

Impact of Structured Education Regarding Menstrual Hygiene Practices among Adolescent Girls

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Abstract: *Menstruation is a phenomenon unique to the females. The onset of menstruation is one of the most important changes occurring among the girls during the adolescent years. Study was aimed to assess the impact of structured education regarding menstrual hygiene practices among adolescent girls. Objectives- To assess knowledge regarding menstrual hygiene practices among adolescent girls before and after structured education. To find association between existing knowledge and demographic variables. Methodology - A Quasi Experimental research approach was used for the study. One group pre test- post test research design with 100 adolescent girls was selected by random sampling technique. Findings- Only 23% of samples in pretest answered about sun drying of the used and washed clothes. 58% of samples keep the used sanitary clothes in the hidden places and reuse of used clothes for more than one month. 100% samples do not enter in the holy places. Thus the samples were socially and culturally bounded with traditional practices during menstruation. In posttest there was significant gain in knowledge is seen. The results indicated that equal positive response to the planned teaching was found really useful to them. Conclusion-findings reveals that structured education is effective regarding menstrual hygiene practices among adolescent girls.*

Keywords: education, menstruation, hygiene, practices, adolescent girls.

1. Introduction

Learning is the addition of new knowledge and experience Interpreted in the light of past knowledge and experience. Teaching and learning is an integral part of nursing. Nurses have the responsibility to educate patients related to various aspects and keep themselves updated. Various teaching strategies are used to increase knowledge, such as lecturing, demonstration, discussion and self-education. These methods of self-education has an advantage over the others as the learner can educate himself at his own pace and it also stresses on rereading [1].

Adolescent is the most important and sensitive period of one's life. A large variety of morbidities, such as nutritional deficiency disorders, menstrual disorders, etc. prevail among adolescents [9]. The essential components of mother and childcare have already gained familiarity due to their existence since long. However importance of adolescent health care is still underrated and its significance is undetermined presumably due to benign nature of their health problems and relatively less contribution to total death [9].

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, necessary for maintaining positive reproductive health [10]. Hygiene related practices of women during menstruation are of considerable importance as it has a health impact in terms of increased vulnerability to infection [11].

Menstruation is generally considered as unclean leading to isolation of the menstruating girls and restrictions imposed on them in the family. These practices have reinforced

negative attitude toward menstruation in girls. The Center for Social Research in 1990 have reported restrictions in daily activities such as, not being allowed to take bath, change clothes, comb hair and enter holy places. Apart from these, dietary restrictions (taboo on consumption of food like rice, curd, milk, lassi, potato, onion, sugarcane etc.) during the menstrual period are also imposed [12]. There is very little awareness about menstruation among girls when they first experience it. Social prohibitions and negative attitude of parents in discussing the related issues openly has blocked the access of adolescent girls to right kind of information especially in rural and tribal communities [12].

An official press release said the scheme envisaged supplying a pack of six sanitary napkins to Below Poverty Line girls at a nominal cost of Re.1 per pack. All girls in the Above Poverty Line category will be charged Rs. 5 per pack of sanitary napkins (or the final determined cost in the state). This was approved by the Mission Steering Group of the National Rural Health Mission (NRHM) chaired by Union Minister of Health and Family Welfare Ghulam Nabi Azad [13].

2. Need of the Study

A woman spends approximately 2,100 days menstruating. That is almost six years of her life [14]. When women in rural areas are asked to spend Rs.15 on a packed of nine sanitary napkins, they respond by saying they would rather continue to use rags and spend the money on their husbands or children [15].

