

FACTORS PREDICTIVE OF MENSTRUAL HYGIENE PERCEPTIONS AND PRACTICES

Chaitanya Jalem¹, Adari Jyothirlekha¹, Kedarisetti Bhargavi Ratna Sri Savitri¹, Saragadam Ram Diwakar¹, Voota Vijaya Latha¹, Dr Shaik Faizan Ali*², Dr. Netala Silvia³, Dr. M Raghu Bapiraju², Dr. Gadde Praveen⁴.

¹ Student, Department of Pharmacy Practice, Shri Vishnu College of Pharmacy, Bhimavaram.

² Associate Professor, Department of Pharmacy Practice, Shri Vishnu College of Pharmacy, Bhimavaram.

³ Professor, Department of Pharmacognosy, Shri Vishnu College of Pharmacy, Bhimavaram.

⁴ Associate Professor, Department of Public Health Dentistry, Vishnu Dental College, Bhimavaram.

*Corresponding Author: Email : faizanali.unique@gmail.com

ABSTRACT:

Background: Menstruation is a biological process but sometimes it is considered as unclean phenomenon in the society.

Materials and methods: A cross sectional study was conducted from December 2022 to April 2023 among girls of age group 13-29 in rural and urban areas.

Results: Among, 13-19 years age group members are following good hygiene with 76.9% whereas only 9.8% good hygiene was followed by adults. Education factor shows intermediate students followed good hygiene with 32.3% and unmarried women are following better practices than married women with significant difference <0.5. Perceptions with different factors had significant difference.

Keywords: Menstruation, menopause, sanitary napkins

INTRODUCTION:

Menstruation is a physiological phenomenon which can be seen in adolescent girls and pre-menopausal women. It is nothing but monthly flow of blood from the uterus through the vagina from puberty to menopause, is a result of shedding of the lining of the uterus. It takes up to twenty-one to thirty-five days for the normal menstrual cycle and also caused by hormones ^[1]. As we can see the reaction to menstruation of girl/women depends upon awareness and knowledge about menstruation ^[2]. Of course, it is frightening and also shocking for any girl to see blood coming out of her vagina at first experience ^[3]. Menstrual beliefs and practices are obtained from gender, religion and culture ^[4]. There will be changes in the body after menstruation, menstrual cycle happens and infections may prone to occur due to poor hygiene practices and disposal techniques are not fully known by young girls as they are hardly discussed openly ^[3]. Menstrual Health can be understood as a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity, in relation to the menstrual cycle ^[1]. Mainly in Hindu communities, menstruating girls and women are taught to suffer in silence during menstruation along with restrictions on them ^[4]. Studies show that more than 50% of girls follow unsatisfactory menstrual hygiene management in low and middle-income countries are a severe concern ^[5]. As we can see that many adult women are unaware of biological facts of menstruation or the good hygienic practices required, instead they pass on cultural taboos and restrictions to be observed ^[3]. The wastes that are generated from a

woman in their reproductive years are called menstruation waste. These wastes are generally produced during their monthly periods. Cloths that are used during menstruation seen as dirty and shameful, so women will hide their menstrual cloth for fear of being cursed ^[6]. There is a link between socio-economic status and menstrual hygiene practices that can lead to increase the risk in getting reproductive tract infections which sometimes causing infections to offspring ^[7]. India has fastest growing population of youth in out of 1.2 billion adolescents across the world ^[8].

AIM OF THE STUDY:

To study the assessment of knowledge of menstrual hygiene, management, waste disposal, practices and perceptions by girls.

OBJECTIVES:

- To identify hygiene related with age economic status and education
- To identify marital status with hygiene during menstruation
- To identify perceptions based on age and education
- To know the disposal of sanitary napkins by various methods
- To access socio-economic status for menstrual hygiene
- To identify the perceptions based on religion
- To study the hygiene practiced to manage the menstruation

- To identify the pain during menstruation
- To know about washing and drying of undergarments

METHOD OF CRITERIA:

The sample for the present study consist 579 women between age group 11-50 years. Study was conducted in Shri Vishnu educational society, which include school, intermediate, undergraduates and professional courses. Firstly, permissions were taken to get the information from the students. And then government municipal school in Vishnupur was included in our study, with the permission of principal of that school information from the adolescent girls was collected.

Inclusion criteria:

All the subjects in the age group of 13-29 years who are having menstrual cycles were included in the study.

Exclusion criteria:

- Pregnant
- Who had not attained menarche were excluded from the study

Tools of data collection:

The tool for data collection was a structured questionnaire.

DEMOGRAPHICS:

A cross-sectional study was conducted among 579 girls and women in Shri Vishnu Educational Society and Govt. High school in Bhimavaram. Out of our total study population of 579 girls and women, it was found that 77% (445 girls) belongs to 13-19 age category and 23% (134 women) belongs to 20-29 age categories. About 45.3 % (262) belongs to rural area and 54.7% (317) belongs to urban area. Majority of the subjects belongs to Hindu religion. 17.3% high school girls and 32.3% of intermediate girls are minimum and maximum percent respectively. It was found that 39.7% belong to the higher socio-economic group, and 15.9% belong to the lower socio-economic group and 44.4% belongs to middle socio-economic group. Only 5.5% were married and 94.5% were unmarried.

Comparison of perceptions with age:

Age category and perception as menstruation is curse, according to results that indicates 78% of respondents disagreed, specifically 63% of teenagers and 15.2% of adults, which demonstrates significance difference.

Secondly, women should be kept apart while menstruating, according to the perception with age category 42.3% of 13-19 years and 13.5% of 20-29 years agreed with a notable disparity (<0.001). Age when compared to perceptions that women should be restricted from attending special functions during menstruation, 51.6% of teenagers and 0.3% of adults agreed with the statement while 32.6% teenagers and 5.7% adults agreed with the perception of hiding periods from male members.

Religion and the perception that women should be isolated during menstruation are linked, with 50.7% of Hindus and 0.5% Of Muslims and 4.5% of Christians agreeing with the statement that shows significant difference. The perception of not to visit holy places during menstruation, 54.6% (maximum) of Hindus agreed while only 0.9% of Muslims and 4.8% of Christians agreed that shows significant difference ($<.001$). When education is taken as parameter, 27.1% (maximum) of intermediate and 15.4% (minimum) of high school students disagreed with the perception that menstruation is curse. Education when compared with perception of women should be isolated during menstruation, 13.8% of intermediate students with maximum and 7.3% of high school students with minimum percent disagreed.

