

Assessment of Knowledge on Menstrual Hygiene Among Adolescent Girls in a Selected School, Puducherry.

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Abstract

Introduction: Menstrual hygiene is also an important aspect of health among adolescents, and many adolescent girls were not properly informed because of taboos and misinformation in their culture and insufficient education. Lack of poor menstrual hygiene practices may result in infections, absenteeism at school, and psychosocial distress. Thus, knowledge levels among adolescent girls should be evaluated to make the right health intervention plans.

Aim: To measure the level of knowledge about menstrual hygiene among the adolescent girls and to evaluate how it relates to the choice of demographic variables.

Methodology: The research design adopted is a quantitative descriptive research design. It was done in Government Higher Secondary School, Thiruvandarkovil, Puducherry. Purposive sampling was used to pick a sample of 50 adolescent girls between the ages of 13 and 17 years who had reached the menarche age. A structured questionnaire was adopted to collect the data in terms of demographic variables and knowledge-related items pertaining to menstrual hygiene. Analysis was done using the descriptive and inferential statistics.

Results: The results found out that 66 percent of the participants were found to have good knowledge, 24 percent had moderate, and 10 percent good knowledge with no one having inadequate knowledge. The mean knowledge score was 25.03 ± 3.81 . The relationship between the level of knowledge and age and educational status was statistically significant ($p < 0.05$). Other demographic variables did not have any significant association.

Conclusion: The results of the study are that the majority of adolescent girls had a fairly good level of knowledge on menstrual hygiene. Nevertheless, special educational interventions will be required to increase awareness and healthy menstrual practices among adolescent girls as well.

Keywords: Menstrual Hygiene, Knowledge, Adolescent girls

I. Introduction

Menstruation is a physiological process that starts at adolescence, usually starting at the age of between 9-16 years which is the age of sexual maturity and a potential to bear a child. At this transition phase, girls experience a lot of physical, psychological and developmental changes. The average cycle takes 3-5 days and 28 days, and occurs on a regular basis (28 days). It depends on the stress and illness, as well as physical activity and nutrition. The hygiene of improper menstrual care, such as use of clean absorbents, regular bathing, forward-back cleaning of the perineum and breathable undergarment, are paramount in health. Pre-menstrual awareness pre-menarche is not well known and many girls tend to get this information only later on either through the family or through friends and is often coupled with cultural taboos. Misconceptions, harmful restrictions and stigma. Menses are still seen as dirty in a lot of places in India. Lack of knowledge and unhealthy habits predispose to reproductive tract infections (RTIs) and other complications. The number of women without proper menstruation hygiene resources is in excess of 500 million around the world. Sanitary napkins among adolescents in India are 57.6% (NFHS-5), and they vary across regions. Though in places such as Puducherry, the gaps are higher, there are still gaps in the areas of awareness, safe disposal, and the free discussion, especially in the rural regions.

Need for the Study

According to Anne Maria Van Eijk et al. (2016), adolescents make up about 24% of India's population, yet many adolescent girls lack adequate knowledge about puberty and menstruation. Nearly half of girls aged 12-15 years are unaware of menstruation before menarche. As a major developmental milestone, menarche can evoke fear, embarrassment, or distress when girls are unprepared, whereas prior knowledge promotes a more positive response. Studies consistently report significant knowledge gaps. Research by James (2003), Kolf (2001), and Sreenivasa (1999) found inadequate understanding, misconceptions, and emotional distress among adolescent girls. A 2007 study further showed that cultural taboos and lack of information lead many rural girls to practice unsafe menstrual hygiene, increasing the risk of reproductive tract infections and long-term health issues. Limited

open discussion in families and schools—especially in rural or conservative settings—perpetuates misinformation and unhealthy practices. Therefore, comprehensive menstrual education on biological changes, hygiene, safe use and disposal of sanitary materials, and stigma reduction is essential to promote physical, psychological, and social well-being among adolescent girls.

II. Methodology

A descriptive research design positioned a quantitative research methodology to determine the degree of knowledge about menstrual hygiene among teenage girls. The schools used in the study were Government Higher Secondary School, Thiruvandarkovil, Puducherry. All the adolescent girls who study at the selected school were the target population. There were 50 adolescent girls aged 13-17 years who reached menopause and met the inclusion criteria as the sample. The participants that were willing to participate and present during the data collection process were identified through a purposive sampling approach, whereas the unwilling participants, the participants who were absent, and the participants with known cognitive or psychological disorders were not included.

