



## **A Study of Knowledge, Attitude, and Practices of Menstrual Hygiene among Adolescent Teenage Girls in and Around Anantapur Town**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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### **ABSTRACT**

Menstrual hygiene is defined as the principle of maintaining the cleanliness of the body during menstrual flow. It requires basic facilities such as appropriate clothes, soakage material, water, soap, and toilet facilities with privacy. Many studies have revealed that most adolescent girls had incomplete and inaccurate information about menstrual hygiene and physiology. It also revealed that mothers, television, friends, teachers, and relatives were the main sources that provided information on menstruation to adolescent girls. In our study, most of the girls belong to the age group of 15 – 17 that is 448 participants are from that age group which comprises about 89% and they mostly belong to intermediate which is around 442 students (88.4%). 90.6% of the girls knew that menstruation occurs only in females and 88% of the girls aware that the best sanitary products are pads and only 39.6% of girls knew about menstruation before menarche. It was observed that only 37.2% of girls knew that infection would occur if they don't clean their vagina regularly during

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their menstruation. Maximum that is 304 (60.8%) girls responded for dysmenorrhoea in the present study. The majority of these responses were in the age group of 13–15 years. The knowledge on menstruation and menstrual hygiene was found to be unsatisfactory although the practices were noted to be good. The majority of girls attained menarche in the study. Menstrual hygiene is an issue that needs to be addressed at all levels. In our study majority of the mothers were found to be illiterates, as mothers are the first informant to the majority of adolescent girls the health education activities can be extended to the mothers to improve awareness.

*Keywords: Menstruation; hygiene; teenage girls; awareness.*

## 1. INTRODUCTION

Menstrual hygiene is defined as the principle of maintaining the cleanliness of the body during menstrual flow [1]. It requires basic facilities such as appropriate clothes, soakage material, water, soap, and toilet facilities with privacy [2]. WHO has defined Adolescence as the period between 10-19 years of life. Adolescent girls constitute about 1/5th total female population in the world. Adolescence in girls has been recognized as a special period that signifies the transition from girlhood to womanhood [3]. The onset of menstruation is one of the most important changes occurring among girls during the adolescent years. The first menstruation (menarche) occurs between 11 and 15 years with a mean of 13 years [4]. Menstrual management is associated with the adoption of hygienic practices and acceptance of womanhood right from the onset of menarche [5]. Adolescent girls constitute an unprotected group, particularly in India. Much of the information about menstrual hygiene is imparted in the form of restrictions every adolescent girl should be made aware of the fact of menstruation before menarche, to enable her to accept it as a normal developmental process and manage it appropriately [6]. Several studies have reported restrictions during daily activities. Apart from these, they believe in specified taboos at menarche and menstruation. There is a substantial deficiency in the knowledge about menstruation among adolescent girls [7]. several research studies have revealed this gap and they showed that there was a low level of awareness about menstruation among the girls when they first experienced it. Social prohibitions and the negative attitude of parents in discussing the issues related to menstrual hygiene openly have blocked the access of adolescent girls to particular information, especially in the rural and tribal communities [7]. The first menstruation is often horrifying and traumatic to an adolescent girl because it usually occurs without her knowing about it. Infections due to lack of

hygiene during menstruation have been reported in many studies [7].

Many studies have revealed that most adolescent girls had incomplete and inaccurate information about menstrual hygiene and physiology. The social stigma attached to menstruation causes many girls and women to carry out dangerous unhygienic practices [8]. facing long-standing social stigmas attached to menstruating bodies, many become isolated from family, friends, and their communities. Often, they miss school and productive workdays and fall behind their male counterparts [8]

Hygiene-related practices of women during menstruation are of considerable importance, as it has 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 millions of women suffer from RTI, its complications, and often the infection is transmitted to the offspring of the pregnant mother [8]. Reproductive tract infections related to menstrual hygiene are thought to be endogenous infections and likely to be introduced to the reproductive tract through the materials used for absorbing menstrual blood or by poor personal hygiene during the menstrual period [9]. Use of sanitary pads and other good menstrual hygiene practices has shown protection of health from various infections and also improvement in attendance of the adolescent girls [9].

