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RESEARCH ARTICLE

**A COMPARATIVE STUDY TO ASSESS THE MENSTRUAL HYGIENE PRACTICES AMONG
 ADOLESCENT GIRLS OF URBAN AND RURAL SCHOOLS OF LUDHIANA, PUNJAB.**

Ms. Isha Thakur Dharni.

Nursing Tutor, Akal College of Nursing, Eternal University, Baru Sahib, H. P.

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Practice; Adolescent girls; Menstrual hygiene.

Abstract

Introduction: Menstruation is still regarded as something unclean or dirty in Indian society and it is strongly related with misconceptions and cultural restrictions. Lack of knowledge and poor hygienic practices during menstruation can lead to various gynecological problems in the reproductive life of girls.

Aim & Objective: To study and compare the menstrual hygiene practices among adolescent girls of urban and rural schools of Ludhiana, Punjab.

Method: A community based cross-sectional study on 100 adolescent girls (50 from urban and 50 from rural) age group of 13-18 years of urban and rural schools randomly selected (lottery method) from two conveniently selected schools of district of Ludhiana, Punjab. Data was collected in the month of March 2013. A structured questionnaire was used to collect the socio-demographic data, menstrual profile and Likert's scale was used to assess the menstrual hygiene practices. The descriptive statistics, unpaired t test, ANOVA test was used for analysis.

Study findings: Menstruation hygiene practice was more in urban adolescent girls as compared to rural. Majority 17(34%) of urban girls had excellent menstrual hygiene practices and 44(88%) of urban girls were using commercially available sanitary pads as compared to 31(62%) of rural girls. The majority of urban girls i.e. 31(62%) and rural girls i.e. 38(76%) had good menstrual hygiene practices. The mean score of menstrual hygiene practices of urban adolescent girls was higher i.e. 28.24 than the mean score of menstrual hygiene practices of rural adolescent girls i.e. 25.18. But the difference was found to be statistically non-significant at $p=0.05$ level of significance. There is no association between menstrual hygiene practices and selected demographic variables among adolescents girls of urban and rural school of Ludhiana, Punjab.

Conclusion: To conclude, efforts should be taken to improve the menstrual hygiene practices of rural and urban adolescent girls so that vulnerability to reproductive tract infections should be decreased and suffering of millions of women can be mitigated.

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Corresponding Author:- Isha Thakur Dharni.

Address:- Nursing Tutor, Akal College of Nursing, Eternal University, Baru Sahib, H.P.

Introduction:-

Adolescence in girls has been recognized as a turbulent period which signifies the transition from girlhood to womanhood and considered as a landmark of female puberty. This transitional period is marked with the onset of menarche which is generally accepted by young girls, as a sign of maturity. However, some girls show negative responses such as shame, fear, anxiety and depression. Onset of menstruation is one of the most important changes occurring among the girls during the adolescence. The first menstruation (menarche) occurs between 11 and 15 years with a mean age of 13 years. In the existing Indian cultural milieu, there are several traditions, myths, misconceptions, mystery and superstition prevailing about menstruation. The mere mention of the topic has been a taboo in the past and even to this date the cultural and social influences appear to be a major hurdle for advancement of the knowledge of the subject.¹

Menstrual hygiene is defined as "sympathetic emotional and hygienic care given during menstruation." Menstruation is commonly called a period of menstrual flow. It consists of blood, mucus, endometrial fragments and vaginal epithelia's. It is usually dark red and has characteristics odour and contains 60 to 150 ml of fluid. Menstrual hygiene comprises care of genital area, use of sanitary napkins and personal hygiene. Genital area should be cleaned with antiseptic solution or soap and water before changing the pad at least twice a day and clean pads or clothes should be changed frequently whenever soaked with blood. Selection of pads should be of proper size, length and quality. They should not be usually washed after usage but they should be disposed. The best method of disposal is burning. Menstrual fluid usually has very little odour until it contacts bacteria on the skin or in the air. Daily bathing or showering is adequate to control the odour. Bathing should be done in hot or warm water.²

Sympathetic and careful handling of a young girls experiencing first menstruation is of paramount importance. Menstrual hygiene should be taught by the mother or teacher explaining the physiological and other associated changes during a period.²

Menstrual hygiene is an issue that every girl and woman 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.³

Need of The Study:-

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 infection. The interplay of socio-economic status, menstrual hygiene practices and reproductive tract infections are noticeable. Women having better knowledge regarding menstrual hygiene and safe practices are less vulnerable to reproductive tract infection and its consequences. Therefore, increased knowledge about menstruation right from childhood may escalate safe practices and may help in mitigating the suffering of millions of women. Menstruation and menstrual practices are still clouded by taboos and socio cultural restrictions resulting in adolescent girls remaining ignorant of the scientific facts and hygienic health practices, which sometimes result in to adverse health outcomes.⁴

In various studies related to menstrual hygiene showed that the girls should be educated about the significance of menstruation, selection of sanitary menstrual absorbent and its proper disposal.⁵

It is very important to educate adolescent girls regarding importance of menstrual practices during menstruation as it prevents certain complications like cervicitis, bacterial vaginitis, fungal infections, and inflammatory diseases etc. which are prevalent among females due to unhygienic practices. So considering all these facts researchers found the need to do study on the topic.

