / Median and Standard Deviation were employed to describe continuous variables, while frequency distributions were obtained for dichotomous variables. Association between qualitative variables were done using Chi square test. We used 95% confidence interval. A p value of less than or equal to 0.05 has been considered to be significant.

Ethics approval: Data collection was done in the study area after obtaining the due permission from the Head of the Department, Department of Community Medicine and the Dean, Stanley Medical College, Directorate of Public Health and Preventive Medicine (DPH), Deputy Director of Health Services (DDHS) of Salem district and approval from the Institutional Ethics Committee. Health education was given to all the study participants regarding the proper menstrual hygiene practices.

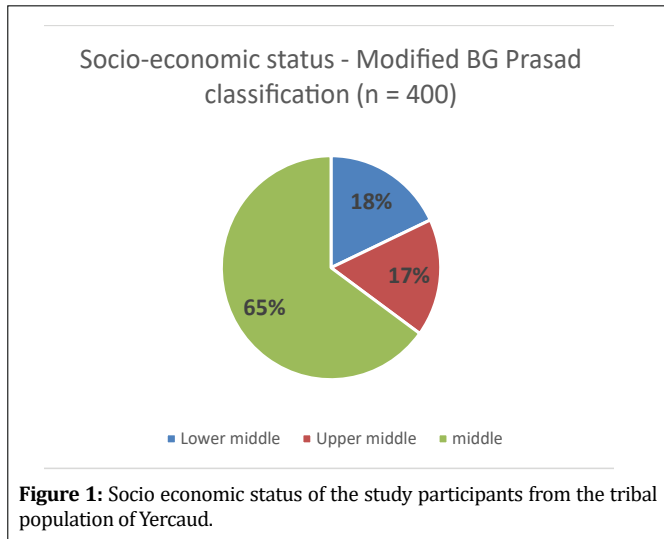
Results: A total of 400 tribal adolescent girls in the age group of 10-19 years were interviewed for the study. Table 1 shows the socio demographic characteristics of the study participants.

I. Socio demographic details: The mean age of the study participants is 15.10 ±1.6 years. All of them were literates. Majority of the study participants 208 (52%) had completed up to high school. Majority of the study participants 142(35.5%) were second order of birth. Most of the study participants 391 (97.8%) were unmarried. Majority of the study participants belongs to nuclear type of family. Out of the 400 adolescent girls, 380 adolescent girls (95%) attained menarche between the age group of 10 - 14 years. Majority of the adolescent girls 338 (84.5%) had regular menstrual cycles (**Table 1**).

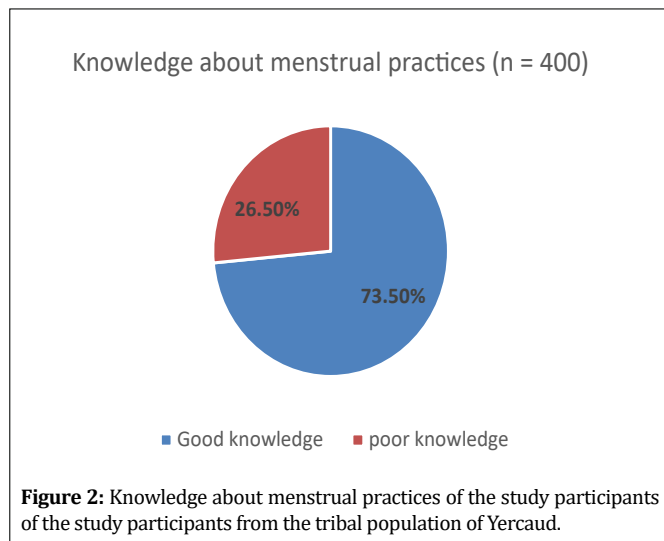
The study area being a tribal population, the per capita income classification of Modified BG Prasad scale was used to arrive at the socio-economic status. Using the Consumer Price Index (Industrial Worker) for the month of November 2018, which was 302, the Modified BG Prasad Classification was updated (annexure). Figure 1. Shows socioeconomic classification as per the Modified BG Prasad Scale. Majority of the study participants belongs to lower middle classes 260 (65%) while only 0.3 % of the study participants belong to the upper class (**Figure 1**).

