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A Comparative Study to Assess the Knowledge Regarding Menstrual Accessories among the Adolescent Girls of Selected Rural and Urban Schools of District Ludhiana, Punjab

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Introduction

Every living thing in nature is susceptible to changes. The flower that blooms today will fall off tomorrow, the leaf that looks green today will get dried off, so is with the humans. Adolescence is a transitional stage of physical and psychological development that generally occurs during the period from puberty to adulthood. Adolescence period is biological, psychological, sexual and social development during 10-12 years and ends at 19-20 years.[1]

Menstrual hygiene is defined as an adolescent girl using a clean menstrual material to absorb or collect blood that can be changed in privacy as often as often as necessary for the duration of the menstruation period, using soap and water for washing where the body as required, keep perineal area clean from anterior to posterior, cotton under garments preferred. **menstrual cloth pad** which she makes its own and range from folded wash cloths to pads similar to the cloth menstrual pads available commercially. They may be hand or machine washed, and then dried on a clothes line or in a cloth dryer, depending on the instructions from the manufacturer. Different fabrics require different care methods. The next is **sanitary pad** which is a type of feminine hygiene product that is worn externally, unlike tampons and menstrual cups which are worn inside the vagina. The pad has to be changed several times in 24 hours depending on the menstrual flow is heavy or light. The third is **tampon.** It is another way to deal with period. It‟s a form of menstrual protection made of cotton or rayon which is inserted into the vagina to absorb menstrual fluid during the period. **menstrual cup** is also one type. It is a device that is inserted into the vagina during menstruation its purpose to collect menstrual fluid and prevent its leaking onto clothes. A female is generally having 456 total menstruation cycles throughout her life;[1] menstrual cups are cheaper than disposable pads and tampons. On an average a pad costs Rs.15-18 and ideally for a complete 5 to 7 days of a menstrual cycle a woman should use at least 40 pads per period. However, it depends on individuals, the menstrual flow and the quality of sanitary pad.

Objectives

1. To assess the level of knowledge regarding menstrual accessories among the adolescent girls of selected rural and urban schools.
2. To compare the level of knowledge regarding menstrual accessories among the adolescent girls of selected rural and urban schools.
3. To find out the association between the level of knowledge regarding menstrual accessories among the adolescent girls of selected rural and urban schools.
4. To determine the association between the level of knowledge regarding menstrual accessories among adolescent girls of selected rural and urban school with selected sociodemographic variables.
5. To prepare and disseminate IEC guidelines in the form of pamphlet regarding the use of various type of menstrual accessories.

Research approach and research design

A quantitative research approach of this study and A comparative research design, only two groups were selected as the study subjects.

Sample and sampling technique.

In this study, sample comprised of 200 adolescent girls selected from rural and urban schools of District Ludhiana, Punjab. A purposive sampling is a type of non-probability sampling in which researchers rely on their own judgment when choosing members of the population to participate in their study

Description of tool

Tool consists of two parts:

Part 1:

a) Consist of socio-demographic variables of adolescent girls which includes age (in years), standard, religion, dietary pattern, type of family, socio-economic status, education status of father and mother, occupation status of father and mother.

b) Consist of menstrual profile of menstrual accessories Age of menarche (in years), Duration of menstrual cycle is (in days), Menstruation is a, Menstrual cycle, Material you used during menstruation, During menstrual cycle how many sanitary pads do you used, Have you ever experienced any allergy or rashes by the use of sanitary pad, Have you feel pain during menstruation, Do you ever miss your school due to menstruation, Do you miss other activities (Sports, games, social gatherings) during menstruation, For relieving the menstrual pain which method is best, Source of information regarding menstruation.

c) Part 2:

Consist of self-structured multiple-choice question to assess the level of knowledge regarding menstrual accessories which includes 30 items.

CRITERION MEASUREMENT

Maximum score-30 Minimum score-0

Sr. no	**Level of knowledge**	**Scores**
1.	Good	21-30
2.	Average	11-20
3.	Poor	0-10

Ethical considerations

- A written permission was taken from the ethical committee of Shaheed Kartar Singh Sarabha College of Nursing Ludhiana, Punjab.
- A written permission was taken from the concerned Principals of selected urban and rural schools of District Ludhiana, Punjab.
- A written consent was taken from sample.
- Confidentiality of the information obtained from adolescent was maintained by researcher.