Tools and data collection procedure

A structured questionnaire made of two sections was used to collect data using a structured questionnaire. Section A contained demographic variables that were age, religion, education, parents education, parents income, type of house, type of family, number of family members, residential area, and type of school. Section B included questions based on the knowledge that would focus on menstrual hygiene, such as its definitions, hygienic, absorbents, and disposal. Interpretation of knowledge scores was done in predetermined statements of highly adequate to highly inadequate.

The school authorities were also consulted before hand and informed consent was taken with the participants. The objective of the research was clarified the questionnaire was given out in a classroom. Appropriate guidelines were given and there was clarification of doubts and response confidentiality guaranteed.

Statistical analysis

The data obtained were checked with the help of the descriptive statistics which allow summarizing the level of knowledge such as the frequency, percentage, the mean, and the standard deviation and methods of the inferential statistics such as Chi-square test were also applied to outline the connection between knowledge scores and the desired demographic variables.

III. Results

Demographic Variables

The majority of the respondents had the age range of 13-14 years (46%), then 15-16 years (34%) and 17 years (20). Most of them were Hindu (66%), with 32 percent Muslim and 2 percent Christian. More than half of the girls were enrolled in 9th -10th standard (54%), and 46% were in 11th -12th standard and none in 7th -8th standard. With respect to the education of parents, majority of them were educated (68%), 22% did not read, and 10% were graduates; there were no postgraduates. Over 50 percent of the households had incomes of 5,000-10,000/month (56%), then 10,001-15,000/month (30%), and higher than 15,000/month (14%). The majority of the respondents were staying in terrace houses (62%), with 36 percent staying in pucca houses and 2 percent staying in semi-pucca houses. Most of them are nuclear families (58%), and the rest are joint families (42%). The family size comprised 3-5 members in most families (64%), 6-7 members (22%) and above 7 members (14%). They were mostly in the rural areas (78%), with 22% being in the urban areas. The median age at menarche was 1315 (60%), then 11-12 (38%) and 17 years (2%).

Level of Knowledge

The table 1 indicates the level of knowledge distribution among adolescent girls referring to menstrual hygiene (N=50). Most of the respondents, 33 (66%), were well informed and then 12 (24) were mediocely informed. A low percentage, 5 (10 percent), displayed high knowledge, and none of the respondents showed poor knowledge. The standard deviation of the mean knowledge score was 3.81 and 25.03 was the mean knowledge score which showed adequate level of knowledge among the respondents.

The Chi-square test showed that there was statistically significant correlation between the level of knowledge about the menstrual hygiene and the age variable and educational status of the adolescent girls, which means that the level of knowledge was significantly different between the age groups and the educational status of the adolescent girls.

Table 1: Frequency and percentage wise distribution of the demographic variables of the adolescents girls N= 50

S.NO	Demographic Variables	Number of frequency	Percentage (%)
1.	Age in year		
	a) 13-14 years	23	46
	b) 15-16 years	17	34
	c) 17 years	10	20
2.	Religion		
	a) Hindu	33	66
	b) Muslim	16	32
	c) Christian	1	2
3.	Education		
	a) 7 th std to 8 th std	0	0
	b) 9 th std to 10 th std	27	54
	c) 11 th std to 12 th std	23	46

Regarding **age**, the table showed that the majority of participants are in the 13-14 years age group, comprising 46% of the sample. A smaller proportion, 34%, fall within the 15-16 years range, while 20% of the participants are 17 years old. In terms of **religion**, most respondents identify as Hindu (66%), with a smaller portion being Muslim (32%) and only 2% identifying as Christian. The **education** level of the participants shows that over half (54%) are in the 9th-10th standard, while 46% are in the 11th-12th standard, and no participants are in the 7th-8th standard.