Most females experience some degree of pain and discomfort during the menstrual period, which can impact their daily activities, and disturb their productivity at home or their workplace. Discomfort of the menstrual pain affects the daily as well as professional life of the affected women. Among all the developmental milestones associated with the adolescent years, menarche may be the most important [10]. The main physical changes during the adolescent period

include the adolescent's growth spurt, gonadal growth, growth of secondary sexual organs and characteristics, changes in body composition, and growth of respiratory, circulatory, and muscular systems the onset of adolescence is usually associated with the commencement of puberty and the appearance of secondary sex characteristics. It is also a formative stage in terms of sexual and reproductive maturity which influences one's reproductive health and wellbeing throughout life [11].

Adolescents' problems constitute a bulk of cognitive states which are generally unrecognized and uncared furthering the disease burden. A large variety of morbidities such as nutritional deficiency disorders (stunting, wasting), menstrual disorders, etc. prevail among adolescents RTIs/STIs/HIV/AIDS have already appeared as serious problems which can further complicate existing problems like teenage pregnancies, unsafe abortions [12]. These complex socio-psychological morbidities and high-risk behavior of adolescents have been recognized as a threat to survival, growth, and development. More than 40-45 percent of adolescent girls have menstrual problems. These are mainly due to socio-psychological stress and emotional changes. Moreover, poor personal hygiene and unsafe sanitary conditions have also primarily resulted in gynecological problems among adolescent girls [12].

Due to lack of hygiene during menstruation, there has also been a high prevalence of reported cases of infections. It was also reported that repeated use of unclean napkins or improperly dried cloth napkins before its reuse results in harboring of micro-organisms and causing vaginal infections [12]. Poor menstrual hygiene may lead to problems such as itching or rashes in the perineal region, bad odor, and also major complications such as pelvic inflammatory disease and toxic shock syndrome [it is a rare but serious medical condition caused by staphylococcus aureus bacterium]. Women can also have related complications during conception and pregnancy. Unaddressed menstrual hygiene is also said to hamper the achievement of some of the millennium developmental goals. The need of the hour for girls is to have the information, education, and an enabling environment to cope with menstruation issues [13].

Endemic traditions do not allow adolescent girls to realize their rights in many parts of the world.

Although menstrual irregularity can be normal during the first few years after menarche, other menstrual signs and symptoms such as amenorrhea, excessive uterine bleeding, dysmenorrhoea, and premenstrual syndrome may indicate a pathological condition that requires prompt attention and referral. Thus, healthcare providers are of immense importance for these adolescent girls who are going through the pubertal transition. Healthcare providers have an opportunity to discuss reproductive health issues with mothers and their daughters [14].

## **2. METHODOLOGY**

### **2.1 Study Center**

Schools and colleges located in and around Ananthapuramu town.

### **2.2 Study Design**

Prospective observational study with a duration of four months

### **2.3 Study Population**

Sample size 500 girls from schools and colleges in and around Ananthapuramu town

### **2.4 Study Criteria**

#### **2.4.1 Inclusion criteria**

- Girls who started their menstruation and aged between 12-18 years

#### **2.4.2 Exclusion criteria**

- Girls who were not yet started their menstrual cycle
- Girls who have other health complications regarding the menstrual cycle

### **2.5 Study Period**

The study was conducted over six months (from October 2019- March 2020)

### **2.6 Method of Collection of Data**

A pre-designed questionnaire form that is self-validated was used for data collection. The questionnaire form did not contain the name of the girl, to protect the girl's identity at all points of the time. Girl's information regarding initial,

socioeconomic status, the lifestyle which includes food habits). To estimate awareness regarding menstruation, awareness regarding menstrual hygiene questions were presented in the questionnaire.