Section-1(a)

Table 1

Percentage distribution of sociodemographic variables of selected adolescent girls of rural and urban schools.

N= 200

Socio–demographic variables	**Rural schools n_1=100 f (% age)**	**Urban schools n_2=100 f (% age)**
Age (in years) *		
15- 16	64 (64.0)	51 (51.0)
17-18	30 (30.0	43 (43.0)
19-20	6 (6.0)	6 (6.0)
Standard		
10th	40 (40.0)	26 (26.0)
11th	32 (32.0)	45 (45.0)
12th	28 (28.0)	29 (29.0)
Religion		
Hindu	15 (15.0)	44 (44.0)
Sikh	79 (79.0)	52 (52.0)

Muslim	6 (6.0)	2 (2.0)
Christian	0	2 (2.0)
Dietary Pattern		
Vegetarian	58 (58.0)	61 (61.0)
Non- Vegetarian	11 (11.0)	27 (27.0)
Eggetarian	31 (31.0)	12 (12.0)
Type of family		
Nuclear	42 (42.0)	46 (46.0
Joint	50 (50.0)	52 (52.0)
Extended	8 (8.0)	2 (2.0)
Socio economic status (kuppuswamy's scale 2020)		
Upper (I)	0	0
Upper middle (II)	6 (6.0)	16 (16.0)
Lower middle (III)	10 (10.0)	38 (38.0)
Upper lower (IV)	64 (64.0)	42 (42.0)
Lower (V)	20 (64.0)	4 (4.0)
Educational status of father		
Illiterate	16 (16.0)	3 (3.0)
primary	30 (30.0)	27 (27.0)
high school	42 (42.0)	49 (49.0)
higher secondary	10 (10.0)	12 (12.0)
Graduation	2 (2.0)	9 (9.0)
Educational status of mother		
Illiterate	24 (24.0)	19 19.0)
primary	35 (35.0)	31 (31.0)
high school	29 (29.0)	25 (25.0)
higher secondary	10 (10.0)	10 (10.0)
Graduation	2 (2.0)	15 (15.0)
Occupation status of father		
Employed	18 (18.0)	32 (32.0)
Unemployed	7 (7.0)	10 10.0)
Self employed	75 (75.0)	58 (58.0)
Occupation status of mother		
Employed	12 (12.0)	6 (6.0)
Unemployed	34 (34.0)	45 (45.0)
Self employed	54 (54.0)	49 (49.0)

Table 1: depicted the percentage distribution of socio-demographic variables of selected adolescent girls of rural and urban schools which were distributed into various categories according to age, standard, religion, dietary pattern, type of family, socio-economic status, education status of father, education status of mother, occupation status of father, occupation status of mother.

According to **age** (in years) of adolescent girls, in rural schools majority 64% were belonged to the age group of 15-16 years followed by 30% were belonged to age group of 17-18 years and least 6% were belonged to the age group 19-20 years, Whereas in urban schools, majority 51% were belonged to age group of 15-16 years followed by 43% were belonged to age group of 17-18 years and least 6% were belonged to age group of 19-20 years.

According to **standard**, in rural schools, majority 40% of adolescent girls were studied in 10th standard followed by 32% were studied in 11th standards and least 28% were studied in 12th standard. Whereas in the urban schools, majority 29% were studied in 11th standard followed by 45% were studied in 11th standards and least 29% were studied in 12th standard.

According to **religion,** in rural schools, maximum 79% were belonged to sikh religion followed by 15% were belonged to Hindu religion and minimum 6% were belonged to Muslim religion. Whereas, in urban schools maximum 52% belonged to sikh religion followed by 44% were belonged to Hindu religion & minimum 2% were belonged to each in Muslim and Christian religion.

According to **dietary pattern**, in rural schools majority 58% adolescent girls were vegetarian followed by 31% were eggetarian and least 11% were non-vegetarian. Whereas, in urban schools majority 61% were vegetarian followed by 27% were non- vegetarian and least 12% were eggetarian.

According to **type of family**, in rural schools maximum 50% were belonged to joint family followed by 42% adolescent girls were belonged to nuclear family minimum 8% adolescent girls were belonged to extended family. Whereas, in urban schools, maximum 52% were belonged to joint family followed by 46% were belonged to nuclear family and minimum 2% were belonged to extended family.