Socio-demographic characteristics	Categories	Number of study participants n = 400(%)
Age in years		
	10-14 years	171 (42.8%)
	15-19 years	229 (57.2%)
Education		
	Middle school	73 (18.3%)
	High school	208 (52%)
	Higher secondary	113 (28.3%)
	Post graduate/degree	6 (1.5%)
Birth order		
	First	178 (44.5%)
	Second	142 (35.5%)
	Third	61 (15.3%)
	Fourth	16 (4%)
	Fifth	3 (8%)
Marital Status		
	Married	9 (2.3%)
	Unmarried	391 (97.8%)
Family type		
	Nuclear	299 (74.8%)
	Joint	101 (25.3%)
Menarche attained (age in years)		
	10 - 14	380 (95%)
	15 - 19	20 (5%)
Menstrual cycle pattern		
	Regular	338 (84.5%)
	Irregular	62 (15.5%)

Table 1: Socio-demographic details of the respondents of the study from the tribal population of Yercaud.



Out of 400 adolescent girls, 294 (73.5%) had good knowledge about menstrual practices. Total knowledge score was 5. The scores 4 and 5 were taken as good knowledge and the scores 1, 2 and 3 were taken as poor knowledge. The minimum score for knowledge about menstruation among the study participants was one and maximum score was five (**Figure 2**).



In the study, (324) 81% of the study participants had correct knowledge that menstrual bleeding was physiological. Knowledge about usage of sanitary pad was present in (385) 96.3% of the adolescent girls. About 169 (42.3%) adolescent girls had the knowledge about changing the sanitary pad 46 times per day. About (394) 98.5% of the adolescent girls had correct knowledge about the ways of disposal and adopted burning as the method of disposal (**Table 2**).

Out of the 400 adolescent girls, 379 (94.8%) girls were using sanitary pad currently. 179 (44.8%) adolescent girls changed their sanitary pads 3 times per day and 163(40.8%) adolescent girls changed their sanitary pad 4-6 times per day. 297(74.3%) adolescent girls stored and disposed the sanitary pad every day. Majority of the adolescent girls 394(98.5%) used burning as a method of disposal. 287 (71.8%) adolescent girls, cleaned their genitals with soap and water during menstruation and 82 adolescent girls were used only water for cleaning their genitals during menstruation. Out of the 400 adolescent girls, 73 girls were cleaned their genitals every time after urination / defecation during menstruation. All the adolescent girls bathed daily during menstruation and all the girls changed their undergarments daily during menstruation (**Table 3**).

Out of the 400 study participants 216(54%) of adolescent girls had good menstrual hygiene practices. The minimum score for menstrual hygiene practices among the study participants was 13 and the maximum score among the study participants was 19. None of the study participants got the score 20. The mean score for menstrual hygiene practices among the study participants was 17.40 ± 1.4 (**Figure 3**).

Among the study participants, those who had good knowledge on menstrual hygiene had good menstrual hygiene practices. This association was found to be statistically significant.

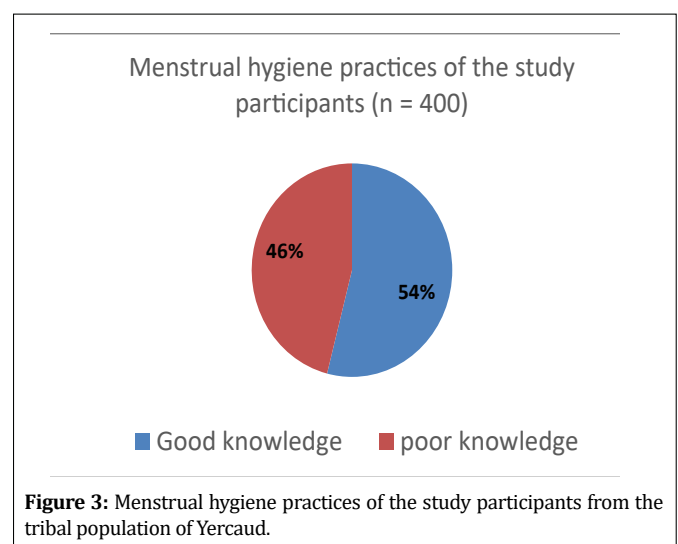
DISCUSSION

In the present study when the participants were asked about the menstruation, 73.5% girls had good knowledge about menstruation, 96.3% girls knew about the sanitary material ideally used during menstruation, 42.3% knew about the frequency of changing pad per day as 4-6 times and 98.5% girls had good knowledge about disposal of pads. A study done at Belgaum by Pokhrel et al showed that 52.1% of participants knew that menstruation was physiological, 56.4% used sanitary pads, 13.2% of the respondents changed pads 4 – 6 times per day and 19.8% respondents burnt it. Our study portrays a better knowledge and practice scores compared to the Belgaum study. This could be attributed to the VHNSC (Village Health Nutrition and Sanitation Campaign) conducted monthly by the PHC Medical officer and field workers [12].