REVIEW OF LITERATURE HAS BEEN ORGANIZED UNDER THE FOLLOWING SECTIONS:-

1. Assessment of menstrual hygiene practices among urban and rural adolescent girls.
2. Comparison of menstrual hygiene practices among urban and rural adolescent girls.

SECTION-1: STUDIES RELATED TO THE ASSESSMENT OF THE MENSTRUAL HYGIENE PRACTICES AMONG URBAN AND RURAL ADOLESCENT GIRLS

Drakshayani D.K, Venkata RK(1994) conducted a study in Guntur District in Andhra Pradesh to assess practices about menstruation among rural adolescent girls of high school. In this study a sample of 64 adolescent girls was taken. Only 10 girls were using boiled and dried cloth as menstrual absorbent. Though almost all 64 girls received advice regarding menstrual hygiene from different sources, some of their practices were unhygienic. This shows that the mothers of these girls were lacking of right knowledge and the same thing was transferred to their offspring. Before beginning any change in menstrual practices they should be educated about the facts of menstruation and its physiological implications. The girls should be educated about the significance of menstruation and development of secondary sexual characteristics, selection of a sanitary menstrual absorbent and its proper disposal. This can be achieved through educational television programmes, school nurses/ health personnel, compulsory sex education in school curriculum and knowledgeable parents, so that she does not develop psychological upset and the received education would indirectly wipe away the age old wrong ideas and make her to feel to discuss menstrual matters without any inhibitions.⁵

Lawan U.M, Yusuf N.W, Musa A.B (2010) conducted a study in Kano, Northwestern Nigeria about menstruation and menstrual hygiene amongst adolescent school girls. This study examined the practices of adolescent girls around menstruation and menstrual hygiene. Data was collected quantitatively and analyzed. Most of them used sanitary pads as absorbent during their last menses, changed menstrual dressing about 1-5 times per day and three quarters increased the frequency of bathing.⁸

Dasgupta A, Sarkar M (2008) conducted a descriptive, cross sectional study about menstrual hygiene in rural health unit and training centre, Singur, west Bengal among 160 adolescent girls of a secondary school with the help of a pre designed and pre tested questionnaire. Data was analyzed statistically by simple proportions. Out of 160 respondents, 108(67.5%) girls were aware about menstruation prior to attainment of menarche. Mothers were the first informant regarding menstruation in case of 60(37.5%) girls. One hundred and thirty-eight (86.25%) girls believed it as a physiological process. Seventy-eight (48.75%) girls knew the use of sanitary pads during menstruation. Regarding practices, only 18(11.25%) girls used sanitary pads during menstruation. For cleaning purpose, 156(97.5%) girls used bath soap and water. Regarding restrictions practiced, 136(85%) girls practiced different restrictions during menstruation. Menstrual hygiene, a very important risk factor for reproductive tract infection, is a vital aspect of health education for adolescent girls. Educational television programmers, trained school nurses /health personnel, motivated school teachers and knowledgeable parents can play a very important role in transmitting the vital message of correct menstrual hygiene to the adolescent girl of today.⁴

Kumar A, Srivastava K (2011) conducted a study in Ranchi on cultural and social practices regarding menstruation among adolescent girls. The study attempts to find out the existing social and cultural practices regarding menstruation, awareness level, and the behavioral changes that come about in adolescent girls during menstruation, their perception about menarche, how do they treat it, and the various taboos, norms, and cultural practices associated with menarche. The study was conducted on 117 adolescent girls (age 11-20 years) and 41 mothers from various communities and classes in Ranchi comprising residential colonies and urban slums. The findings unfold many practices: cultural and social restrictions associated with menstruation, myth, and misconception, the adaptability of the adolescent girls toward it, their reaction, reaction of the family, realization of the importance of menstruation, and the changes that have come in their life after menarche and their resistance to such changes. The study concluded that cultural and social practices regarding menstruation depend on girl's education, attitude, family, environment, culture and belief.⁹

Omidvar S, Begum K (2010) conducted a cross-sectional study in South India on 350 students recruited (during the academic year 2009-2010) from educational institutions offering higher secondary education, pre- university and under graduate courses in the urban areas. A purposeful sampling was done to select girls who were unmarried and in the age group of 15-22 years. Also those who volunteered to give complete and correct information were included for the study. The selected women were explained about the protocol and purposes of the study and were requested to complete the questionnaires to elicit information relating to demographic features, menarche age, and menstrual hygiene practices. In this study it was concluded that healthy practices are important for health and well-being of individuals. Menstrual period is one such time when females are expected to adopt hygienic practices.¹⁰