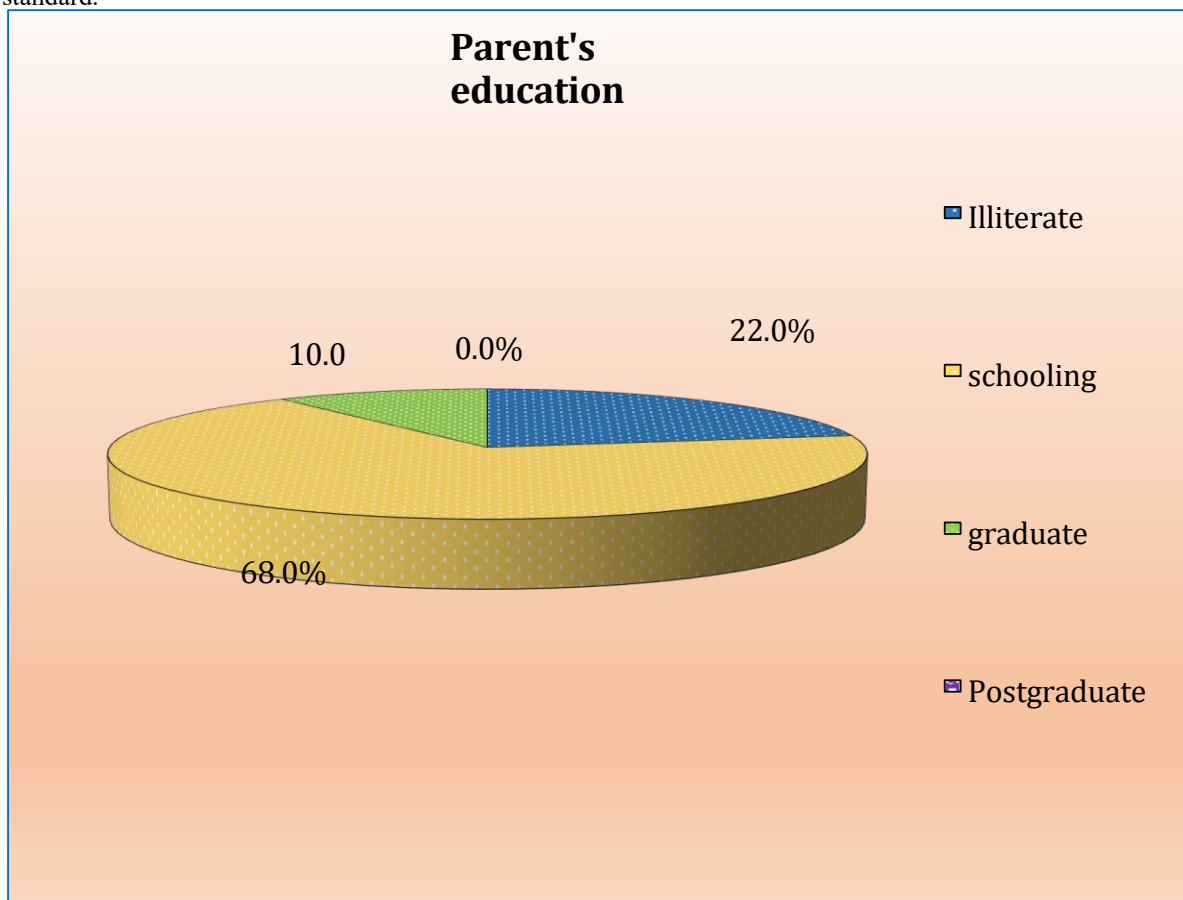


Figure 1: Bar diagram showed Percentage wise distribution of the adolescent girls according to the parent's education, a significant number of parents have completed schooling (68%), 22% are illiterate, and 10% are graduates, with no parents having a postgraduate education