## 2.7 Statistical Analysis

The data was collected from the questionnaire were entered into the computerized excel worksheet (Microsoft excel 2009) subsequently the data were analyzed by using Graph pad InStat 3.03 and the data were presented in the form of tables and bar diagrams

Descriptive statistics (mean, proportions and percentages), chi-square test was used to analyze the data. P-value < 0.05 was considered statistically significant.

In our study, most of the girls belong to the age group of 15 – 17 that is 448 participants are from that age group which comprises about 89% and they mostly belong to intermediate which is around 442 students (88.4%).

Most of the girls are from rural settings which are around 62.8% (374) and the majority of them belongs to the poverty line (who are having white ration card) 339 (68%). Of all the girls educational status of their mothers are illiterates which comprise around 384 (77%)

### ▪ Knowledge

Table 2 notes that 90.6% of the girls knew that menstruation occurs only in females and 88% of the girls aware that the best sanitary products are pads and only 39.6% of girls knew about menstruation before menarche. It was observed that only 37.2% of girls knew that infection would occur if they don't clean their vagina regularly during their menstruation. So, there is a need to provide awareness about it. Maximum i.e. 62.4% of girls who attained their menarche responded as "aware" for their perceptions regarding menstruation.

### ▪ Attitude

It was noted that 283 (56.6%) girls had celebrations at home when they first attained menarche. In the attitude table, it was noted that 194 (38.8%) girls reported that they were scared when they first

attained menarche. 118 (23.6%) girls responded they were irritated when they attained menarche. 116 (23.2%) girls cried and only that is 58 (11.6%) girls responded that they were casual when they attained menarche.

Maximum responses i.e. 278 (55.6%) girls indicated that they were not allowed to do pooja or read holy books. Only 12 (2.4%) girls said that they have no restrictions during menstruation. 335 (67%) girls reported that they were forced by their family members to follow restrictions. 194(38.8%) girls had restrictions of food during menstruation.

### ▪ Practices

According to Table 3 majority of girls, 440 (88%) used sanitary pads during menstruation. 28 (5.6%) used cloth pieces, 16 (3.2%) used both. Maximum i.e. 313 (62.6%) of girls changed their material of protection 2-3 times daily. 65 (13%) girls changed pads of cloth pieces to less than 2 times/day. The best practice is to change the pad more than or equals to 4 times a day which was observed in 122(24.4%) girls.

446 (89.2%) girls took baths daily during menstruation cleaning of external genitalia < 2 times/day was found in 224 (44.8%). majority of the girls i.e. 434 (86.8%) discarded the pad or cloth pieces by throwing them into the dustbins. 33 (6.6%) flush the pads in the toilet which can lead to blocking of the sewerage system. Burning of the material for protection is the best option which was practiced by 31 (6.2%) girls.

### ▪ Menstrual morbidity

Maximum that is 304 (60.8%) girls responded for dysmenorrhoea in the present study. The majority of these responses were in the age group of 13–15 years. 46 (9.2%) girls suffered from irregular cycles with four of them in the age group of 12-14 years.

The premenstrual syndrome was found in 2 responses ages 16-18 years.

Menorrhagia was reported by 120 (24%) responses maximum in the age group of 15-17 years. Table 4 depicts that the association between menstrual morbidities and age-wise distribution is found to be highly significant.