The Gender Hygiene Programme (GHP) launched three years ago is attempting to change this attitude towards menstrual hygiene. The programme under way in five districts in West Bengal, involves self-help groups

manufacturing inexpensive sanitary napkins from cotton and tissue paper. The programme suffered hiccups with some partner non-governmental organizations backing out and some Self-Help groups closing shop and even had issues with quality control. Dr. Dhrubajyoti Ghosh, GHP project director and an environmental sanitation engineer felt the issue of menstrual health must have a wider approach. Dr. Ghosh said, "The total sanitation programme has been going on for about 30 years, but there is a need to redefine sanitation. No one has ever considered the safe disposal of menstrual fluids." [15]

In recent years, the tremendous publicity given to sanitary products by means of social communication, such as, television, radio, and other audio-visual aids has indirectly exposed the concept of menstruation to the public. Nevertheless it is a matter of great surprise that many young girls, even today, are completely ignorant when they get their first period, especially in the lower social strata of society [16]. The survey (2008) found that 41% of respondents were not psychologically prepared for menstruation. Around 89% of women used cloth as an absorbent; 53% of them used the same cloth for two months. Around 14% of women said they suffered from urinary tract infections [15].

While both the print and visual media are full of sanitary pad advertisements, rural communities still struggle for basic information on the menstrual cycle. Out of all the respondents, 41% were not aware about menstruation prior to getting their periods. Interestingly, only 16 respondents out of the total of 686 students had received information at school. It was observed that of the girls who were aware of menstruation prior to getting their period, most had got the information from their friends and mothers; only 2% and 1% of respondents had received information from their teachers/school and books respectively. This shows that menstrual hygiene is a neglected subject in schools and that peer groups and mothers must be targeted for dissemination of information on the subject.

3. Review of Literature

3.1 Related to knowledge and practices regarding menstrual hygiene:

Anita Pradhan (March 2009), concluded Girls described the onset of menarche as a shocking or fearful event. Of the survey respondents, 17% used single use material only, 40% used reusable cloths only and 35% used both types during last menstruation. The use of sanitary pad is higher among girls in urban schools (50%) in comparison to rural (19%), and the use of old piece of cloth was higher among rural (35%) than urban (14%). In the survey, 19% Burnt 38%, Thrown with other waste, 43% buried to dispose the menstrual waste. Half of the survey respondents (53%) mentioned being ever absent due to menstruation. However, many girls shared that though physically present in the school they performed poorly in terms of concentration and attention [18].

Rajni Dhingra, Anil Kumar and Manpreet Kour (2009). Found that sample girls lacked conceptual clarity about the process of menstruation before they started menstruating due to which they faced several gynecological

problems. The most common source of information about menstruation for the majority (83%) of the sample girls were friends. There were several socio-cultural taboos related to menstruation. The level of personal hygiene and management of menstruation was found to be quite unsatisfactory. 98% of the girls believed that there should be no regular bath during menstrual cycle. The results hold implications for professionals involved in improvement of adolescent reproductive health in particular [17].

A study was done by Adhikari P et al (2007) found that they were not properly maintaining the menstrual hygiene. Only 6.0% of girls knew that menstruation is a physiologic process, 36.7% knew that it is caused by hormones. Ninety-four percentages of them use the pads during the period but only 11.3% dispose it. Overall knowledge and practice were 40.6% and 12.9% respectively [19].

A study done by Auroville Village Action Group, (January 2011) identified a general lack of information available to women about menstruation and limited options for alleviating their menstrual discomfort. Nearly all (95%) women experience some lifetime restriction associated with menstruation with the belief of impurity and being polluted. The survey revealed that choice of product used to manage menstruation (either cloth or disposable pad) is mostly influenced by cost factors, comfort and habit as well as cultural restrictions and beliefs [20].

The study was conducted by Dr. Jaimala Gupta and Dr. Hitesh Gupta (2001), concluded, the dominant feelings during the first cycle were of those of shock and anxiety. Most of the adolescents had negative opinions and misconceptions regarding menstruation. The idea that menstrual blood is impure and polluting and that is a curse on every woman had been transmitted to them mostly by the mothers or elderly female relatives of the girls. 77 percent girls did not know the system with which the menstrual flow was connected. Many girls from government schools thought that it had something to do with the excretory system [21].