According to **socio-economic status,** in rural schools, maximum 64% were found in upper lower class followed by 20% were found in lower class and 10% were found in lower middle class and minimum 6% were found in upper middle class. Whereas, in urban schools, maximum 42% were found in upper lower class followed by 38% were found in lower middle class followed by 16% were found in upper middle class and least 4% were found in lower class.

According to **education status of father**, in rural schools, majority 42% were completed high school education followed by 30% were completed primary school education, 16% were illiterate, 10% adolescent were completed higher secondary education and least 2% were completed graduation, whereas in urban schools maximum of 49% were completed the high school education followed by 27% were completed primary school education and 12% were completed higher secondary education 9% were completed graduation and minimum 3% were illiterate.

According to **education status of mother**, in rural schools maximum 35% were completed primary school education followed by 29% were completed high school education, 24% were illiterate, 10% were from higher secondary education and minimum 2% were completed graduation. Whereas, in urban schools maximum 31% were completed the primary education followed by 25% were completed high school education and least 19% were illiterate, 15% were completed graduation and minimum 10% were completed their higher secondary education.

According to **occupation status of father** in rural schools maximum 75% occupation were self-employed followed by 18% were employed and minimum 7% were unemployed. Whereas, in urban schools maximum 58% were self-employed followed by 32% were employed and minimum 10% were unemployed.

According to **occupation status of mother** in rural schools maximum 54% of were self-employed followed by 34% were unemployed and at least 12% were employed. Whereas, in urban schools maximum 49% were self-employed followed by 45% were unemployed and minimum 6% of adolescent girls were employed.

Section-1(b)

Table 2: Percentage distribution of menstrual profile of selected rural and urban schools

Menstrual profile	**Rural schools n_1=100 f (% age)**	**Urban schools n_2=100 f (% age)**
Age of menarche (in years)		
<10	0	0
11-12	4 (4.0)	11 (4.0)
13-14	72 (72.0)	74 (74.0)
>15	24 (24.0)	15 (15.0)
Duration of menstrual cycle is (in days)		
1-2	3 (3.0)	4 (4.0)
3-4	74 (74.0)	77 (77.0)
5-7	20 (20.0)	18 (18.0)
>8	3 (3.0)	1 (1.0)
Menstruation is a		
Physiological process	97 (97.0)	81 (81.0)
Disease	0	2 (2.0)
Curse of God	0	17 (17.0)
Infection	3 (3.0)	0
Menstrual cycle		
Regular	97 (97.0)	96 (96.0)

Irregular	3 (3.0)	4 (4.0)
Material you used during menstruation		
A piece of cloth	0	0
A sanitary pad	6 (6.0)	8 (8.0)
Menstrual cup	94 (94.0)	90 (90.0)
Tampons	0	2 (2.0)
During menstrual cycle how many sanitary pads do you used		
4-5	15 (15.0)	33 (33.0)
5-6	27 (27.0)	36 (36.0)
6-7	21 (21.0)	12 (12.0)
More than seven	37 (37.0)	19 (19.0)

Have you ever experienced any allergy or rashes by the use of sanitary pad?		
Sometimes Always Not at all	31 (31.0) 5 (5.0) 64 (64.0)	37 (37.0) 2 (2.0) 61 (61.0)
Have you feel pain during menstruation?		
Never	8 (8.0)	8 (8.0)
Sometimes	41 (41.0)	58 (58.0)
Always	21 (21.0)	26 (26.0)
Frequently	30 (30.0)	7 (7.0)
Do you ever miss your school due to menstruation?		
Sometimes	35 (35.0)	42 (42.0)
Rarely	10 (10.0)	25 (25.0)
Always	10 (10.0)	4 (4.0)
Not at all	45 (45.0)	29 (29.0)
Do you miss other activities (sports, games, social gatherings) during menstruation?		
Sometimes Rarely Always Not at all	46 (46.0) 13 (13.0) 11 (11.0) 30 (30.0)	30 (30.0) 12 12.0) 7 (7.0) 51 (51.0)
For relieving the menstrual pain which method is best	56 (56.0)	41 (41.0)
Rest	0	27 (27.0)
Exercise	36 (36.0)	10 (10.0)
Drinking hot water	8 (8.0)	22 (22.0)
Hot water bottle		
Source of information regarding menstruation		
Family	72 (72.0)	76 (76.0)
Health worker	1 (1.0)	8 (8.0)
Friend	27 (27.0)	16 (1 6.0)
Any other	0	0

Table 2 depicts the percentage distribution of menstrual profile characteristics of selected adolescent girls of rural and urban schools.