▪ **Health seeking behavior**

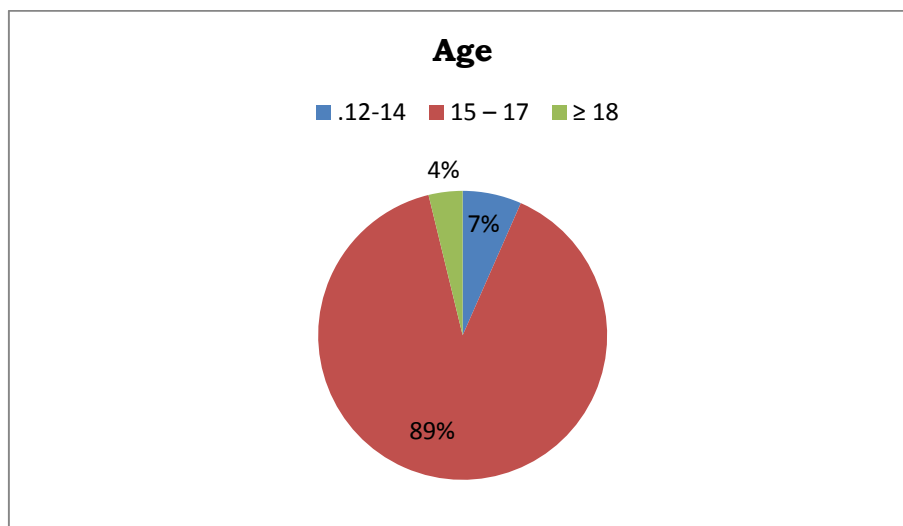
According to table 5, most of the girls 364 (72.8%) responded that they take their

mother's help for problems during menstruation, followed by sister and friends.

221 (44.2%) girls responded that they do not take any treatment because of no need and fear of side effects. 107 (21.4%) girls responded for home remedies. 114 (22.8%) took doctor-prescribed medicines and preferred females as doctors 421 (84.2%).

**Table 1. Demographic details**

S. No	Parameters	No. Of participants	Percentage
1.	Age		
	12 -14	33	6.6 %
	15 – 17	448	89.6 %
	≥ 18	19	3.8 %
	Total	500	100
2.	Educational qualifications		
	≤ 10 <sup>th</sup>	58	11.6
	Intermediate	442	88.4
	Total	500	100
3	Residential status		
	Urban	186	37.2
	Rural	314	62.8
	Total	500	100
e4	Economic status		
	Above poverty line	161	32.2
	Below poverty line	339	67.8
	Total	500	100
5	Educational status of mother		
	Illiterate	384	76.8
	Literate	116	23.2
	Total	500	100