3.2 Review of literature related to structured education programme

Kadam, A. (2014) found that Structured education programme was highly effective to improve the knowledge score and to improve the attitude score of subjects/ caregiver towards colostomy care of patient [2]. Anjum, S. (2014) conducted study to assess knowledge of contraceptives methods and appraisal of health education among married women and concluded After the health education married women knowledge was improved to 100% about female sterilization followed by condom 99%, skin implants 86%, oral pills 85% and emergency contraceptives 85%. Sociodemographic variable were significantly associated with existing knowledge and level of married women specially age at marriage, age at first child, occupation, income, education [3][4].

Babu, R. L. (2014) concluded that care takers had inadequate knowledge regarding non-curative care of terminally ill cancer patients. The planned education programme on non-curative care of terminally ill cancer patients was highly effective in improving the knowledge of care takers

regarding non-curative care of terminally ill cancer patients [5].

Shinde, M. (2014) concluded that demonstration regarding feeding of hemiplegic patient among caregivers was effective in increasing the skill of the caregivers regarding feeding of hemiplegic patient [6].

3.3 Literature related to menstrual hygiene practices

A study was conducted by Dr. Pragya Sharma, Anamika Sharma, Devender K. Taneja and Renuka Saha (2008) reported the most common effect of menstrual problems on daily routine was in the form of prolonged resting hours (54%) followed by inability to study (50%). More than half (52%) of the subjects discussed their problems with their mother, and 60% of the study subjects were opted for allopathic treatment for their menstrual problems [22]. Ramchandra C. Goyal (2010). Concluded Majority of the girls received the information regarding menstruation from their mothers (41%), followed by Media (24%) and friends (19%). Of the girls who developed genital tract infections, 66% used cloth. 37% girls do not disclose about their menstruation. Cleanliness of external genitalia was unsatisfactory. Hence it is important to educate the girls with scientific knowledge and dispelling their myths and misconceptions thereby encouraging safe and hygienic practices for safeguarding themselves against various infections.

In some cultures, many girls are kept at home when they start menstruating, either permanently (drop-out) or temporarily (GAPS & FAWU Uganda, 1999) during the days that they menstruate. Because of this, girls get left behind, especially in complex and abstract subjects where there is a continued building on previous knowledge. This can eventually also lead to school drop-out. Research confirms that the onset of puberty leads to significant changes in school participation among girls [23].

The Forum for African Women Educationist (FAWE 2003) in Uganda observes that monthly menstruation period also creates obstacles for female teachers. They either report themselves sick, or go home after lessons as fast as possible and do not have enough time to give extra attention to children who need it. The most important conclusion to be drawn is that there is a lack of courage and (political) will to acknowledge menstrual hygiene as a problem. The gender-unfriendly school culture and infrastructure, and the lack of adequate menstrual protection alternatives and/or clean, safe and private sanitation facilities for female teachers and girls, undermine the right of privacy, which results in a fundamental infringement of the human rights of female teachers and girls through the combination of the lack of good quality education, the lack of sufficiently well-trained teachers and because of this overcrowded classrooms [24].

In focus group discussions in one study by Fenandes (2008), many girls revealed that when they did attend school during menstruation they often performed poorly, due to the worry that boys would realize their condition. In this study 28 per cent of students reported not attending school during menstruation, due to lack of facilities. Many mentioned that

fear of staining on their clothes caused them stress and depression [25].

Emily Oster and Rebecca Thornton (2010) says the claim that girls miss significant amounts of school during their periods is largely based, up till now, on anecdotes and assumptions. We started by asking girls whether they missed school during their period; similar to other studies, over half reported ever missing school days due to menstruation. Although girls in our sample were indeed less likely to attend school on days they had their period, the effect is very, very tiny. On non-period days, girls were in school about 85.7 percent of the time; on days they are menstruating, they were in school 83.0 percent of the time (a difference of only 3.2 percent). The researchers also found that providing better sanitary products – in their case menstrual cups – made no difference in closing the (very small) attendance gap [26].