Manjula R, Geethalakshmi R.G, Sangam D.K (2011) conducted a cross-sectional study in Pre-university colleges present in Davangere city, Karnataka. A total of 362 students were included, of which 114 students were

from Government Colleges and 248 students from private colleges. The sample selected is proportional to the total number of students in the colleges. Later the data was collected regarding the menstrual problems and their practices during menstruation with the help of pre-structured proforma and analyzed. Results showed that 68% of them attain menarche by 12 years of age and the 97% of them with normal menstrual flow. About 97% of them complained of dysmenorrhea and 80% of them had taken treatment from doctors for the same. About 3% of them had abnormal white discharge. It is encouraging to know that about 60% of them used sanitary napkins during menstruation and knew the correct methods of disposal. In this study among PU girls, though they had experienced menstruation for about 4-5 years, their level of menstrual hygiene was not good. Realizing the needs and interest to use sanitary pads, it should be made available to all segments of society by social marketing.¹¹

SECTION-2: STUDIES RELATED TO COMPARISON OF MENSTRUAL HYGIENE PRACTICES AMONG URBAN AND RURAL ADOLESCENTS GIRLS

Thakre S.B, Sushama S.T (2012) conducted a cross-sectional study in Saoner, Distt. Nagpur on 387 Jawahar Kanya School going girls about menstrual hygiene practice girls from eighth and ninth standard. A pre designed, pre tested and structured questionnaire was used in the study for data collection and it was found that three hundred and eighty seven girls in the age group of 12-16 years, with the mean (SD) age of 13.82(0.83) years, were studied. Majority of the participants, 62.3% belonged to urban areas. Majority (92.5%) mothers of the study participants were educated. Significantly more (60.6%) urban girls were using sanitary pads as compared to rural (30.8%) girls ($p=0.001$). Cleaning of external genitalia was unsatisfactory in higher number of rural girls (79.4%) than urban girls (58.1%). Majority of the girls (77.8%) had one or the other problem related to menstrual cycle. Dysmenorrhea in (61%), PMS in (55.8%) and other problems pertaining to menstruation were reported in (55.3%) of the study participants. Three (1%) girls had menstrual period for less than two days where as the bleeding of 27(7%) subjects lasted for more than six days. Abnormal bleeding was reported in 35(9%) of the subjects. About 15% had irregular cycles and a few had missed their cycles.⁶

Deo.D.S, Ghattargi C.H (2005) conducted a cross-sectional study at Swami Ramadan Teerth Rural Medical College Ambajogi on adolescent school girls of urban and rural field practice area of to assess the source of information regarding menstruation, reaction to first subsequent menstruation, taboos and restriction as result of menstruation and hygiene practiced during menstruation. A sample of 94 girls from urban school and 74 from rural school selected randomly. The girls were selected according to WHO criteria for adolescents i.e., 10-19 years. Pretested questionnaire regarding perception and practices about menstruation was provided which included questions related to awareness about menstruation, and source of information regarding menstruation. Results showed that the age of menstruating girls ranged from 12-17 years with maximum number of girls between 13-15 years of age 40(42.5%) urban and 41(55.4%) rural girls were aware about menstruation prior to attainment of menarche. In urban girls mothers was the main sources of information about menstruation (27.5%), while it was the teacher in the rural counterparts (27.01%). Other sources of information were friend, relatives and books.¹²

Salve S.B, Dase R.K, Mahajan S.M & Adchitre S.A (2012) conducted a study in Z.P High School Ambelohale form rural area and Sharda Mandir Girls High Aurangabad to assess the practices amongst adolescent girls. A total of 189 rural and 132 urban girls of 8th to 10th standard were included in this study. Questionnaire was used to collect the information. Pre-test questionnaire was used to collect the information and post-test health education was given about reproductive health, menstrual hygiene by gynecologist. Findings were analyzed and statistical relationship was determined by using chi-square test. Regularities of menstruation was better in rural girls i.e. 87(94%) compared to urban girls i.e. 53(56%). Percentage of using market available sanitary napkins was more in urban girls 56(60%) compared to rural girls 6 (06%) whereas homemade sanitary napkins were used by 87(94%) rural girls & 38 (40%) urban girls and this difference was statistically significant amongst rural girls, female teacher was the main source of knowledge 89(47%) while it was mother in urban area 48(36%). Knowledge about reproductive system, age was better amongst urban girls while sanitary facilities like attached toilets, full wall bathroom, sufficient water etc. were less in rural areas. Differences came out of study were statistically significant.⁷