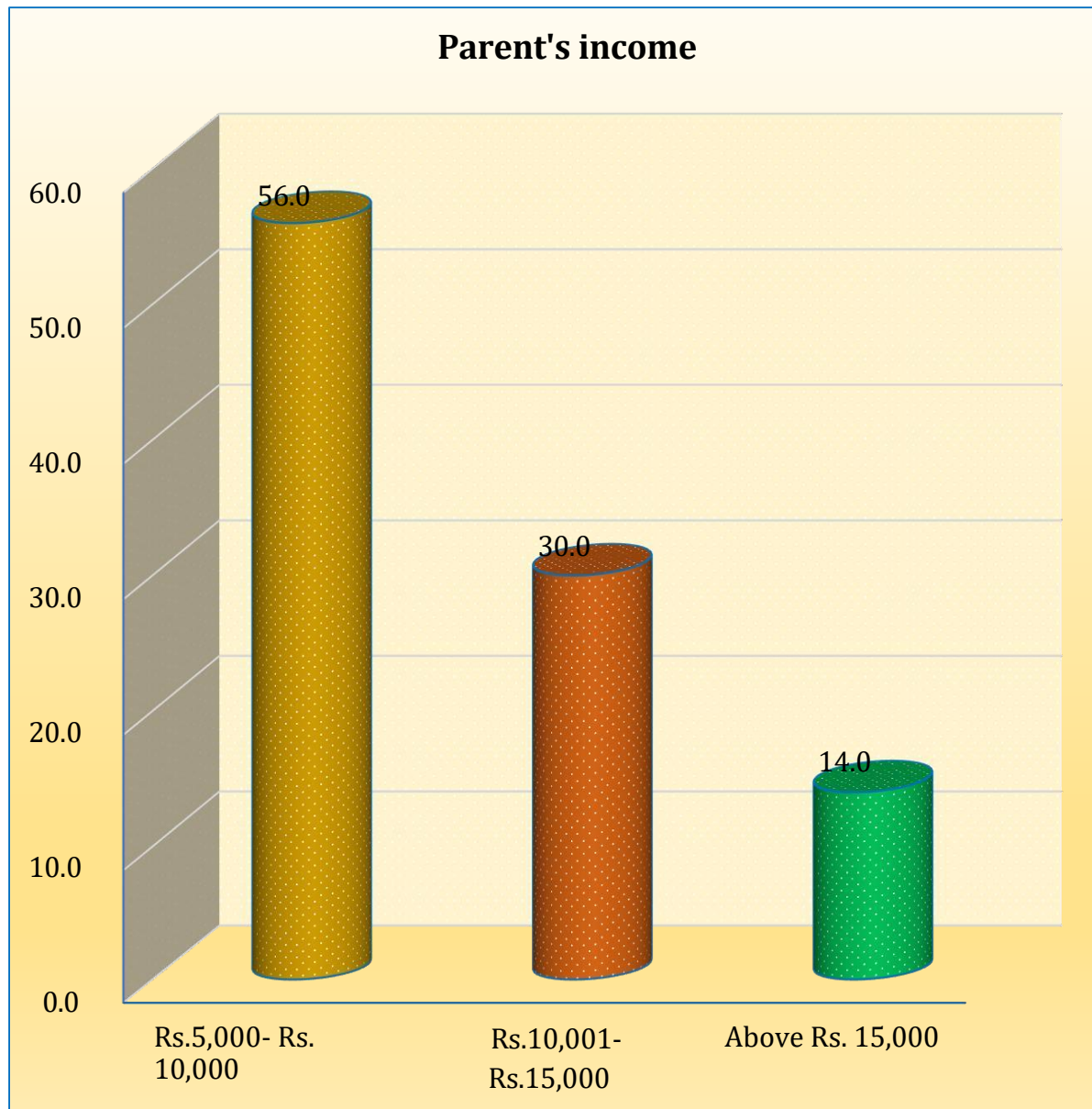


Figure 2: Bar diagram showed Percentage wise distribution of the adolescent girls according to the parent's income For the majority earn between Rs. 5,000–10,000 (56%), followed by those earning between Rs. 10,001–15,000 (30%) and a smaller group earning above Rs. 15,000 (14%).