3.4 Studies related to menstruation and taboo

Study was conducted by Marrow, P. (2002) on menstrual taboos in Russian Orthodox Christians. Menstruating women must live secluded in a little hut during this time. They do not attend church services, cannot have any contact with men, and may not touch raw or fresh food. Menstruating women are also thought to offend and repel fish and game. The air surrounding menstruating women is believed to be especially polluting to young hunters; if a hunter gets close enough to a woman to touch, then all animals will be able to see him and he won't be able to hunt them. A menstruating woman's gaze is even thought to affect the weather negatively [27].

According to Bharadwaj & Patkar (2004), concluded "Minimal effort has gone into the production and social marketing of low-cost napkins, reusable materials, research into biodegradables, etc. Research and development efforts have been limited to commercial ventures that are unable to market products that are affordable for the poorest of the poor. The issue of washing of soiled materials and environmentally friendly disposal of napkins is absent from waste management training, infrastructure design and impact evaluation. An average woman throws away 125 to 150 kgs of tampons, pads and applicators in her lifetime. The great majority of these end up in landfills, or as something the sewage treatment plants must deal with." Examples from India show that waste can be managed effectively. In the federal state of Tamil Nadu UNICEF has developed a cheap incinerator fed by firewood to handle the waste of sanitary napkins; in a pilot project in the federal state of Maharashtra girls' latrines are supplied with special wells in which sanitary napkins are composted. In the federal state of Uttar Pradesh, locally fabricated sanitary napkins of sifted timber ashes are wrapped up in a cloth, so that they can be broken down easily [28].

An article by Ananya Dutta in the newspaper 'The Hindu' (KOLKATA, March 18, 2010), stated that, the Gender Hygiene Programme (GHP) launched here three years ago is attempting to change this attitude towards menstrual hygiene. The programme, under way in five districts in West Bengal, involves self-help groups (SHG) manufacturing inexpensive sanitary towels from cotton and tissue paper. The napkins are then sold by the same women to others in the village. The

set-up requires a capital of Rs.1600 and assures the women involved, an average income of Rs.900 a month. It may not be the most attractive economic option available to an SHG, but it is self-sustaining with a steady source of income. At the same time, it promotes hygiene, said Dhrubajyoti Ghosh, GHP project director and an environmental sanitation engineer. The programme suffered hiccups with some partner non-governmental organizations backing out or some SHGs closing shop and even had issues with quality control, but after three years, the GHP has been able to come up with a standardized product.

4. Research Question

To assess the Impact of structured education regarding menstrual hygiene practices among adolescent girls.

4.1 Objectives

- To identify the existing knowledge of adolescent girls regarding practices of menstrual hygiene before administration of planned teaching programme.
- To assess the gain in knowledge of adolescent girls regarding practices of menstrual hygiene after administration of planned teaching.
- To determine the relationship between selected demographic variables and its effect on the knowledge of adolescent girls regarding menstrual hygiene.

4.2 Assumption

Knowledge of practices about menstrual hygiene varies from person to person depending on the hygienic practices, health habits, socio-economic condition & educational standard. In rural community adolescent girls does not receive knowledge of menstruation and menstrual hygiene from home & school. If the adolescent girl is having knowledge, she will be able to practice hygienic practices during menstruation.

4.3 Hypothesis

H_0 : There will not be any significant increase in the knowledge and practice regarding menstrual hygiene

H_1 : The knowledge gain by adolescent school girls exposed to planned teaching programme about menstruation & menstrual hygiene will be significantly change the practices regarding menstrual hygiene.

5. Methodology

Research methodology involves the systematic procedure by the researcher which starts from the initial identification of programme to its final conclusion [7]

- **Research approach:** - Selection of an appropriate research that involves a general set of orderly, disciplined procedures to acquire information is of utmost importance in a research study [8].
- **Research Approach-** Evaluatory approach is used to assess the impact of structured education.
- **Research Design-** In present study one group pre testpost test design was adapted.

- **Independent variable:** - In this study independent variable is planned teaching on menstruation and menstrual hygiene practices.

- **Dependent Variables:-** In this study dependent variables are knowledge of menstrual hygiene practices by adolescent girls.