Abdel-Hady E.G, Badawi K, Fedawy S.E (2005) conducted a study at Mansoura, Egypt on menstrual hygiene among adolescent school girls. This study was conducted on 664 schoolgirls of age group 14-18 years. Girls were selected by cluster sampling technique in public secondary schools in urban and rural areas. Researcher asked about

type of sanitary protection used, frequency of changing pads or clothes, means of disposal and bathing during menstruation. Data were collected through an anonymous, self-administered, open ended questionnaire during class time. The significant predictors of use of sanitary pads were availability of mass media at home, high and middle social class and urban residence. Use of sanitary pads may be increasing, but not among girls from rural and poor families and other aspects of personal hygiene were generally found to be poor, such as not changing pads regularly or at night, and not bathing during menstruation. Lack of privacy was an important problem. Mass media were the main source of information about menstrual hygiene, followed by mothers, but a large majority of girls said that they needed more information. Instruction in menstrual hygiene should be linked to an expanded programme of health education in schools. A supportive environment hygiene has to be provided both at home and in school and sanitary pads made more affordable.¹³

Materials and Methods:-

A cross-sectional, community based study was conducted to assess menstrual hygiene practices among adolescent girls in rural and urban field practice area of Dyanand Medical College and Hospital, Ludhiana, Punjab. Study subjects included adolescent girls in the age group of 13-18 years. Pilot study was done on 12 adolescent girls initially. The present study was conducted at two conveniently selected schools urban (Government senior secondary school, Haibowal Khurd) & selected rural (Government high school, Pohir) of district Ludhiana, Punjab. The schools were selected on the basis of expected availability of adolescent girls, giving permission to conduct the study and convenience in terms of distance. The population for the study was 100 adolescent girls (13-18 years) in selected randomly from selected schools of District Ludhiana, Punjab. 10 adolescent girls from each classes (6th, 7th, 8th, 9th & 10th class) in both rural and urban schools, respectively. The group included only those girls who were present at the time of data collection and who were willing to participate in the study. Total two measures were used to collect data from the subjects.

A comparative design was used to assess the menstrual hygiene practices among adolescent girls of urban and rural schools of Ludhiana, Punjab. Convenient sampling technique was used to draw the sample from target population based on inclusion and exclusion criteria.

Inclusion criteria: Adolescent girls of age group 13-18 years.

- Who were willing to participate in the study?
- Who were available during data collection?

Exclusion criteria:

- Girls who were not willing to participate in the study.
- Girls who were not available during data collection

Description of the tool

The tool and method for data collection consists of the following parts:

- **Part A:** Structured Questionnaire to assess Socio-demographic profile (age, level of education, religion, type of family, socio-economic status, educational status of mother, educational status of father, working status mother and Menstrual profile (onset of menarche, average duration of menstruation, what type of sanitary protection material you use during menstruation, who provide information regarding menstruation, no. of pads used during menstruation period (in day), do you have dysmenorrhea during menstruation)
- **Part B:** Likert's scale to assess the menstrual hygiene practices of adolescents girls of urban and rural schools

Methods: Self report (Interview schedule)

Table 1:- Criteria measures to assess the level of menstrual hygiene practices

Level of menstrual hygiene practices	Score	Percentage (%)
• Excellent	31-40	76-100%
• Good	21-30	51-75%
• Average	11-20	26-50%
• Poor	0-10	0-25%

The content validation was done by experts in the field of clinical nursing, nursing education and nursing research to validate the content and language. Tool was found complete in terms of content and clarity of language. Reliability of research tool was determined by test re-test method and tool was found to be reliable i.e. 0.89. Data was collected in the month of March, 2013 in rural and urban schools. Permission for data was taken from the Principals of urban and rural schools. A rapport was built up with the girl students, the purpose of the study was explained to them and their written and verbal consents were obtained. Girls were interviewed for data with the help of established tool. Anonymity of subjects and confidentiality of information was maintained. It was ensured that the study would not affect the participant in any way. It was also ensured that there would be no interference in the privacy of subjects during whole study.

Data was analyzed using descriptive and inferential statistics. The various statistical measures used for analysis were percentage and frequency distribution, t-test to compare the menstrual hygiene practices of adolescent girls of urban and rural schools and ANOVA and t-test to find out the association between menstrual hygiene practices and selected demographic variables of adolescents girls of urban and rural schools of Ludhiana, Punjab.

Results:-

The subjects were interviewed to assess menstrual hygiene practices and comparison was done among urban and rural schools adolescent girls.

Data was analyzed as per objectives of the study

The analyzed data is organized in the following sections:

- **Section 1:** Socio-demographic profile of urban and rural adolescent girls.
- **Section 2:** Menstrual profile of urban and rural adolescent girls.
- **Section 3:** *Objective 1-* To assess the menstrual hygiene practices among adolescent girls of urban and rural schools of Ludhiana, Punjab.
- **Section 4:** *Objective 2-* To compare the menstrual hygiene practices among adolescent girls of urban and rural schools of Ludhiana, Punjab.
- **Section 5:** *Objective 3-* To find out association between menstrual hygiene practices and selected demographic variables among adolescent girls of urban and rural schools of Ludhiana, Punjab.
- **Section 6:** *Objective 4-* To prepare information, education and communication regarding menstrual hygiene practices.