Comparison between factors and hygiene:

With the practice of hand washing after disposing of sanitary napkins compared with age category, results indicate the overall menstrual hygiene is considered as hygienic and unhygienic, only 9.8% adults are hygienic whereas teenagers with maximum of 76.9% were hygienic with significance difference <0.001 , shown in below graph-1.

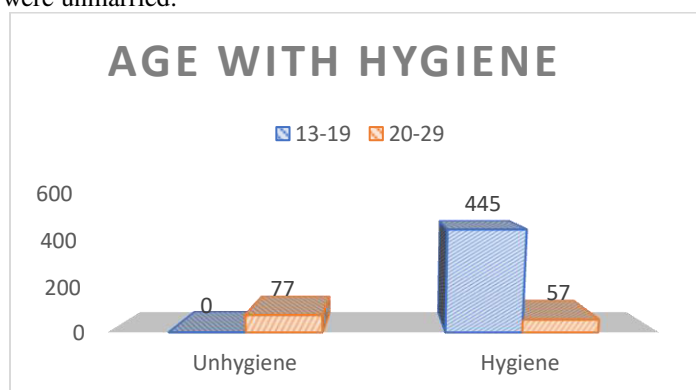


Fig: 1- Age compared with hygiene

When education is taken as factor, 32.3% of intermediate students are practicing good hygiene indicated with grey bar whereas 17%, 18.3% and 19% are practicing by high school, UG and professional course students respectively, which shows the significance difference of <0.001 represented in graph-2.

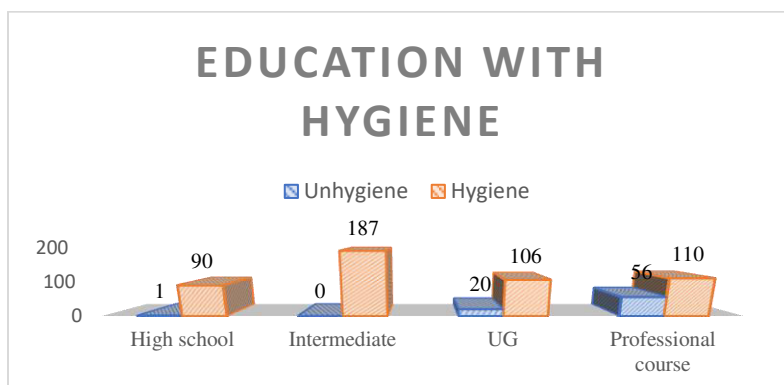


Fig: 2- Education compared with hygiene

About 85.3% unmarried women are practicing good hygiene while 25% of married only practicing good hygiene with significant difference <0.001 , shown in graph-3.

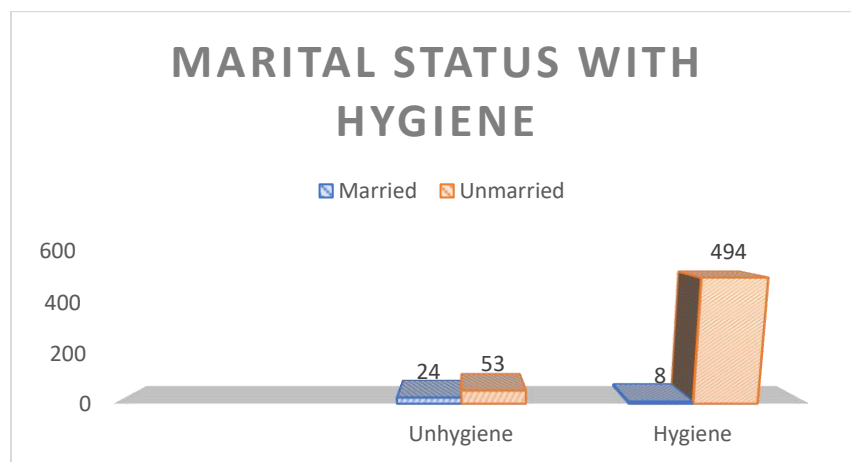


Fig: 3- Marital status compared with hygiene

Table 1: DEMOGRAPHICS

Factor	Unhygienic	Hygienic
Age		
13-19	0	445
20-29	77	57
Education		
High school	1	90
Intermediate	0	187
UG	20	106
Professional course	56	110
Marital status		
Married	24	8
Unmarried	53	494
Residence		
Rural	31	231
Urban	46	271
Religion		
Hindu	70	426

Muslim	4	12
Christian	3	64
Economic status		
Lower	8	84
Middle	40	217
Higher	29	201

Based on the residence, in rural area 31 members comes under unhygienic and 231 members belongs to hygienic whereas 271 were hygienic in urban area and 46 fall under unhygienic. This was shown in the graph-4 below.

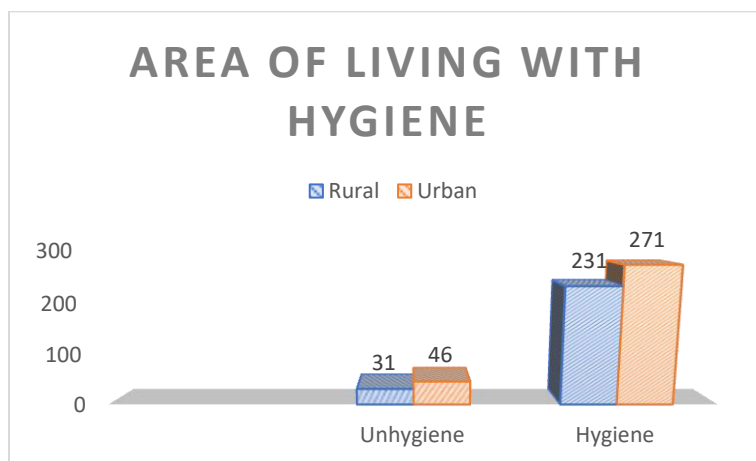


Fig: 4- Area of living compared with hygiene

Religion when considered and hygiene is measured, 70 Hindus, 4 Muslims and 3 Christians comes under unhygienic practices while 426 Hindus, 12 Muslims and 64 Christians belongs to hygienic category. This was distributed in the below graph-5.