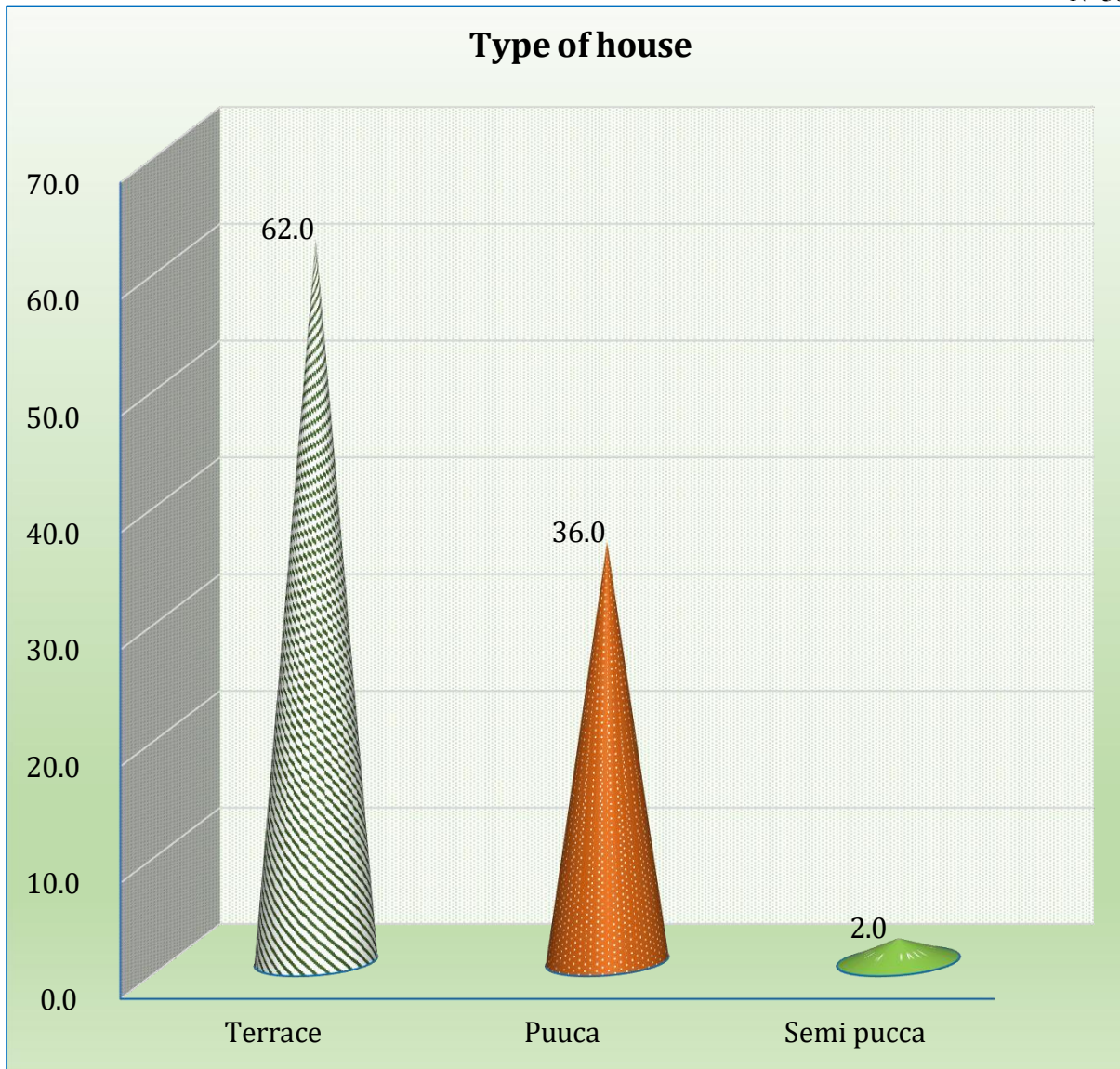


Figure 3: Bar diagram showed Percentage wise distribution of the adolescent girls according to the type of house, most participants live in a terrace house (62%), followed by those in pucca houses (36%) and a small percentage in semi-pucca houses (2%).

Table 2: Frequency and percentage wise distribution of the demographic variables of the adolescents girls N= 50

Serial No.	Demographic Variables	Number of frequency	Percentage (%)
1.	Type of family		
	a) Nuclear family	29	58
	b) Joint family	21	42
2.	Number of family members		
	a) 3-5	32	64
	b) 6-7	11	22
	c) More than 7	7	14
3.	Types of residential area		
	a) Urban	11	22
	b) Rural	39	78
4.	Age of attended menarche		
	a) 11-12 years	19	38
	b) 13-15 years	30	60
	c) 17 years	1	2

In terms of **type of family**, most families are nuclear (58%), while 42% belong to joint families. The **number of family members** shows that 64% of participants live in families with 3-5 members, 22% have 6-7 members, and 14% belong to families with more than 7 members. Regarding the **types of residential area**, most participants live in rural areas (78%), while 22% reside in urban areas. Finally, the **age at which menarche occurred** shows that 60% of participants experienced menarche between the ages of 13-15 years, 38% between 11-12 years, and 2% at 17 years.