SECTION -1 Socio –Demographic profile of urban and rural adolescent girls

Table 2:- Distribution of urban and rural girls according to socio –demographic profile

Socio-Demographic Variables	N = 100	
	Urban (n=50) f (%)	Rural (n=50) f (%)
Age (in years)		
13-14	11(22)	20(40)
15-16	35(70)	22(44)
17-18	04(08)	08(16)
Level of education		
IX Class	21(42)	30(60)
X Class	29(58)	20(40)
Religion		
Hindu	37(74)	06(12)
Sikh	12(24)	40(80)
Muslim	01(02)	02(04)
Any other	-	02(04)
Type of family		
Joint	22(44)	13(26)
Nuclear	28(56)	37(74)
Socio Economic Status		

<5000	15(30)	42(84)
5001-10000	27(54)	08(16)
10001-15000	05(10)	-
>15001	03(06)	-
Educational status of mother		
Illiterate	27(54)	12(24)
Elementary	11(22)	28(56)
Secondary	06(12)	09(18)
Senior secondary	03(06)	-
Graduate and above	03(06)	01(02)
Educational status of father		
Illiterate	06(12)	09(18)
Elementary	17(34)	22(44)
Secondary	20(40)	11(22)
Senior secondary	06(12)	08(16)
Graduate and above	01(02)	-
Working status of mother		
Working	22(44)	09(18)
Non working	28(56)	41(82)

SECTION-2 Menstrual profile of urban and rural adolescent girls**TABLE 3:-** Distribution of urban and rural girls according to menstrual profile

N = 100

Menstrual Profile Variables	Urban <i>f</i> (%)	Rural <i>f</i> (%)
Onset of menarche (in years)		
12	10 (20)	03(06)
13	20 (40)	24(48)
14	16 (32)	20(40)
15	04(08)	03(06)
Average duration of menstruation (in days)		
3-5	-	13(26)
> 5	50(100)	37(74)
Type of sanitary protection material using		
Cotton	02(04)	04(08)
Cloth material	08(16)	15(30)
Sanitary pads	40(80)	31(62)
Informant regarding menstruation?		
Parents	34(68)	44(88)
Siblings	03(06)	-
Teachers	12(24)	04(08)
Friends	01(02)	02(04)
No. of pads used during menstruation (in a day)		
>5	-	01(02)
3-5	48(96)	28(56)
<2	02(04)	21(42)
Dysmenorrhoea?		
Yes	30(60)	31(62)
No	20(40)	19(38)

SECTION-3

Objective 1-To assess the menstrual hygiene practices among adolescent girls of urban and rural schools of Ludhiana, Punjab.

Table 4:-Distribution of urban and rural girls according to their level of menstrual hygiene practices

Level of menstrual hygiene practices	N=100	
	Urban f (%)	Rural f (%)
Excellent (31-40)	17(34)	04(08)
Good (21-30)	31(62)	38(76)
Average (11-20)	02(04)	08(16)
Poor (0-10)	0(0)	0(0)

Maximum Marks = 40

Minimum Marks = 0

SECTION-4

Objective 2- To compare the menstrual hygiene practices among adolescent girls of urban and rural schools of Ludhiana, Punjab.

Table 5:- Comparison of menstrual hygiene practices among urban and rural school girls

Group	N	Mean ± SD	Unpaired t-test	N=100
				p-Value
Urban	50	28.24±3.8	2.58	0.843 ^{NS}
Rural	50	25.18±0.59		

Maximum Marks = 40

Minimum Marks = 0

NS- Non Significant

Table 5 revealed that the mean score of menstrual hygiene practices of urban adolescent school girls was higher i.e. 28.24 than the mean score of menstrual hygiene practices of rural adolescent girls i.e. 25.18. The difference was found to be statistically non significant at p=0.05 level of significance. Thus it is concluded that in spite of difference of school background (urban and rural) of adolescent girls there was no significant difference found in their mean score of menstrual hygiene practices.

SECTION-5

Objective 3- To find out association between menstrual hygiene practices and selected demographic variables among adolescent girls of urban and rural schools of Ludhiana, Punjab.

Table 6:- Association of menstrual hygiene practices with age

Age (in years)	Rural (n=50)				Urban (n=50)			
	n	Mean ± SD	F value	p-value	n	Mean ± SD	F value	p-value
13-14	20	25.16±3.71			11	30.54±2.58		
15-16	22	24.90±4.96	.242	.786 ^{NS}	35	27.64±4.08	2.73	0.75 ^{NS}
17-18	08	26.12±3.48			04	27.20±2.94		

Maximum Marks = 40

Minimum Marks = 0

NS- Non Significant

Table 7:- Association of menstrual hygiene practices with level of education

N=100

Level of education	Rural (n=50)				Urban (n=50)			
	n	Mean ± SD	Unpaired t-test	p-value	n	Mean ± SD	Unpaired t-test	p-value
IX	30	24.53±3.8			21	29.31±4.44		
			2.21	.143 ^{NS}			2.46	.123 ^{NS}
X	20	26.15±4.71			29	27.85±3.00		