According to **age of menarche (in years)** of adolescent girls, in rural schools maximum 72% were found menarche between 13-14 years followed by 24% were found menarche at >15 years and minimum 4% were found between 11-12 years. Whereas, in urban schools maximum 74% were found menarche between 13-14 years followed by 15% were found at >15 years and minimum 11% were found 11-12 years.

According to the **duration of menstrual cycle** in rural schools, 74% were having 3-4 days cycle followed by 20% were having 5-7 days and 3% were having >8 days and minimum 3% were having 1-2 days cycle. Whereas, in urban schools maximum 77% were having 3-4 days cycle followed by 18% were having 5-7 days, least 4% were having 1-2 days and minimum 1% were having > 8 days cycle.

According to the **menstruation process** in rural schools 97% were answered it is a physiological process followed by 3% were answered that it is infection. Whereas, in urban schools maximum 81% answered it is a physiological process followed by 17% were answered that it is a curse of God and minimum 2% answered that it is a disease.

According to **menstrual cycle,** in rural schools, 97% were having regular menstrual cycle followed by least 3% were having their irregular menstrual cycle. Whereas, in urban schools majority 96% were having their regular cycle followed by least 4% of were having irregular menstrual cycle.

According to **sanitary pad** in rural schools majority 94% of were using sanitary pad followed by least 6% were using a piece of cloth. Whereas, in urban schools maximum 90% were followed by 8% were using a piece of cloth and minimum 2% were using menstrual cup.

According to **menstrual cycle** in rural schools majority 37% were using more than seven pads followed by 27% of were using 5-6 pads and 21% were using 6-7 pads and least 15% were using 4-5 pads. Whereas, in urban schools majority 36% were using 5-6 pads during the monthly menstrual cycle followed by 33% were using 4-5 pads and 19% were using more than seven pads and least 12% were using 6-7 pads.

As per the **allergy and rashes with sanitary pads**, in rural schools majority 64% were reported to none of any allergy and rashes followed by 31% were suffered sometimes allergy or rashes and least 5% were suffered always with allergy or rashes by the use of sanitary pad. Whereas, in urban schools majority 61% were reported none of allergy or rashes followed by 37% were complaints of sometimes rashes or allergy and least 2% were always suffered from allergy or rashes.

According to **painful menstruation** in rural schools, 41% were sometimes suffered painful menstruation followed by 21% were always suffered painful menstruation, 30% were frequently suffered painful menstruation and least 8% were never feel painful menstruation. Whereas, in urban schools majority 26% were always suffered followed by 58% were sometimes suffered painful menstruation. 8% were never suffered and least 7% were frequently suffered painful menstruation.

According to **miss the schools due to menstruation** in rural schools, majority 45% were never miss their school followed by 35% were sometimes miss the school, 10% of were always miss the school and least 10% of subjects were rarely miss their school. Whereas, in urban schools majority 42% were sometimes miss their school followed by 29% were never miss the school and 25% were rarely miss the school and least 4% were always miss the school.

According to **miss other activities like sports, games, social gathering** in rural schools, 46% were sometimes miss other activities 30% were never miss other activities and 13% were rarely miss others activities 11% of were always miss other activities. Whereas, in urban schools maximum 51% were never miss other activities, 30% were sometimes, 12% of adolescent girls were rarely miss other activity and least 7% were always miss other activities.

As per the **relieve the menstrual pain**, in rural schools majority 56% were think that rest helps to relieve menstrual pain followed by 36% were like to drink hot water and at least 8% were feel comfortable or feel better with using hot water bottle. Whereas, in urban schools majority 41% were think that rest helps to relieve pain followed by 27% were think exercise is better option, 10% were like to drink hot water for relieving the pain and least 22% were feel better with hot water bottle.

According to **information regarding menstruation** in rural schools maximum 72% were took the information from family members followed by 27% were took the information from their friend and minimum 1% were took information from health workers. Whereas, in urban schools maximum 76% were collect the information from family followed by 16% were took the information from friends and minimum 8% were took the information from health worker.

Section-II

OBJECTIVE: 1. To assess the level of knowledge regarding menstrual accessories among the adolescent girls of selected rural and urban schools.

Table 3

Percentage distribution of level of knowledge regarding menstrual accessories among adolescent girls of selected rural and urban schools.