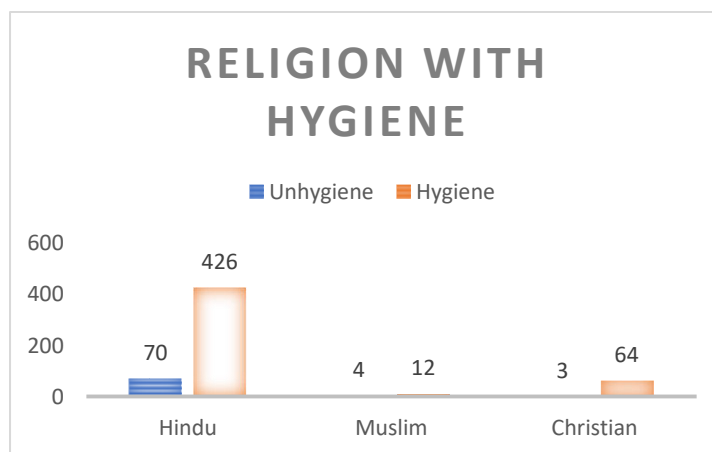


Fig: 5- Religion compared with hygiene

Economic status when compared with hygiene, only 8 members belongs to unhygienic in lower economic status, 40 and 29 members belongs to middle and higher economic status while 84 members are hygienic, 217 and 201 members belongs to middle and lower economic status are hygienic. This was represented in the below graph-6.

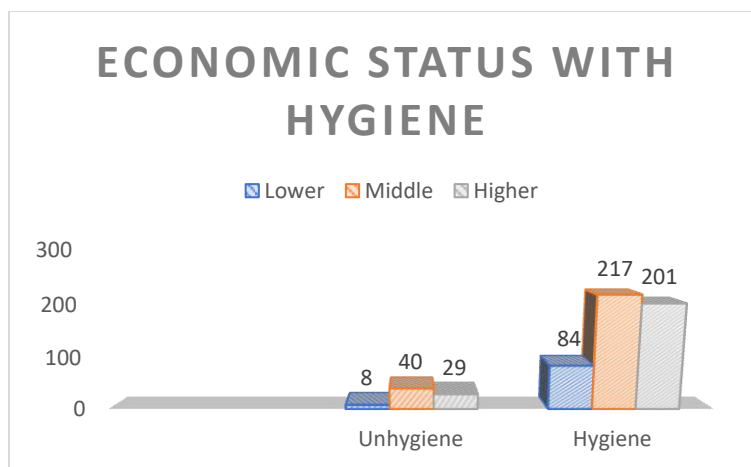


Fig-6- Economic status compared with hygiene

DEMOGRAPHICS:

Table 2: Age

Age category	Frequency(N=579)	Percentage (%)
13-19	445	77
20-29	134	23

In total of 579 subjects, 445(77%) belongs to age category teenagers of 13 to 19 years and 134(23%) belongs to adults of 20 to 29 years. The age distribution is shown in the graph 7.

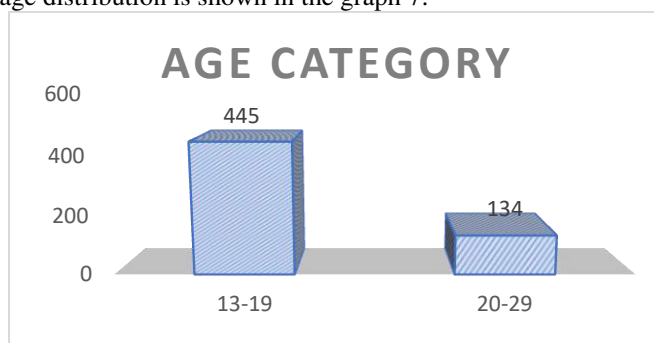


Fig- 7- Age category

Table 3: Residence

Residence	Frequency(N=579)	Percentage (%)
Rural	262	45.3
urban	317	54.7

Area they living was classified as rural and urban with 262(45.3%) and 317(54.7%) respectively and represented in the graph 8.

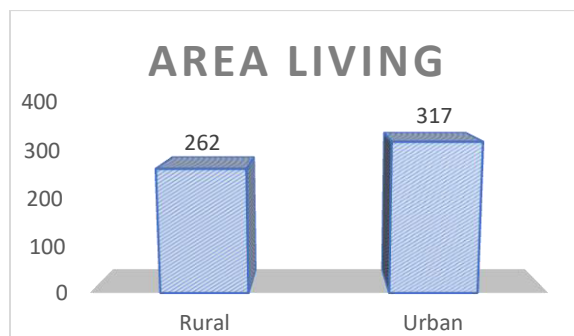
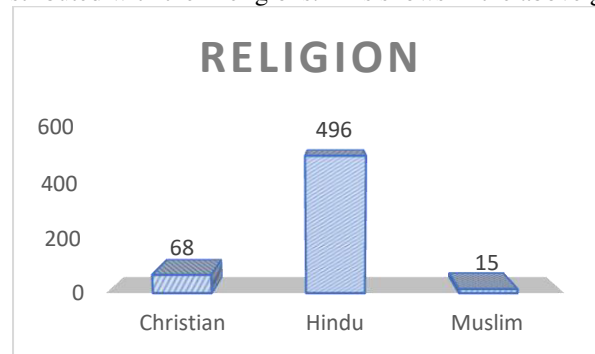