Maximum Marks = 40

NS- Non Significant

Minimum Marks = 0

Table 8:- Association of menstrual hygiene practices with religion

N=100

Religion	Rural (n=50)				Urban (n=50)			
	n	Mean ± SD	F value	p-value	n	Mean ± SD	F value	p-value
Hindu	06	24.83 ± 4.11			37	27.83±3.46		
Sikh	40	25.02± 4.25			12	29.25±4.93		
Muslim	02	29.50± 3.53	.718	.546 ^{NS}	01	31.00±	.866	.427 ^{NS}
Any other	2	25.50 ± 5.65			-	-		

Maximum Marks = 40

NS- Non Significant

Minimum Marks = 0

Table 9: Association of menstrual hygiene practices with type of family

N=100

Type of family	Rural (n=50)				Urban (n=50)			
	n	Mean ± SD	Unpaired t-test	p-value	n	Mean ± SD	Unpaired t-test	p-value
Joint	13	24.78±4.00			22	29.04±3.63		
			.167	.685 ^{NS}			.394	.533 ^{NS}
Nuclear	37	25.33±4.34			28	27.62±3.94		

Maximum Marks = 40

NS- Non Significant

Minimum Marks = 0

Table 10:- Association of menstrual hygiene practices with socio economic status

N=100

socio economic status	Rural (n=50)				Urban (n=50)			
	n	Mean ± SD	F value	p-value	n	Mean ± SD	F value	p-value
<5000	42	24.83±4.33			15	26.53±4.71		
5001-10000	08	27.00±3.20			7	29.32±2.99		
			1.79	.186 ^{NS}			1.93	.138 ^{NS}
10001-15000	-	-			05	28.00±4.96		
>15001	-	-			03	27.00±3.00		

Maximum Marks = 40

NS- Non Significant

Minimum Marks = 0

Table 11:- Association of menstrual hygiene practices with educational status of mother

N=100

Educational status of mother	Rural (n=50)				Urban (n=50)			
	n	Mean ± SD	F value	p-value	n	Mean ± SD	F value	p-value
Illiterate	12	25.50±3.84			26	28.23±3.27		
Elementary	28	25.25±4.28			11	27.81±5.01		
Secondary	09	24.11±4.72	.636	.596 ^{NS}	06	28.66±3.44	1.60	.179 ^{NS}
Senior secondary	-	-			03	30.66±2.30		
Graduate and above	01	30.00			03	29.66±3.51		

Maximum Marks = 40

Minimum Marks = 0

NS- Non Significant

Table 12:- Association of menstrual hygiene practices with educational status of father

N=100

Educational status of father	Rural (n=50)				Urban (n=50)			
	n	Mean ± SD	F value	p-value	n	Mean ± SD	F value	p-value
Illiterate	09	26.50±4.06			06	29.83±3.31		
Elementary	22	24.68±3.94			17	27.00±3.38		
Secondary	11	24.66±5.56	.507	.680 ^{NS}	20	29.19±3.81	1.464	.229 ^{NS}
Senior secondary	08	26.00±3.07			06	26.33±5.00		
Graduate and above	-	-			01	30		

Maximum Marks = 40

Minimum Marks = 0

NS- Non Significant

Table 13:- Association of menstrual hygiene practices with working status of mother

N=100

Working status of mother	Rural (n=50)				Urban (n=50)			
	n	Mean ± SD	Unpaired t-test	p-value	n	Mean ± SD	Unpaired t-test	p-value
Working	09	25.66±3.64			22	28.86±3.27		
			.951	.334 ^{NS}			.700	.407 ^{NS}
Non-working	41	25.07±4.37			27	28.07±3.96		

Maximum Marks = 40

Minimum Marks = 0

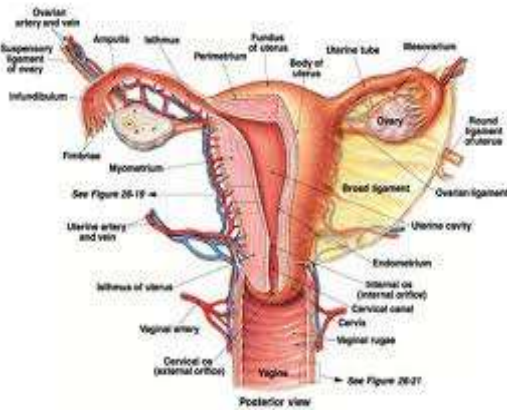
NS- Non Significant

SECTION-6

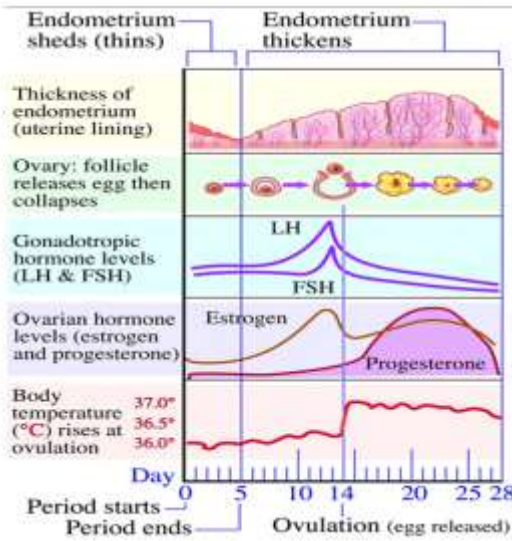
Objective 4:- To prepare information, education and communication regarding menstrual hygiene practices.