N=200

Level of knowledge	**Score**	**Rural schools f (% age)**	**Urban schools f (% age)**
Good	21-30	0	6 (6.0)

Average	11-20	99 (99.0)	94 (94.0)
Poor	0-10	1 (1.0)	0

Mean ± SD (rural) =15.90±2.12 Maximum score (rural)-30

Mean ± SD (urban) =15.90±2.12 Minimum score (rural)-0 Maximum score (urban)-30 Minimum score (urban)- 0

Table 3: depicts the percentage distribution of level of knowledge regarding menstrual accessories among adolescent girls of selected rural or urban schools.

In rural schools, most of adolescent girls 99% were having average knowledge (11- 20) followed by least 1% were having poor knowledge (0-10). On the other hand, in urban schools maximum 94% were having average knowledge (11-20) followed by minimum 6% were having good knowledge (21-30).

Hence, it was concluded that most of selected adolescent girls of both rural and urban schools were having average level of knowledge.

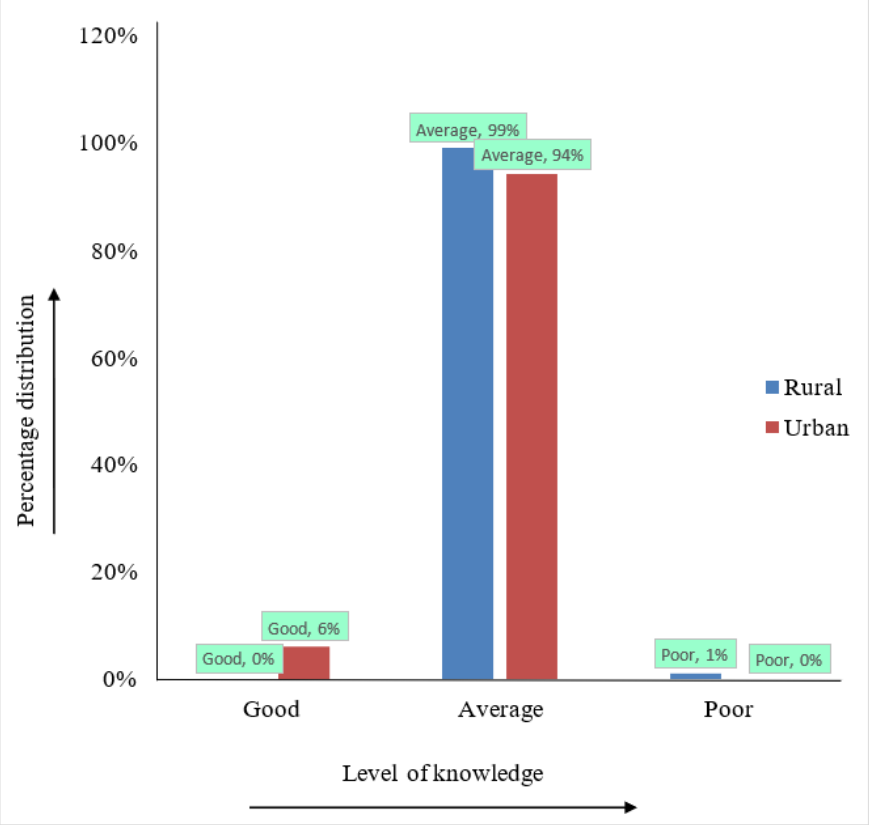

Fig.4: Percentage distribution of level of knowledge regarding menstrual accessories among adolescent girls of selected rural and urban schools.

Section-III

OBJECTIVE: -2. To compare the level of knowledge regarding menstrual accessories among the selected adolescent girls of rural and urban schools.

Table 4

Comparison of level of knowledge regarding menstrual accessories among the selected adolescent girls of rural and urban schools.

N=200

Variables	**Mean ± SD**	**Mean (%)**	**t value**	**P value**
Rural	15.90 ± 2.12	53% 57.6%	4.76	0.00**
Urban	17.30 ± 2.12			

Maximum score=30 **Significant at p ≤0.05 level of significance

Minimum score=0 df=99

Table 4: depicts the comparison between of rural and urban schools of adolescent girls according to their level of knowledge.

The Mean ± SD of rural schools were 15.90 ± 2.12 and mean percentage was 53%. Whereas Mean ± SD of urban schools were 17.30 ± 2.12 and mean percentage was 57.6%. The t value was 4.76, p value was 0.00** and df =99.

Hence, the difference between mean of both of them was found to be statistically significant at p ≤0.05 level of significance.