- **Study Area**

- Present study was conducted at one district of Maharashtra state. The male and female ratio of the district is 1000:957 (according to District Statistic Office, December, 2010). The total literacy rate of the District is 76.62%. The female literacy rate is 66.88% and the male literacy rate is 86.25%.

- **Study Population-** The population selected for the study consisted of all adolescent girls who were studying in 8th and 9th standard and who attained menarche in rural schools

- **Sample size-** The samples size consist 100 adolescent girls from selected schools of one of the districts from Maharashtra.

- **Sampling Technique** used for the study was purposive sampling.

- **Inclusion criteria:-**

- Adolescent girls who attained menarche.
- Adolescent girls who are studying in eighth and ninth standard from the schools of the District.
- Adolescent girls who are willing to participate in study.

- **Exclusion criteria:-**

- Adolescent girls who are not attained menarche.
- Adolescent girls who are not ready to participate in study

6. Findings and Discussion

Age

It is observed that, majority of the samples i.e. 48 percent were in the age group of 15 years and 40 percent were in the age group of 14 years, 12 percent were in the age group of 13 years. As investigator has been taken the adolescent girls studying in 8th and 9th standard, hence all the girls are in the age group 13 years to 15 years of age.

Educational Standard

Out of total number of samples 68 % are studying in 9th standard and 32 % are in the 8th standard. As investigator has taken only those samples for study that attained menarche, hence the majority of samples are from 9th class.

Religion

It is observed that majority of the girls i. e. 83% were from Hindu religion, 15% were from Muslim community and only 2% were from Christianity.

Father's Education

Majority of the sample's father i.e. 43 percent were completed their secondary education. 30 percent were taken primary education. 22 percent were illiterate. And only 5 percent were completed their graduation.

This shows that only 78 percent of samples' fathers are literate. Most of them i.e. 30 percent have completed only basic education. And only 5% are taken higher education.

Mother's Education

Majority of the sample's mother i.e. 37 percent were completed their primary education. 35 percent were taken secondary education. 25 percent were illiterate. And only 3 percent were completed their graduation.

This shows that only 75 percent of samples' mothers are literate. Most of them i.e. 37 percent have completed only basic education. And only 3% are taken higher education.

Monthly Family Income

Majority of the samples i.e. 59 percent belongs to an income group between Rs. 2000 to 5000 following that 24 percent of them had in 5001-10000 and 14 percent are in 10001- 15000 income group. However only 3% samples monthly family income is Rs.15000 and more.

Type of Family

Majority of the samples i.e. 59 percent belong to nuclear family whereas 41 percent were from joint family.

Age at the Menarche

Majority of girls i.e. 61 percent, ages at the time of menarche was in between 12 to 14 years. 26 percent were attained their menarche at the 14 to 16 years of their age. And 13 percent of the samples age at menarche was 10 to 12 years.

Interval between Two Cycles

47 percent of samples have 30 days interval between two cycles, 37 percent of samples have 28 days interval where as 15 percent of samples have 21 days interval in between two cycles, and only one sample have more than 35 days interval in between two cycles.

Duration of Menstrual Cycle

Majority of samples i.e. 52 percent were having their menstrual cycle 5 days. 43 percent were having their menstrual cycle 4 days whereas 3 percent of samples have less than 3 days duration of cycle and 2 percent have more than 7 days duration of menstrual cycle. This shows that majority of the girls having normal duration of menstrual cycle.

Section – II Deals with the analysis of the knowledge of the samples regarding various aspects of menstruation and menstrual hygiene practices.

6.1 Knowledge Scores With Regard To The Knowledge Regarding Menstruation

In relation to, "blood flow of menstruation through vagina", in the pre tests only 32 % of samples given correct answer whereas in post test 93% samples gave the correct answer. It indicates that in pre test only few samples were aware about menstrual blood flow from vagina. In post test the majority of the samples gained knowledge about menstrual blood flow through vagina. It indicates that the planned teaching is beneficial to increase the knowledge of the samples.