**Fig. 1. Details of age distribution**

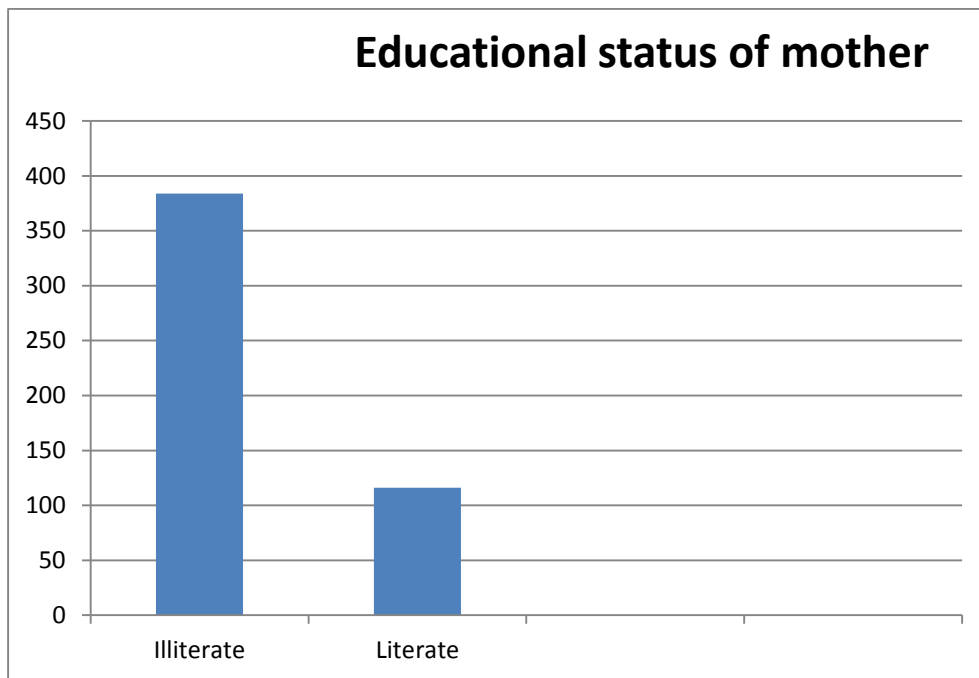


Fig. 2. Details of educational status of the mother

Table 2. Distribution of adolescent school & college girls according to knowledge and attitude toward menstruation and its management

Knowledge	Aware (%)	Unaware (%)
Perception about menstruation	312 (62.4)	188 (37.6)
Right age at menarche	218 (43.6)	282 (56.4)
Occurs only in females	453 (90.6)	47 (9.4)
Duration of normal menstrual period	258 (51.6)	242 (48.4)
What is the best sanitary product	440 (88)	60 (12)
What happens when you do not clean your vagina frequently	186 (37.2)	318 (63.6)
Awareness before menarche	198 (39.6)	302 (60.4)

Table 2. (Cont.)

Attitude	Number of girls	Percentage
Celebration at menarche (n=500)	283	56.6
Reactions at menarche (n=500)		
Cried	116	23.2
Scared	194	38.8
Casual	58	11.6
Irritated	118	23.6
Others (worry)	14	2.8
Restrictions during menstruation (n=500)	278	55.6
Don't enter pooja room/read holy books	59	11.8
Don't play /physical work/exercise	24	4.8
Don't go to school	39	7.8
Don't visit others homes	32	6.4
Don't enter the kitchen	45	9
Don't attend family functions segregated in the house	11	2.2
	12	2.4

Attitude	Number of girls	Percentage
No restrictions		
Attitude towards restrictions (n=500)		
By your wish	112	22.4
By the force of family members	335	67
No restrictions	53	10.6
Restrictions of food (n=500)		
Yes	194	38.8
no	306	61.2

**Table 3. Distribution of girls according to practices of menstruation and its hygienic management**

Practice	No. of girls	Percentage
Record the date of periods	228	45.6
Number of cloth pieces/pads changed per day		
≥ 4 pads	122	24.4
2 - 3 pads	313	62.6
< 2 pads / day	65	13
Being absent from school during menstruation	86	17.2
The material used for protection		
Pads	440	88
Cloth pieces	28	5.6
Both	16	3.2
other products	16	3.2
How the pad/cloth piece is discarded		
Dustbin	434	86.8
Flush in the toilets	33	6.6
burn them	31	6.2
others	2	0.4
The number taking bath daily during periods	446	89.2
Frequency of cleaning vagina per day		
≤ 2times / day	224	44.8
>2 times / day	276	55.2

**Table 4. Distribution of girls according to menstrual morbidities and age**

Menstrual morbidity	Age (years)			Total
	12 -14 (%)	15 -17 (%)	≥ 18 (%)	
Menorrhagia	9 (27.2)	108 (24.1)	3 (15.7)	120 (24)
Dysmenorrhoea	15 (45)	278 (62)	11 (57.8)	304 (60.8)
Premenstrual syndrome	5 (15)	23 (5.1)	2 (10.5)	30 (6)
Irregular cycles	4 (12)	39 (8.7)	3 (15.7)	46 (9.2)
Total	33 (6.6)	448 (89.6)	19 (3.8)	500 (100)

### 3. RESULTS AND DISCUSSION

The mean age of school and college girls in our study was found to be 15-17 years which is similar to the study conducted by Damhare et al. [15].