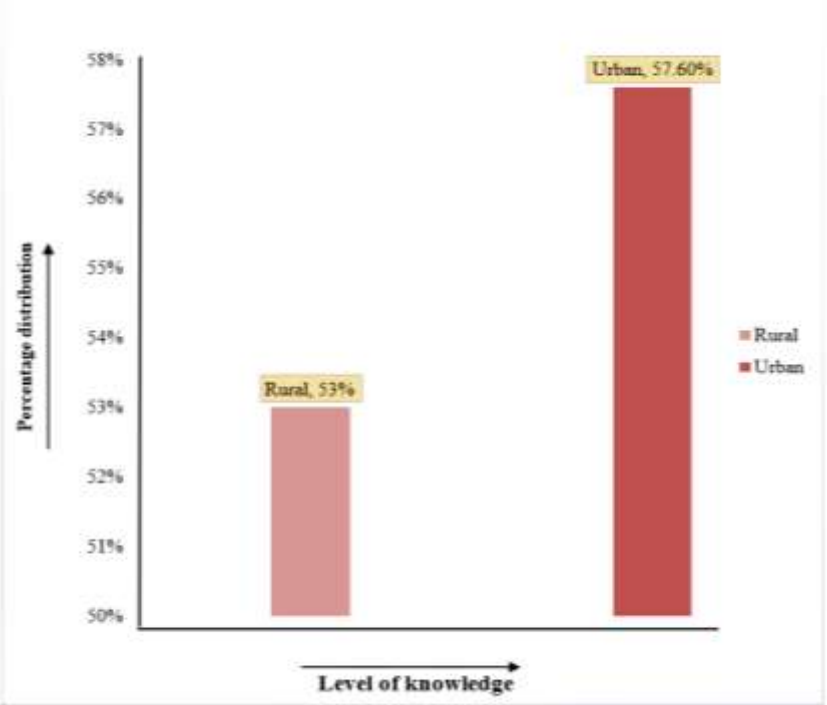

Fig.5: Comparison of level of knowledge regarding menstrual accessories among the selected adolescent girls of rural and urban schools.

Section-4

OBJECTIVE :3. To find out the association between the level of knowledge regarding menstrual accessories among the adolescent girls of selected rural and urban schools.

Table 5

Association between the level of knowledge regarding menstrual accessories among adolescent girls of selected rural and urban schools.

N=200

Variables	**Mean ± SD**	**r value**	**p value**
Rural	15.90 ± 2.12	**0.04**	**0.71**
Urban	17.30 ± 2.12		

Table 5: depicts association between level of knowledge regarding menstrual accessories among the adolescent girls of selected rural and urban schools.

According to rural schools Mean± SD was 15.90 ± 2.12. In urban schools Mean ± SD was 17.30 ± 2.12. The r value was **0.04**, p value was **0.71**.

Section-5

OBJECTIVE:4. To determine the association between the level of knowledge regarding menstrual accessories among selected adolescent girls of selected rural and urban schools with selected socio demographic variables.

Table 6

Association between level of knowledge regarding menstrual accessories among selected adolescent girls of rural and urban schools with selected sociodemographic variables.

N=200

Variables	**Rural**		**F/t p value**	**Urban**		**F/t p value**
	N	**Mean ± SD**		**N**	**Mean ± SD**	
Age (in years)						
15-16	64	16.39±1.73	**F=5.88**	51	17.35±2.12	**F=0.93**
17-18	30	15.20±2.32	**P=0.04***	43	17.09±2.19	**P=0.39**^{NS}
19-20	6	14.16±3.19	**Df=99**	6	18.33±1.36	**df=99**
Standard						
10th	40	16.55±1.75	**F=4.9**	26	17.50±2.00	**F=0.15**
11th	32	15.91±1.92	**P=0.09***	45	17.22±2.40	**P=0.39**^{NS}
12th	28	14.96±2.50	**Df=99**	29	17.24±1.78	**df=99**
Religion						
Hindu	15	16.40±1.95	**F=1.52**	44	17.91±2.37	**F=2.38**
Sikh	79	15.72±2.18	**P=0.23**^{NS}	52	16.86±1.81	**P=0.07**^{NS}
Muslim	6	17.00±0.89	**Df=99**	2	16.00±0.00	**df=99**
Christian	0				16.50±2.12	
Dietary Pattern						
Vegetarian	58	15.65±2.11	**F=1.33**	61	17.22±2.15	**F=3.27**
Non- Vegetarian	11	16.73±1.27	**P=0.27**^{NS}	27	16.85±1.66	**P=0.04***
Eggetarian	31	16.06±2.32	**Df=99**	12	18.66±2.46	**df=99**
Type of family						
Joint	42	16.14±1.87	**F=0.52**	46	17.15±1.88	**F=0.24**
Nuclear	50	15.76±2.26	**P=0.59**^{NS}	52	17.44±2.35	**P=0.78**^{NS}
Extended	8	15.50±2.56	**Df=99**	2	17.30±1.41	**df=99**
Socio economic status (Kuppuswamy's scale 2020)						
Upper (I)	0	0	**F=1.68**	0	0	**F=3.62**