In relation to, "Amount of blood loss during menstruation," in pre test 79% of samples reported the amount of blood loss is moderate during menstruation whereas in post test scores are increase that is 96 % samples given the correct answer. It indicates that in pre test maximum samples were known the amount of blood loss during menstruation is moderate. This

knowledge was increased after administration of planned teaching.

In the pre test 77% samples gave the correct response that onset of menstruation in girls is the main change occur during puberty. In post test the scores are increased that 100 % gave correct response for the question. It indicates that the planned teaching is beneficial for increasing the knowledge.

It was found that 42% of the samples in the group gave the correct response that is uterus is the organ of female reproductive system whereas 92 % of samples in group gave the correct response in the post test which indicates that the method of education is almost good to increase the knowledge.

In pre test it was found only 37 % of samples know that menstruation is a physiological process where girl is capable of conception. And in post test 95% of samples gave correct answer. The above finding shows that the scores of posttest were higher than pre test which indicates that during planned teaching the samples clarified their doubts about the fact. Only 22% of samples gave correct response in pre test that the reason of menstruation is the hormones in the body. In post test 96 % of samples gave correct answer which indicates that there was change in the knowledge of samples and their scores in the post test.

In relation to, "Knowledge of premonitory symptoms during menstruation," in pre test 56% samples knows the back pain is as the premonitory symptom. 94 % knows that abdominal pain is the premonitory symptom. 41% know that fullness of breast is as premonitory symptom and only few i. e. 16 % of samples know that headache is as premonitory symptom. In post test 86% samples gave the answer that back pain is as premonitory symptom. 98% samples gave the answer that abdominal pain as premonitory symptom. 78% of samples gave the answer that fullness of breast as premonitory symptom. And only 21 % of samples gave the answer that headache as a premonitory symptom. This indicates that the post test scores were higher than the pre test score. It means that the samples from the group understood the content matter more clearly.

In relation to, "Knowledge related to iron rich diet is necessary for the adolescent period," in pretest 10% samples answers that iron rich diet is necessary to prevent iron deficiency anaemia, 21% of samples answer that iron rich diet is necessary because iron is lost during menstruation and only 15% of samples answer that iron rich diet is necessary because iron is essential element for growth. In post test 69% samples answered that iron rich diet is necessary to prevent iron deficiency anemia, 88 % of samples answered that it is lost during menstruation and 56 % of samples answered that iron is essential element for growth. The above findings show that planned teaching was more effective. This could be because the investigator was available for clarifying their doubts during planned teaching and help them to understand.

In respect of "the sources of iron," in pre test it was found that 55% of samples know that green leafy vegetables are the sources of iron, whereas 39% of samples answered that meat and fish are the sources of iron and only 35% of samples know that Gaggery is the source of iron. In post test

investigator noted that knowledge was increased and it was 96%, 87% and 81% simultaneously. The investigator noted that from the pre test score that most of the samples were unaware about sources of iron. The planned teaching helped them to increase the knowledge about sources of iron.

It is observed in pre test that 69% of samples gave the answer that it is proud that it gives femininity. And in post test it is found that 95 % of samples gave the correct answer. This changing score indicates that planned teaching is effective method of education.

6.2 Knowledge Score With Regard To Practices During Menstruation About Menstrual Hygiene

85 % of samples are using the homemade sanitary napkins and only few that is 15% of samples are using the readymade sanitary napkins. As majority of the samples are using the homemade sanitary cotton clothes there is a vast unmet need to teach the samples regarding practices during menstruation to prevent the health complications arises due to unhygienic practices.

6.3 Frequency of changing pads:

In pre test it was found that only 17% samples change their pads 6 hourly whereas 28 % of samples change their pads when and as needed. In post test it was found that 71 % samples understand that the sanitary pads should be changed 6 hourly whereas 50% of samples answered that the sanitary pads should be changed when and as needed. The findings show that the samples were become aware about the frequency of changing pads.