Fig- 8- Area living

Table 4: Religion

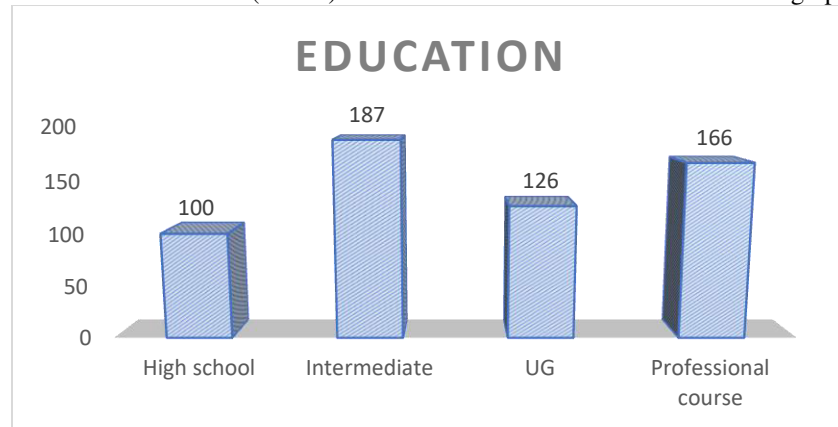
Religion	Frequency(N=579)	Percentage (%)
Christian	68	14.2
Hindu	496	85.7
Muslim	15	2.6

When the religion is taken into consideration, Hindus with maximum number 496(85.7%), Muslims of 15(2.6%) and Christians of 68(14.2%) are distributed with their religions. This shows in the above graph 9.

**Fig-9- Religion****Table 5: Education**

Education	Frequency(N=579)	Percentage (%)
High school	100	17.3
Intermediate	187	32.3
UG	126	21.8
Professional course	166	28.7

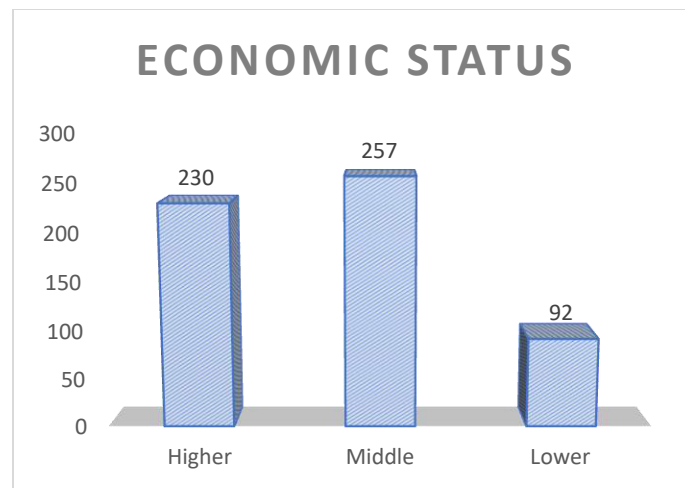
Education: Among all the subjects, intermediate students are maximum in number with 187 (32.3%) and under graduate students are minimum with 126 (21.8%). The distribution was shown in the below graph 10.

**Fig-10- Education**

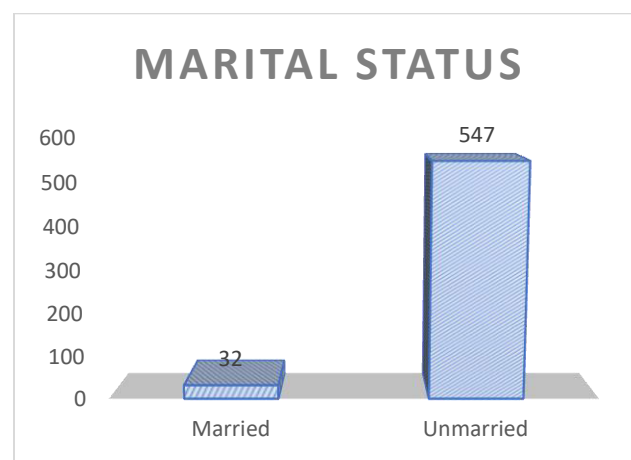
The socio-economic status shows majority were belongs to middle class with 257(44.4%) and remaining higher and lower were 230(39.7%) and 92(15.9%) respectively. The data was represented in the below graph 11.

Table 6: Economic status

Economic status	Frequency(N=579)	Percentage (%)
Higher	230	39.7
Middle	257	44.4
Lower	92	15.9

*Fig:11- Economic status*

Marital status	Frequency(N=579)	Percentage (%)
Married	32	5.5
Unmarried	547	94.5

Table 7: Marital status*Fig: 12- Marital status*

Most of the subjects were unmarried with 547(94.5%) and only 32 members that is (5.5%) were married and this was represented in the above graph 12.

Perceptions were taken into consideration to know the views of girls and women regarding menstruation, the results show that in graph 13.

453 members disagreed for menstruation is curse where 126 members still agreed for the same statement.

During menstruation women should be isolated, 323 were agreed and 256 disagreed with the perception.

Visiting holy places during menstruation is not ok and 349 agreed with this and 230 disagreed.

278 members agreed for women should be restricted from attending functions during menstruation while 301 disagreed for this statement.

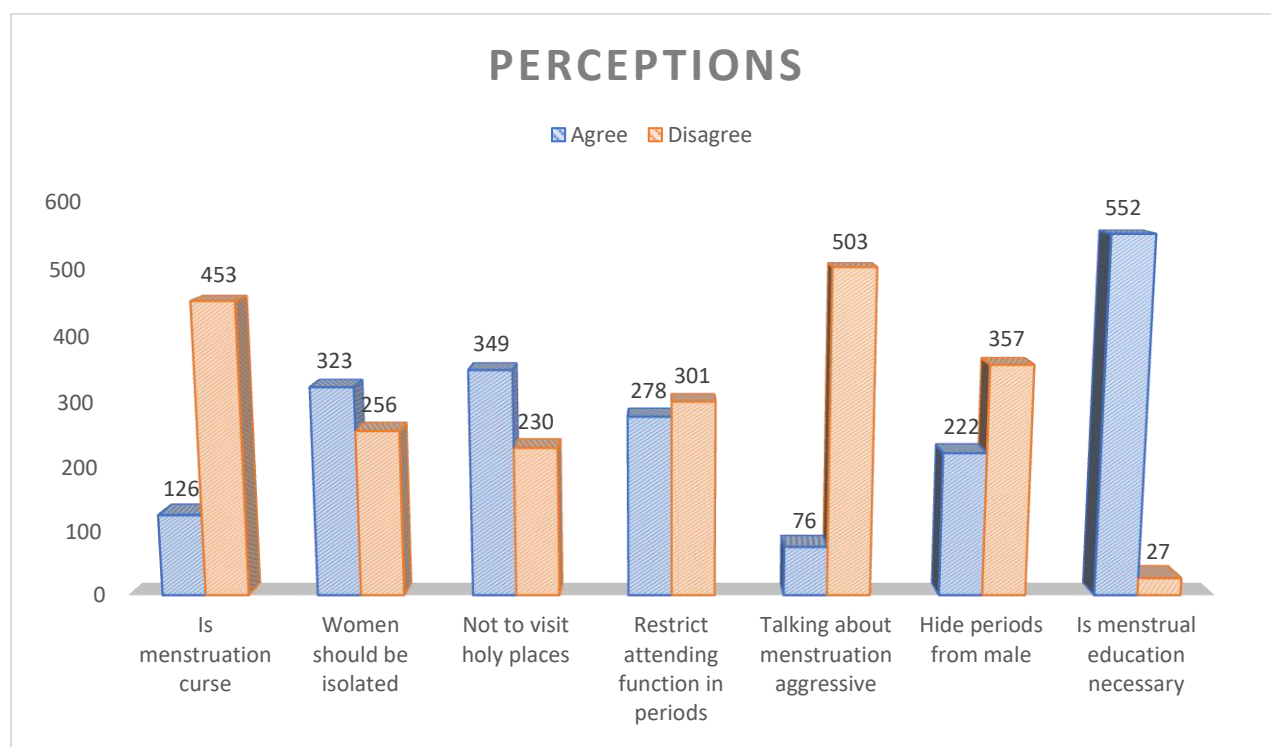
503 members disagreed with the statement of talking about menstruation is aggressive.