#### 3.1 Knowledge

Shanbag et al. [12] who in their study found that 73.7% of girls perceived menstruation as a

normal phenomenon was a similar percentage in comparison to this study

It was observed by Shanbag et al. [12] that awareness about menstruation as a process unique to females was 89.1%. This was following a similar study conducted by Abhay et al. [16] where the mother was the informant (40.67%) followed by friends which were 19%.

**Table 5. Distribution of girls according to health-seeking behavior**

<b>Health seeking behavior</b>	<b>No. of girls</b>	<b>Percentage</b>
First consultation during a problem (n=500)		
Mother	364 (72.8)	72.8
Friend	45 (9)	9
Sister	57 (11.4)	11.4
Relative	26 (5.2)	5.2
Neighbour	8 (1.6)	1.6
Type of treatment (n=500)		
Home remedies	107 (21.4)	21.4
The doctor prescribes the medicines	114 (22.8)	22.8
Over the counter drugs	58 (11.6)	11.6
No treatment taken	221 (44.2)	44.2
Preference of the doctor n(500)		
Male	79 (15.8)	15.8
Female	421 (84.2)	84.2

### 3.2 Attitude

Abhay et al. [16] noted that 87% of girls were restricted to worship during menstruation. According to Shanbag et al. [12] the Restriction to go to the place of worship (94.2%) was greater than what was observed in this study and special functions held on menarche (45.6%) were a lesser percentage in comparison to this study. Similarly in the study conducted by Shanbag et al. [12] food taboos were common during menstruation and 42.6% avoided certain food items.

### 3.3 Practices

It was seen that during menstruation 28 (5.6%) of the girls use cloth, 440 (88%) used sanitary pad, and 16 (3.2%) used both cloth and sanitary pad which was following the study conducted by Shoor, P [5]

According to Shoor, P [5] the frequency of change during the time of menstruation revealed that 76% changed sanitary pad or cloth 2-3 times a day. 7.7% twice a day and 16.3 % four times a day. This observation was similar to the present study. According to Shoor, P5 56.22% cleaned their external genitalia after voiding every time which was similar to this study.

In a similar study conducted by Abhay et al. [16] only 1% of the girls burned the material for protection during menstruation. Maximum (55.67%) threw the material in the dustbin. The municipality should be active in taking away the waste and its proper processing in the form of dumping or burning, then only throwing the material in the dustbin is a safe practice.

### 3.4 Menstrual Morbidity

In a study conducted by Sharma et al. [17] dysmenorrhoea was the common problem of adolescent girls (67.2%). This was following the present study (60.85 %).

The observations in the present study, Menorrhagia 120 (24%), Premenstrual syndrome 30 (6%), and irregular cycles 46 (9.2%) were following the findings of Shoor, P [18-21].

### 3.5 Health Seeking Behavior

Only 19.1% girls went to the doctor for treatment, 18.7% girls took home remedies, and maximum girls i.e. 82.2% girls' preferred female doctors which were in accordance to this study. The severity of symptoms was not related to their health-seeking behavior.

## 4. CONCLUSION

It can be said that among adolescent school and college-going girls in and around Anantapur, the knowledge on menstruation and menstrual hygiene was found to be unsatisfactory although the practices were noted to be good. The majority of girls attained menarche in the study. Menstrual hygiene is an issue that needs to be addressed at all levels. In our study majority of the mothers were found to be illiterates, as mothers are the first informant to the majority of adolescent girls the health education actives can be extended to the mothers to improve awareness. There is a need for health education in schools regarding menstruation. Provision of water supply and sanitary toilets in school is a



must to prevent absenteeism and dropouts of schools.

The attitude of girls towards menstrual hygiene is poor particularly the restrictions during menstruation such as do not enter the pooja room or read the holy books, do not play or physical works, do not enter the kitchen, etc are known to affect the menstrual behavior of girls. So awareness should be created regarding the above issues.

## CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

The study was approved by the Institutional ethics committee of Balaji college of Pharmacy with reference number BCP/IRB/BP/2019-11.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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