INTRODUCTION

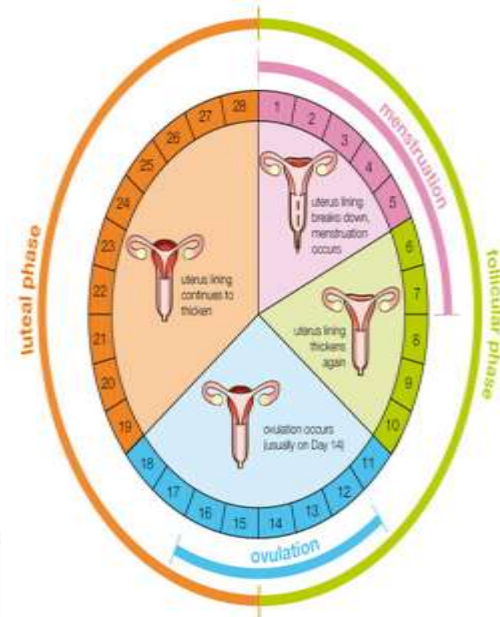
Normal sexual changes in females are onset of menses, enlargement of breast, broaden of shoulders and thighs. Puberty is a period of sexual and physical maturity in girls and it is attained at the age of 12-14 yrs.



PHASES OF MENSTRUAL CYCLE

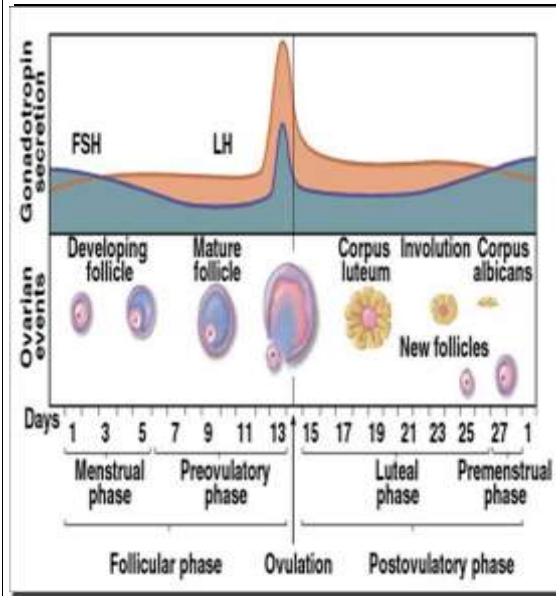


HEALTH EDUCATION REGARDING



MENSTRUAL CYCLE

It is a 'periodic and cyclic shedding of endometrium accompanied by loss of blood'. It takes place at approximately 28 days intervals between the menarche (onset of menstruation) and the menopause (cessation of menstruation). It lasts for 3-5 day during which 50-60 ml of blood is lost.



MENSTRUAL HYGIENE PRACTICES

<u>PHYSICAL AND EMOTIONAL CHANGES DURING MENSTRUATION</u>		<u>PRACTICES TO MAINTAIN MENSTRUAL HYGIENE</u>		<u>PRACTICES TO MAINTAIN PERSONAL HYGIENE</u>	
Physical Changes	Emotional Changes	Sanitary pads/ Clean clothes Should be changed 4 hourly	Daily bath	Clean the perineal are after each urination	Clean and cut your nails short
Muscle contraction 	Irritability 				
Breast tenderness 	Anxiety 	Wash hands before and after changing the pads 	Don't reuse sanitary protection material even after sun dry 	Wash and change undergarments daily 	Dry undergarment in sunlight 
Nausea 	Depression 	The pads should be covered before disposal 	Clean genitalia before changing sanitary protection material 	Change your clothes/dress daily 	Use clean washroom/toilet seat only 
Isolation 	Mood swings 	Clean genitalia area with soap and water 	Bury, burn or use dustbin for disposing sanitary protection material 		
Constipation 	Fatigue 				

Nursing Implications

The study has its implications on areas of nursing practice, nursing administration, nursing education and nursing research.

1. Nursing Practice

Nursing professionals can provide a better framework for healthy life style and school based programs. A nurse can render awareness through education for the parents and children at the school, hospital and community level.