222 members said they hide periods from male while 357 members do not hide periods from male.

Majority 552 members agreed for menstrual education is necessary.

Table 8: Perceptions

Perceptions	Agree	Disagree
Is menstruation curse	126	453
Women should be isolated during menstruation	323	256
Is it ok to not to visit holy places	349	230
Restrict attending function in periods	278	301
Talking about menstruation aggressive	76	503
Do you hide periods from male	222	357
Is menstrual education necessary	552	27

**Fig: 13- Perceptions****Table 9: Hygiene**

Menstrual products	Frequency(N=579)	Percentage (%)
Menstrual cup	5	0.9
Sanitary napkin	566	97.7
Cloth	6	1.0
Tissue paper	2	0.3

**Fig: 14- Products used**

The products used during menstruation is mostly sanitary napkins with 97.7% while others like menstrual cup, cloth and tissue paper are 5(0.9%), 6(1%) and 2(0.3%) respectively shown in graph 14.

Table 10: Duration of time

Duration	Frequency(N=579)	Percentage (%)
1 hour	19	3.3
3-4 hour	182	31.4
6 hours	356	61.5
1 day	21	3.6
>1 day	1	0.2

The time duration to change the next sanitary napkin shows majority with 6 hours of 356 (61.5%), 3-4 hours and 1 hour is also a good practice with 182(31.4%) and 19(3.3%) respectively whereas one day and >1 day with 21 and one member shows bad hygienic practice which was represented in graph 15.

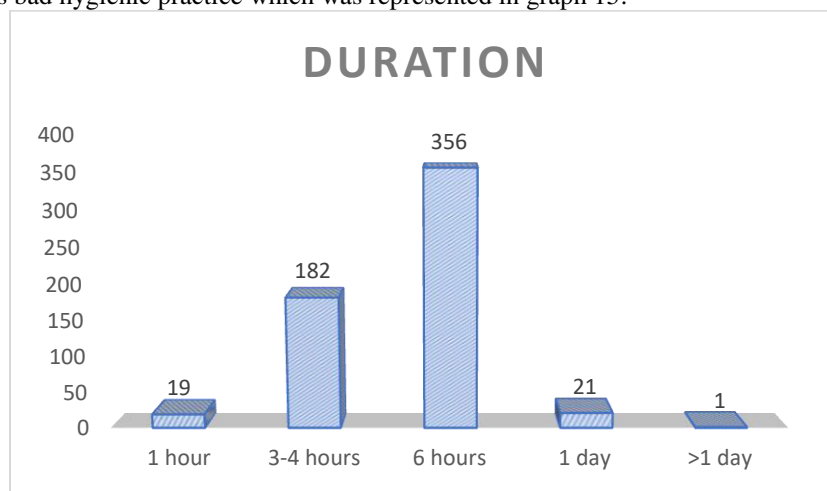


Fig: 15-Duration

Products	Frequency(N=579)	Percentage (%)
Creams	68	11.7
Dusting powders	26	4.5
Liquids	50	8.6
Lotions	33	5.7
None	402	69.4

Table 11: Vaginal products

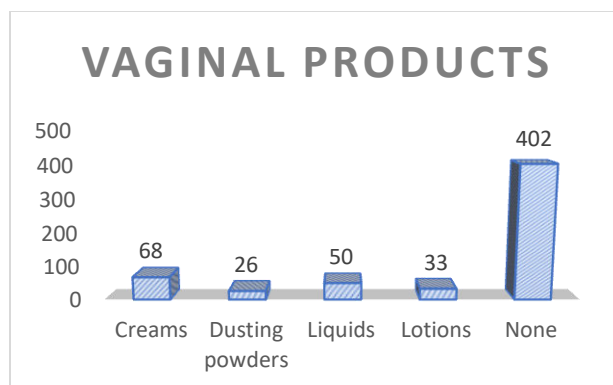


Fig: 16-Vaginal products

Vaginal products like creams were used by 68(11.7%), dusting powders were used by 26(4.5%), liquids were used by 50(8.6%), lotions were used by 33(5.7%) and 402 (69.4%) members are not using any of the above during menstruation that was shown in graph 16.