Section B: Assessment on the level of knowledge regarding Menstrual Hygiene among adolescent girls.

Table 3: Frequency and percentage wise distribution of the level of knowledge regarding Menstrual Hygiene among adolescent girls.

S. No	Level of Knowledge	Frequency	Percentage
		f	%
1.	Inadequate	0	0
2.	Moderate	12	24
3	Adequate	33	66
4	High	5	10
Mean : 25.03			
SD : 3.810			

Table 2 presents the distribution of menstrual hygiene knowledge levels among adolescent girls (N = 50). The results showed that the majority of the participants have adequate knowledge 66%, while 24% have moderate knowledge. A smaller percentage, 10%, have high knowledge, and none of the participants have inadequate knowledge. The mean knowledge score is 25.03, with a standard deviation of 3.810, indicating the spread of knowledge levels within the group.

Table 3: Level of knowledge regarding Menstrual Hygiene among adolescent girls.. (n = 50)

S. No	Level of Knowledge	Frequency	Percentage
		f	%
1.	Inadequate	0	0
2.	Moderate	12	24

3	Adequate	33	66
4	High	5	10
Mean : 25.03			
SD : 3.810			

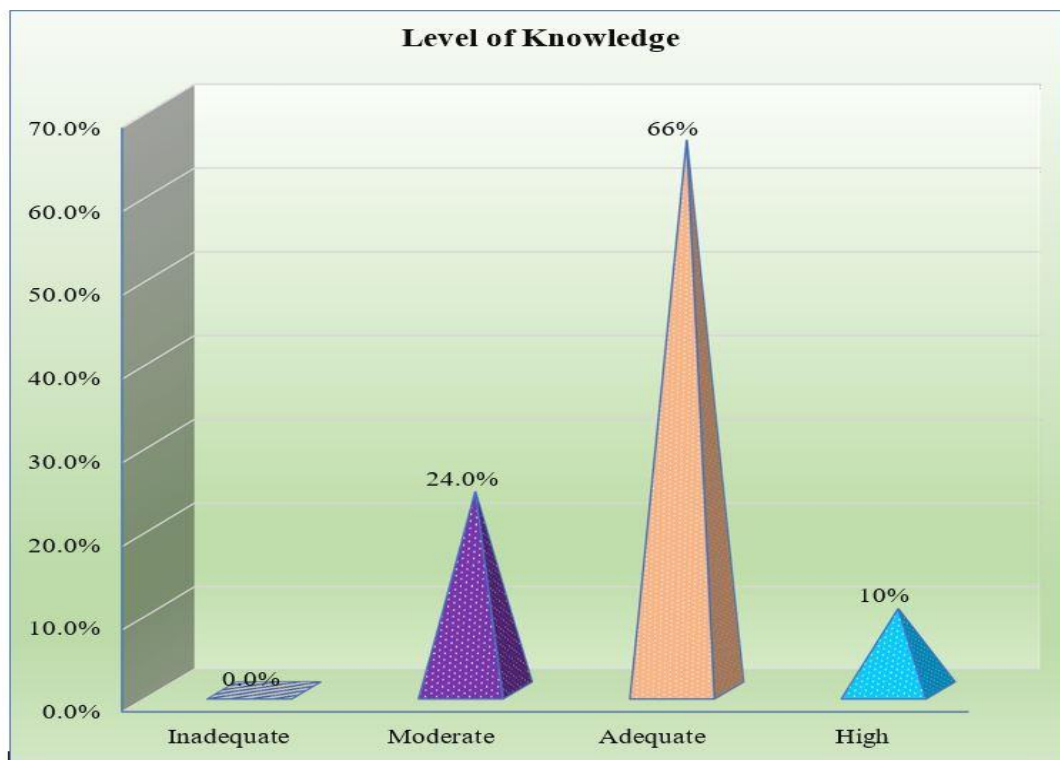


Figure: 1 Level of Knowledge

Table 4: Association between Level of Knowledge regarding Menstrual Hygiene and Selected Demographic Variables (N = 50)