Upper middle (II)	6	17.00±0.89	**P=0.18**^{NS}	16	16.12±1.99	**P=0.02***
Lower middle (III)	10	16.30±1.83	**Df=99**	38	17.89±1.99	**df=99**
Upper lower (IV)	64	15.56±2.28		42	17.36±2.14	
Lower (V)	20	16.45±1.79		4	15.75±1.26	
Educational status of father						
Illiterate	16	15.68±2.36	**F=0.51**	3	15.33±1.15	**F=2.57**
Primary	30	15.56±2.44	**P=0.73**^{NS}	27	17.81±2.20	**P=0.04***
High school	42	16.05±2.02	**Df=99**	49	17.51±2.14	**df=99**
Higher	10	16.50±1.08		12	16.92±1.68	
secondary	2	16.50±0.70		9	15.77±1.64	
Graduation						
Educational status of mother						
Illiterate	24	15.92±0.46	**F=0.74**	19	17.21±2.22	**F=0.42**
Primary	35	15.54±2.45	**P=0.57**^{NS}	31	17.67±2.15	**P=0.794**
High school	29	15.96±1.84	**Df=99**	25	17.20±2.18	NS
Higher	10	16.70±1.34		10	17.20±1.55	**df=99**
secondary	2	17.00±0.00		15	16.86±2.29	
Graduation						
Occupation status of father						
Employed	18	16.72±1.02	**F=2.13**	32	17.50±2.14	**F=0.22**
Unemployed	7	16.43±0.53	**P=0.12**^{NS}	10	17.10±1.59	**P=0.81**^{NS}
Self employed	75	15.65±2.34	**Df=99**	58	17.22±2.21	**df=99**
Occupation status of mother						
Employed	12	16.33±2.01	**F=0.57**	6	17.66±1.63	**F=0.12**
Unemployed	34	16.06±1.77	**P=0.57**^{NS}	45	17.22±1.87	**P=0.88**^{NS}
Self employed	54	15.70±2.34	**Df=99**	49	17.33±2.40	**df=99**

Table 6: depicted the association level of knowledge regarding menstrual accessories among selected adolescent girls of rural and urban schools.

According to **age** in rural schools adolescent girls, level of knowledge maximum 16.39 in the age group of 15-16, 15.20 in the age group of 17-18 years and minimum 14.16 in the age group of 19-20 years. This difference was statistically significant. Whereas, in urban schools, maximum mean 18.33 in the age group of 19-20 years followed by 17.35 in the age group of 15-16 years and minimum 17.09 in the age group of 17-18 years, the difference between them was statistically non-significant at $p \leq 0.05$ level of significance.

According to **standard** of the adolescent girls, in rural schools maximum mean score was 16.55 in the 10th class followed by 15.90 in the 11th class and minimum 14.96 scored in the 12th class. This difference is statistically significant. Whereas, in urban schools, the mean knowledge was maximum 17.50 in the 10th class followed by 17.24 in the age group of 12th class and minimum 17.22 scored in the age group of 11th class, the difference between them was statistically non-significant at $p \leq 0.05$ level of significance.

According to **religion**, in rural schools maximum 17.00 scored in Muslim religion. 16.40 scored in Hindu religion and minimum 15.72 scored in Sikh religion. This difference is statistically non- significant at $p \leq 0.05$ level of significance. Whereas, in urban schools level of knowledge was scored maximum 17.90 in Hindu religion followed by 16.86 scored in Sikh religion, 16.50 scored in Christian religion and minimum 16.00 scored in Muslim religion, the difference between them was statistically non-significant at $p \leq 0.05$ level of significance.