Table 12: Disposing method

Disposal method	Frequency(N=579)	Percentage (%)
Through it away or hide it somewhere	60	10.4
Through it into toilets home/public toilets	16	2.8
Remove stain with water, wrap and through in dustbin	204	35.2
Wrap with paper and through in dustbin	299	51.6

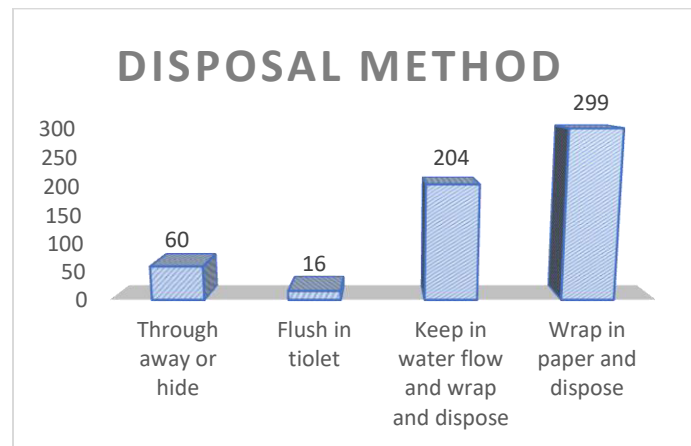


Fig. 17- Disposal methods

In the method of disposal of sanitary napkins, sixty members (10.4%) directly through or hiding the used sanitary napkin while sixteen members (2.8%) directly flushing in toilets which comes under unsafe practice. 204 members are removing the blood stain by keeping it under the running tap and then wrapping in paper and disposing in dustbin and 299 (51.6%) were wrapping in paper and disposing in dustbin which comes under safe practice represented in graph 17.

Table 13: Safety precautions

Safety precautions	Frequency(N=579)	Percentage (%)
Arrange all the requirements	222	38.3
Daily carry	130	22.5
Not mandatory	72	12.4
None	155	26.8

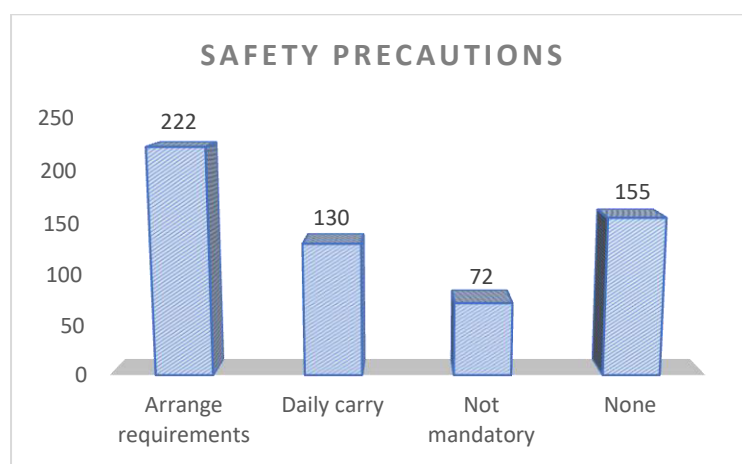


Fig. 18-Safety precautions

The safety measures that are taken prior to menstrual cycle with arranging all the requirements that are needed are 222 members with 38.3%, 130 members will daily carry sanitary napkins while 72 members 12.4% said arranging things was not mandatory for them and 155 (26.8%) said none shown in above graph 18.

Table 14: Hand washing after disposal

Hand washing	Frequency(N=579)	Percentage (%)
Soap and water	502	86.7
Only water	77	13.3

Hand washing after the disposal of sanitary napkins is very mandatory for hygiene. Mostly 502 (86.7%) members wash their hands with soap and water while 77 (13.3%) members are using only water for hand wash and this was represented in the below graph 19.

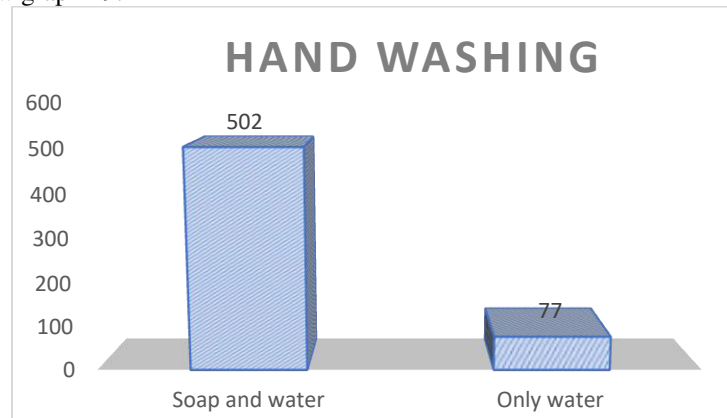


Fig: 19-Hand washing

Table 15: Cleaning undergarments

Washing	Frequency(N=579)	Percentage (%)
Soap and water	538	92.9
Only water	41	7.1

Washing undergarments with soap and water are majority members of 538 (92.9%) which is a safe practice while 41 (7.1%) members use only water for washing undergarments which is unsafe practice shown in below graph 20.

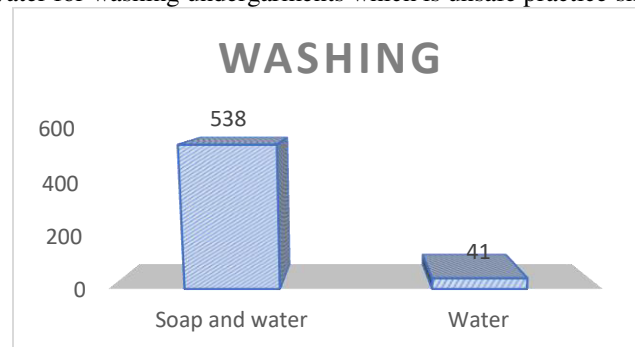
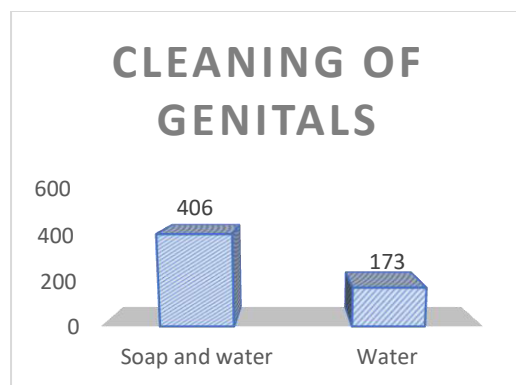


Fig: 20-Washing

Table 16: Cleaning of genitals

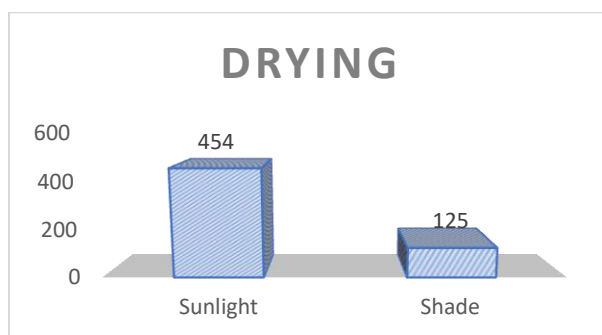
Cleaning	Frequency(N=579)	Percentage (%)
Soap and water	406	70.1
Only water	173	29.9

Cleaning of genitals with soap and water are 406 (70.1%) members, a safe practice while only water was used by 173 (29.9%) which is unsafe practice represented in graph 21.