S. No	Demographic Variable	Categories	Adequate F (%)	Moderate F (%)	High F (%)	Chi-square (X ² , df, p-value, Sig.)
1	Age	13–14 years	19 (63.3)	3 (10.0)	1 (3.3)	X ² =10.118, df=4, p=0.038 (S)*
		15–16 years	9 (30.0)	7 (23.3)	1 (3.3)	
		17 years	5 (16.7)	2 (6.7)	3 (10.0)	
2	Religion	Hindu	23 (76.7)	7 (23.3)	3 (10.0)	X ² =1.399, df=4, p=0.844 (NS)
		Muslim	9 (30.0)	5 (16.7)	2 (6.7)	
		Christian	1 (3.3)	0 (0.0)	0 (0.0)	
3	Education	7th–8th std	0 (0.0)	0 (0.0)	0 (0.0)	X ² =6.522, df=2, p=0.038 (S)*
		9th–10th std	22 (73.3)	4 (13.3)	1 (3.3)	
		11th–12th std	11 (36.7)	8 (26.7)	4 (13.3)	
4	Parent's Education	Illiterate	7 (23.3)	2 (6.7)	2 (6.7)	X ² =1.725, df=4, p=0.786 (NS)
		Schooling	22 (73.3)	9 (30.0)	3 (10.0)	
		Graduate	4 (13.3)	1 (3.3)	0 (0.0)	
		Postgraduate	0 (0.0)	0 (0.0)	0 (0.0)	
5	Parent's Income	Rs.5,000–10,000	20 (66.7)	6 (20.0)	2 (6.7)	X ² =0.996, df=4, p=0.910 (NS)
		Rs.10,001–15,000	9 (30.0)	4 (13.3)	2 (6.7)	
		Above Rs.15,000	4 (13.3)	2 (6.7)	1 (3.3)	

6	Type of House	Terrace	17 (56.7)	10 (33.3)	4 (13.3)	X ² =9.230, df=4, p=0.056 (NS)
		Pucca	16 (53.3)	1 (3.3)	1 (3.3)	
		Semi-pucca	0 (0.0)	1 (3.3)	0 (0.0)	
7	Type of Family	Nuclear	20 (66.7)	6 (20.0)	3 (10.0)	X ² =0.415, df=2, p=0.812 (NS)
		Joint	13 (43.3)	6 (20.0)	2 (6.7)	
8	Family Members	3–5	21 (70.0)	8 (26.7)	3 (10.0)	X ² =0.529, df=4, p=0.971 (NS)
		6–7	7 (23.3)	3 (10.0)	1 (3.3)	
		>7	5 (16.7)	1 (3.3)	1 (3.3)	
9	Residential Area	Urban	7 (23.3)	4 (13.3)	0 (0.0)	X ² =2.320, df=2, p=0.313 (NS)
		Rural	26 (86.7)	8 (26.7)	5 (16.7)	
10	Age at Menarche	11–12 years	15 (50.0)	3 (10.0)	1 (3.3)	X ² =3.137, df=4, p=0.535 (NS)
		13–15 years	17 (56.7)	9 (30.0)	4 (13.3)	
		17 years	1 (3.3)	0 (0.0)	0 (0.0)	

IV. DISCUSSION

The research results showed that 66 percent of adolescent girls had sufficient knowledge on menstrual hygiene, 24 percent of adolescent girls had moderate knowledge of menstrual hygiene and only 10 percent had high knowledge. None of the participants exhibited poor knowledge. An additional test revealed that the level of knowledge has a statistically significant relationship with age and educational status ($p < 0.05$). It was not found that the level of knowledge was significantly associated with the other demographic factors including religion, education and income of parents, type of house, type of family, family size, residential area and age at menarche ($p > 0.05$).

V. CONCLUSION

The research concluded that adolescent girls in the school identified showed a general satisfactory level of knowledge on menstrual hygiene with the majority of the research participants showing satisfactory knowledge and none showing inadequate knowledge. The level of knowledge was proved to be strongly correlated with age and the level of education, which suggests that older people and those with school education should understand better. But the other demographic variables did not make any significant impact. The results emphasize the need of further menstrual hygiene education to improve further the knowledge and healthy practices among girls during adolescence.

VI. RECOMMENDATIONS

Future studies with larger samples across different schools and regions are recommended to improve generalizability. Comparative research should be undertaken to assess the effectiveness of educational interventions on menstrual hygiene knowledge and practices. Additionally, schools should implement health education materials, visual aids, and awareness programs to promote safe menstrual hygiene practices among adolescent girls.

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