Adrija et al in their study at Kolkata proposed that 54% of respondents knew bleeding was physiological and 92% of the respondents used sanitary pads. These tally with our findings. A point of note is, nearly 40% of respondents clean their genitalia after toilet and menstruation [13]. Our study has this practice only in 18.3%. This could be improved by adding this as a component of discussion in the VHNSC meetings and school health programs like Rashtriya Bal Swasthiya Karyakram (RBSK).

Shah et al (2013), did a study on menstrual hygiene among tribal adolescent girls in rural Gujarat which after intervention showed that 32% girls were using sanitary pads instead of cloth [14]. Our study depicts the effectiveness of community-based intervention programs as our baseline sanitary pad usage was 96.3%.

Rustogi et al did a systematic review on interventions to improve menstrual health and challenges faced in doing it. As proposed by him, these interventions like demonstrations, lectures, discussions, provision of sanitary pads and soaps have improved menstrual hygiene in most places [15]. Good menstrual hygiene practices among tribal adolescent girls when compared to other studies, is definitely a contribution from the associated health programmes like RBSK, VHNSC and RMNCH + A.



S.No	Correct knowledge about menstruation	Number of study participants n =400(%)
1	About the cause for menstrual bleeding	324 (81%)
2	About the sanitary material ideally used during menstruation	385 (96.3%)
3	About the frequency of changing pad 4 – 6 times per day	169 (42.3%)
4	About ways of disposal of pad	394 (98.5%)

Table 2: Correct knowledge about menstruation among study participants of the study from the tribal population of Yercaud.

Correct menstrual practices	Number of study participants n = 400 (%)
Sanitary material used during menstruation	379 (94.8%)
Frequency of changing pad per day	163 (40.8%)
Storing pad	297 (74.3%)
Disposal of pad	394 (98.5%)
Not reusing pads	400 (100%)
Cleaning genitals	400 (100%)
Clean with soap and water	287 (71.8%)
Cleaning every time after urination/ defecation	73 (18.3%)
Bathing daily during menstruation	400(100%)
Changing undergarments daily	400 (100%)

Table 3: Correct menstrual practices of the study participants of the study from the tribal population of Yercaud.

Knowledge Score	Practice score		Total	Chi-square	df	p value
	Good	Poor				
Good	188 (63.9%)	106 (36.1%)	294	44.178	1	0.000* (S)
Poor	28 (26.4%)	78 (73.6%)	106			
Total	216 (54%)	184 (46%)				

*p-value < 0.05 will be considered significant (S)

Table 4: Association between knowledge score and practice score of the study from the tribal population of Yercaud.

SUMMARY/CONCLUSION

In the present study sanitary pads were used by 94.8% adolescent girls. 73.5% of the study participants had good knowledge about menstrual hygiene and 54 % of the study participants had good menstrual hygiene practices. Menstrual hygiene practices were good in adolescent girls for those who lived in joint families. Also, positive results in the study showed that those who had good knowledge about menstrual hygiene had correct menstrual hygiene practices. Also, it is observed in the study that menstrual hygiene practices were good in girls with higher educational status. Health education programme with specific focus on menstrual hygiene practices will bring significant positive changes in menstrual hygiene practices. To reduce the sufferings of adolescent girls, menstrual health related issues should be addressed at younger ages at 13, 14, 15 years and this ensures the girls health which is regarded as the index of a healthy society. Educational intervention can bring many changes for less discussed topics like menstruation.

RECOMMENDATIONS

By social marketing (making low-cost sanitary pads available), better hygienic practices can be adopted. In the school curriculum, safe hygiene and sanitary practices should be included and better communication between adolescent girls and their teachers, mother. Adolescent girls to be encouraged to attend awareness program regularly conducted at Primary Health Centre and adolescent clinics. Further studies involving teacher led education on menstrual hygiene can be done to improve the knowledge of the adolescent girls. Inter-sectoral co-ordination of various departments like Education, Health and Family welfare, social welfare, Human Resource Development, Women and child development should integrate together for the upliftment of adolescent health.

LIMITATION OF THE STUDY:

In the present study, the teachers are not included and teacher led intervention measures are not studied. We did not study the associated gynecological problems related to menstruation. The study area is limited to one tribal block in Salem district.

Competing interests: The authors declare that they have no competing interests.

Authors' Contributions: Principal Investigator: SR; Senior author: KCVG; Conception and design: SR, MDM, SD, JGK; Data collection: SR, MDM, SD, JGK; Development of data capture tool: SR, MDM, SD, JGK, KCVG; Data analysis and interpretation: SR, MDM, SD, JGK, KCVG; Preparation of first draft; SR, JGK; Critical review and approval of final draft: all authors.

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