*Fig: 21-Cleaning of genitals***Table 17: Drying of undergarments**

Drying	Frequency(N=579)	Percentage (%)
sunlight	454	78.4
shade	125	21.6

Drying the undergarments will show impact in hygiene. 454 (78.4%) members are drying in sunlight which is safe practice while 125 (21.6%) members are drying in shade region that is unsafe practice which was shown in graph 22.

*Fig: 22- Drying***Table 18: Untouchability**

Untouchability	Frequency(N=579)	Percentage (%)
yes	334	57.7
no	245	42.3

334 (57.7%) members are facing untouchability during menstruation while 245 (42.3%) are free from untouchability. This was shown in the graph 23 below.

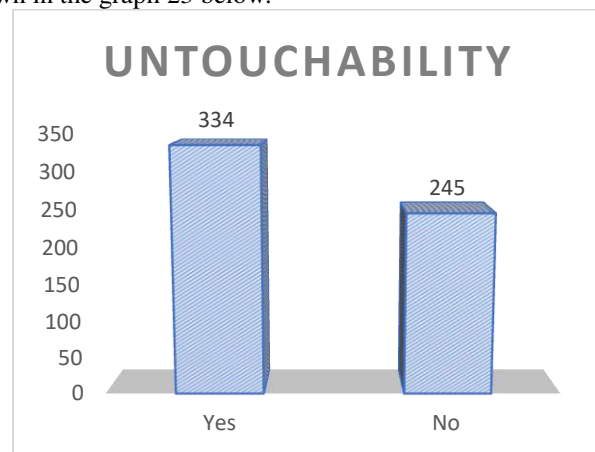
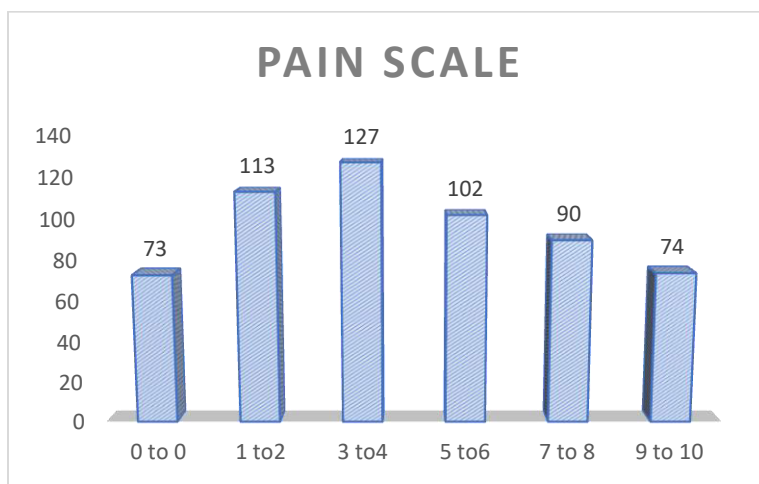
*Fig: 23-Untouchability*

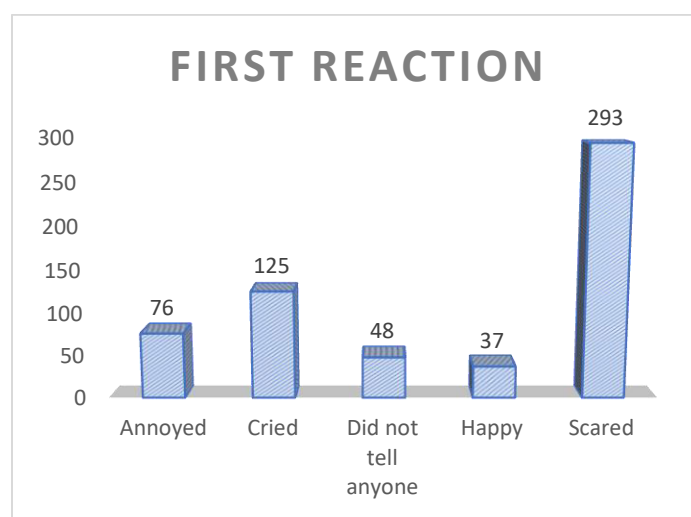
Table 19: Pain score

Pain scale	Frequency (N=579)	Percentage (%)
0	73	12.6
1-2	113	19.6
3-4	127	22
5-6	102	17.6
7-8	90	15.6
9-10	74	12.8

Pain score was measured by using pain scale. Abdominal and stomach pain during menstruation is very normal in female but it varies from one another with different intensities, mostly 127 (22%) members ranged between 3-4 and with minimum 73 (12.6%) ranked with 0. This was shown in the graph 24 below.

**Fig: 24-Pain scale****Table 20: First reaction**

First reaction	Frequency (N=579)	Percentage (%)
annoyed	76	13.1
cried	125	21.6
Did not tell anyone	48	8.3
happy	37	6.4
scared	293	50.6

**Fig: 25-First reaction**

Menarche is the first menstruation, which most of the subjects did not recognised it, with majority 293(50.6%) became scared while 125(21.6%) cried, 76 (13.1%) annoyed, 48 (8.3%) members did not tell anyone and 37 (6.4%) reacted they were happy shown in the above graph 25.

Practices	Frequency(N=579)	Percentage (%)
zandubalm	54	9.3
Cold pack	16	2.8
Hot pack	93	16.1
massager	25	4.3
No change	391	67.5

Table 21: Practices

Practices during menstruation, 54(9.3%) were using zandubalm, 16(2.8%) were using cold pack, 93(16.1%) were using hot pack, 25(4.3%) were using massager and 391 (67.5%) are not using anything shown in graph 26 below.