According to **dietary pattern**, in rural schools maximum 16.72 preferred non- vegetarian diet followed by 16.06 preferred eggetarian or 15.65 preferred vegetarian diet. This difference is statistically non-significant at $p \leq 0.05$ level of significance. Whereas, in urban schools maximum 18.66 were taking eggetarian diet followed by 17.22 were preferred vegetarian diet and minimum 16.85 were non-vegetarian, the difference between them was statistically significant.

According to the **type of family**, in rural area maximum 16.14 were belonged to joint family followed by 15.76 were belonged to nuclear family and minimum 15.50 belongs to extended family. This difference is non-significant at $p \leq 0.05$ level of significance. Whereas, in urban schools maximum 17.44 were belonged to nuclear family followed by 17.30 were belonged to extended family and minimum 17.15 were belongs to joint family, the difference between them was statistically non-significant at $p \leq 0.05$ level of significance.

According to **socioeconomic status** in rural area means level of knowledge score were maximum in upper middle followed by 16.45 belonged to under lower class. 16.30 were from lower middle and minimum 15.56 were belonged to upper lower class. This difference is statistically non-significant at $p \leq 0.05$ level of significance. Whereas, In urban schools the mean knowledge score were maximum 17.89 belonged to lower middle class followed by 17.75 were belonged to lower class and 17.35 were belonged to upper lower class. 16.12 were belonged to upper middle and minimum 15.75 were belonged to lower class, the difference between them was statistically significant.

According to **education status of father**, in rural schools the mean level of knowledge were maximum in higher secondary or graduation i.e. 16.50 followed by mean of high schools were 16.04. The mean of illiterate was 15.68 and minimum of primary schools 15.56. This difference is statistically non-significant at $p \leq 0.05$ level of significance. Whereas, in urban area the mean knowledge score was maximum 17.81 in primary schools followed by 17.51 in high schools. 16.91 were higher secondary. 15.77 were graduate and minimum 15.33 were illiterate, the difference between them was statistically significant.

According to **education status of mother**, in rural schools the mean level of knowledge was maximum in graduation i.e., 17.00 followed by 16.70 were in higher secondary schools. 15.96 were in high schools. 17.21 were in illiterate 17.21 and minimum 15.54 were in primary schools. This difference is statistically non- significant at $p \leq 0.05$ level of significance. Whereas, in urban area the mean knowledge score was maximum17.67 in primary schools followed by 17.20 were in high schools and 17.20 were in higher secondary. 16.86 were in graduation and the 17.21 were illiterate, the difference between them was statistically non-significant at $p \leq 0.05$ level of significance.

According to **occupation of father**, in rural schools the mean knowledge was highest to employed i.e. 16.72. mean of unemployed 16.42 and the mean of self- employed is 15.65. This difference is statistically non-significant $p \leq 0.05$ level of significance. Whereas, in urban area the mean knowledge score was highest in employed i.e. 17.50. Mean of self-employed 17.22 and the mean of unemployed 17.10, the difference between them was statistically non-significant at $p \leq 0.05$ level of significance.

According to **occupation of mother**, in rural area the mean knowledge was highest to employed i.e 16.33. mean of unemployed 16.05 and the mean of self-employed is 15.70. This difference is statistically non-significant at $p \leq 0.05$ level of significance. Whereas, in urban area the mean knowledge score was highest in employed i.e 17.66. Mean of self-employed 17.32 and the mean of unemployed 17.22, the difference between them was statistically non-significant at $p \leq 0.05$ level of significance.

Objective: 5 To prepare and disseminate IEC guidelines in the form of pamphlets regarding the use of different menstrual accessories.

Informational Pamphlet (English) for knowledge regarding menstrual accessories.

RECOMMENDATION

1. It recommends the health education and awareness for adolescent girls regarding menstrual accessories helps to improved their knowledge.
2. It recommends to organize the health teaching for adolescent girls and information pamphlet for rural and urban schools girls to create awareness about different menstrual accessories.
3. Involvement of multipurpose health worker and ASHA worker should be done to educate the adolescent girls regarding menstrual accessories.
4. The study can also be replicated on a larger sample to validate and generalize the findings.
5. Further longitudinal studies can be replicated to observe the effectiveness of information, education and communication activities (I.E.C)
6. Assessment of knowledge regarding menstruation and practices related to maintenance of menstrual hygiene among the women of reproductive age.

7. Similar studies can also be conducted in different cities of the country

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