The study finding signifies the importance of formulating and implementing IEC (information, education and communication) by nursing researcher mainly at the school settings. Since there is a gross inadequacy in knowledge and practices regarding menstrual hygiene, they are able to make significant contribution to the adolescent girls in achieving good health.

2. Nursing Education

The study had proved that improving knowledge of adolescents regarding menstrual hygiene prevent reproductive tract infection & can change their attitude. To impart the knowledge to the community the Nursing personnel need to be equipped with adequate knowledge regarding menstrual hygiene. Nursing personnel working in various health setting should be given in service education to update the knowledge and abilities in identifying the learning needs of the clients with poor menstrual hygiene practices during menstruation and planning for appropriate intervention.

The health care system pays more attention to the training of nursing students and school teachers, so that they will acquire more knowledge and will be able to help in knowing the importance of healthy lifestyle themselves.

3. Nursing Administration

The nursing administrator should plan to organize educational programme for nursing personnel regarding menstrual hygiene so that it will be helpful for them to impart knowledge to adolescents. Nurse administrator should develop menstrual hygiene practice checklist and guidelines to be followed for menstruation. The Nurse administrator should plan for the budget and utilize the resources for training of staff, health education of patients and providing regular education, Training and follow up for adolescents attending schools and colleges.

4. Nursing Research

There is a growing need for furnishing nursing research in the area of menstrual hygiene. Several research studies including the current study in the field of adolescent menstrual hygiene serves as knowledge base to the beginner nurse researchers, who can further conduct research studies in the areas of the menstrual hygiene. The nurse researchers may effectively use the results of various studies and recommend on menstrual hygiene, a very important risk factor for reproductive tract infections, is a vital aspect of health education for adolescent girls. Educational television programmes, trained school nurses/health personnel, motivated school teachers and knowledgeable parents can play a very important role in transmitting the vital message of correct menstrual hygiene to the adolescent girl of today. The nurse researchers can conduct studies to assess the effectiveness of self-care manual and health education modules for various age groups of adolescents.

Recommendations:-

- A similar study can be conducted in future on a large study sample.
- The study can be conducted to compare the menstrual hygiene practices among the urban and rural residing females.
- Qualitative study can be planned to find the poor menstrual hygiene practices and its reasons in depth.

Limitations:-

- Examinations and school absentees could have affected data collection.
- Constrain of time for data collection could have affected data collection.

Discussion:-

The findings of the study have been discussed in accordance with the objectives of the study and previously reviewed literature.

In present study it was revealed that majority of urban and rural adolescent girls had good menstrual hygiene practices. Similar study conducted by Thakre S.B (2012)⁶ at Nagpur, reported that rural and urban adolescents had inadequate menstrual hygiene practices.⁶

Present study revealed that the mean score of menstrual hygiene practices of urban adolescent girls was higher i.e. 28.24 than the mean score of menstrual hygiene practices of rural adolescent girls i.e. 25.18. The difference was found to be statistically non significant at $p=0.05$ level of significance. Findings are consistent with those reported by Salve S.B (2012)⁷ at MGM Medical College Aurangabad which revealed that the menstrual hygiene practices of urban girls was higher than rural girls and the difference was statistically significant at $p=0.05$ level of significance.⁷

The study revealed that there is no association between menstrual hygiene practices and selected demographic variables (age, level of education, religion, type of family, socio economic status, educational status of mother, educational status of father, working status mother) among adolescent girls of urban and rural schools of Ludhiana, Punjab. These findings are also supported by another study conducted by Salve S.B (2012)⁷ at MGM Medical College Aurangabad which revealed that there is no association between menstrual hygiene practices and selected demographic variables i.e. (age, religion, type of family and socio economic status) among rural and adolescent girls.

Conclusion:-

It is concluded that majority of urban girls i.e. 31(62%) and rural girls i.e. 38(76%) had good menstrual hygiene practices. The mean score of menstrual hygiene practices of urban adolescent girls is higher i.e. 28.24 than the mean score of menstrual hygiene practices of rural adolescent girls i.e. 25.18 but the difference was found to be statistically non significant at $p=0.05$ level of significance and it is also concluded that there is no association between menstrual hygiene practices and selected demographic variables among adolescent girls of urban and rural schools of Ludhiana, Punjab. In the light of the above findings and personal experience of the investigator the following recommendations are offered.

1. A similar study can be conducted in future on a large study sample.
2. The study can be conducted to compare the menstrual hygiene practices among the urban and rural residing females.
3. Qualitative study can be planned to find the poor menstrual hygiene practices and its reasons in depth.

Limitations:-

Lack of large sample size may result in lack of representativeness and generalizability to the larger population. Moreover, the data was collected from selected schools of district Ludhiana, Punjab. In order to make findings generalizable, a large geographical area based study is recommended to assess the menstrual hygiene practice among adolescent girls. Despite of these limitations, the study had a strong design and care was taken at every step to ensure the randomness in the sample and minimize bias in the findings.

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Conflicts of interest: None

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