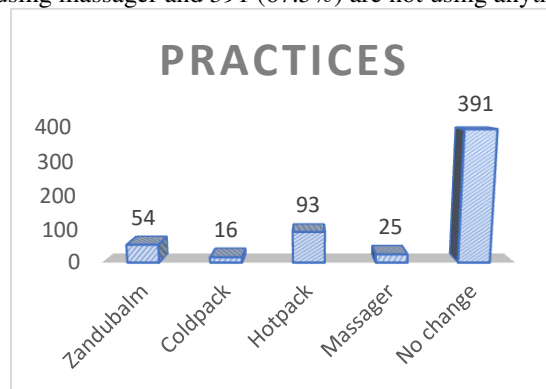


Fig: 26-Practices

Changes in daily activity:

Changes in activities during menstruation is shown with 202 (34.8%) have mild changes, 164 (28.3%) have moderate changes, 164 (28.3%) have none and 49 (8.5%) have severe changes. This was shown in the below graph 27.

Table 22: activity changes

Daily changes	Frequency(N=579)	Percentage (%)
mild	202	34.8
moderate	164	28.3
none	164	28.3
severe	49	8.5

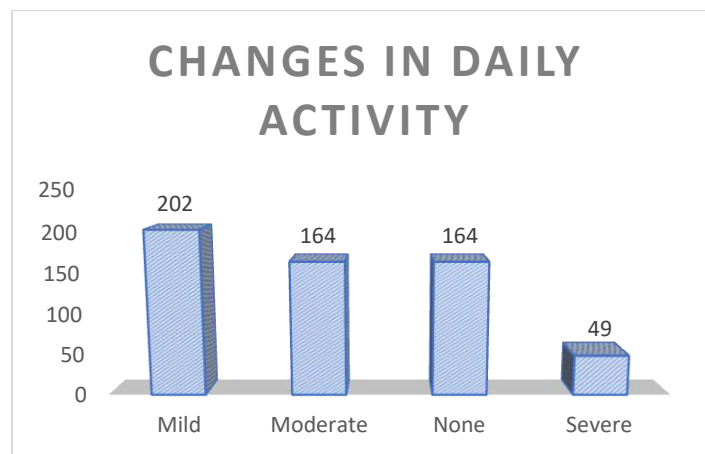


Fig: 27-Changes in daily activity

DISCUSSION:

The present study was undertaken in girls of age 13 to 19 years and women of age group 20 to 29 years of Shri Vishnu Educational Society and Govt. High School in Bhimavaram. Menstrual Hygiene is crucial in reproductive life of every woman.

In a study which is done in Mangalore showed that upper socio-economic group seems to practice better sanitary measures than middle and lower socio-economic groups^[9], whereas in our study there is no significant changes in hygiene between socio-economic groups.

A study shows that about 6.25% in 160 members agreed that menstruation is a curse^[2]. In our study about 126 members out of 579 agreed to that statement. In a study 493 members of the study population agreed to the statement to not to worship during menstruation^[8], where 349 members in our study also agreed to that very statement.

The type of absorbent material used is of primary concern since reusable material could cause for infection if cleaning is not properly done. The most commonly used material during menstruation was clean cloth (47.7%) followed by sanitary pads and cotton^[10], but in our study it is seen that about 97.7% are using sanitary napkin/pad only 0.9% using menstrual cup and 0.3% using tissue paper.

Changing pads during night time and at school or college is important and comes under healthy practices. A study from south India, reported that about 78.3% of the girls changed napkins 2-3 times a day and 16.6% mentioned to change once a day^[11], our study shows majority with 6 hours of 61.5%, 3-4 hours and 1 hour is also a good practice with 31.4% and 3.3% respectively whereas one day and >1 day with 21 and one member shows bad hygienic practice.

The reaction to menstruation depends upon awareness and knowledge about the subject. A study shows that the reaction to first menstruation was scared by about 44.8% and 14.3% was discomfort^[12] and our study shows that about 50.6% was scared and 13.1% was annoyed which shows similarity between both the studies.

It is noted that in a study which is conducted in Mangalore, India shows that about 80% of the study population are properly disposing the cloth or sanitary pad used by wrapping the cloth or sanitary pad in paper or a plastic cover^[8] and in our study, it is observed that 51.6% wrap the cloth or pad with paper and about 35.2% wash the stain under water flow and then wrap with paper which are both proper disposing techniques. Thus, the result shows that majority of the study population in both the studies are following proper disposal techniques.

Cleaning of undergarments only with water was found to be 7.1% in our study, where it was found to be

12.8% in a study conducted in adolescent girls of North Karnataka, India^[13]. When it comes to place for drying cloth during menstruation about 78.6% of the study populations are drying in sunlight according to our study whereas about 44.5% of the population are following good hygiene practice from a study made in India^[13].

CONCLUSION:

This study sheds light upon how the perceptions and some taboos are associated with menstruation are still prevalent in the society and there is need to educate women and girls regarding the menstrual health and practices for healthy community. It is not only government responsibility but also every health care professional like pharmacist, nurses can conduct awareness camps for better reproductive health which reduces many infections. Girls and women should aware of consequences of disposing used sanitary napkins in open or flushing in toilets. It is also essential to increase the awareness of mothers about menstrual hygiene is mandatory. Arranging vendor machines in colleges and in some public places will be useful to women and providing incinerators for disposal of sanitary napkins will decrease the spread of infections due to bacteria and also for better environment without pollution. Hence raising awareness from childhood will helps in developing menstrual health and decreases the infections. Parents should teach their children about the changes which may occur and keep them aware on how to react to react to any such changes. Teachers should educate and trained to impart knowledge about menstrual hygiene among students. During menstrual pain it is not recommended to use any medications regularly and home remedies and doing yoga will be helpful in case of any extreme condition and also to postpone menstruation no medications should be taken without the consultation of a doctor for any emergency. Menstrual education is even necessary for boys to support girls and women during menstruation. Even adults with their heavy schedule, one should not use unsafe practices which sometimes lead to severe health problems.

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