In relation to "Why the sanitary napkin be changed frequently," it is observed that in pre test 48% of samples know that it will stain cloths 41 % of samples know that it provides media to the organisms to grow and 31 % samples answered that it may spread infection. In post test it is observed that 85 % of samples gave the answer that it will stain the cloths, 94 % answered that it provides media to the organisms to grow whereas 70 % of the samples answered that it may spread infection.

In respect to, "Who cleans your sanitary napkins?" in pre test 97 % of samples gave the correct answer whereas in post test 100 % of the samples answered correctly. After planned teaching all the samples were understood that they should clean their own sanitary napkins.

In pre test it is observed that only 31 % of samples gave the correct answer that after use the napkins should be soak in cool water and then washed with soap and water and dry, whereas in post test 91 % of samples gave the correct answer. It indicates that increase in knowledge about taking care of sanitary napkins after use, increases the practices of samples more effectively after planned teaching.

Only 23 % of samples in pre test gave the correct answer that the napkins should dry outside in sunlight. In post test 95% of sample gave the correct answer. It is noted that after planned teaching majority of the samples understood that the used homemade cotton sanitary napkins should dry outside in sunlight.

It was found that in pre test 64 % of samples know that to dispose of the sanitary napkin it should be washed, dried and then wrap in paper and dispose in dustbin. In post test 89 % of the samples gave the correct answer. The findings indicate increase in the knowledge scores of the samples after planned teaching.

In pre test only 42 % of the samples gave the answer that to store the used napkins it should be fold, covered and keep in dry place. The remaining 58% answered that they store the used sanitary clothes in the hidden area. In post test 97 % of samples gave correct answer. The post test scores are grossly increased and it indicates that planned teaching is very useful to the samples to perform the correct practices. In pre test it is observed that 99% of samples taking regular bath during menstruation. In post test all 100% of the samples understand the importance of taking regular bath. 99% of the samples in the pre test answered that they are taking perineal care while bathing and in post test 100% of samples gave correct response.

It was found in pre test that 53% of the samples are washing the perineal region 6 hourly. In post test 92 % of the samples gave the correct response. In the pre test 62 % of samples answered that they are using soap and water while taking perineal care. In the post test 93 % of the samples gave the correct answer. It is observed that majority of the samples that is 100 % are having restriction that they do not enter in the holy places. 36% of the samples are not participating in the games, 29% of the samples do not touch or read the religious books. 10% of the samples use and keep utensils separately however 4% of the samples do not attend school during menstruation.

This indicates that majority of the samples in rural area follow the restriction that they do not entering the holy places during menstruation. Deals with analysis of the significant change in the knowledge of the samples and effect of planned teaching in relation to menstruation and menstrual hygiene practices. It is presented in comparison of the pre and post test score of group.

Results suggest that there was significant increase in the knowledge score after receiving the planned teaching. The findings of the section II of the questionnaire are,

$$|t_{cal}| = 33.22 > 1.66$$

Therefore we conclude that planned teaching helps to increase the knowledge regarding menstruation significantly. The findings of the section III of the questionnaire are,

$$|t_{cal}| = 21.63 > 1.66$$

Therefore we conclude that planned teaching helps to increase the knowledge about practices during menstruation significantly.

The findings of the overall test are,

$$|t_{cal}| = 38.69 > 1.66$$

Therefore we conclude that planned teaching helps to increase the overall knowledge of menstruation and menstrual hygiene practices significantly.

6.4 Co-relation between Demographic Variables and Knowledge Scores

6.4.1 Independence of age and score.

To compare the knowledge scores with the age of the samples calculated value of chi-square test statistic is 9.236

$\chi_{cal}^2 = 9.236$. From Chi-square tables, $\chi_{6,0.05}^2 = 12.59$

As $\chi_{cal}^2 = 9.236 < \chi_{6,0.05}^2 = 12.59$

Hence we conclude scores of the respondents are independent of age.

6.4.2 Independence of father's education and score.

Calculated value of chi-square test statistic is 17.49

$\chi_{cal}^2 = 17.49$. From Chi-square tables, $\chi_{9,0.05}^2 = 16.91$

As $\chi_{cal}^2 = 17.49 > \chi_{9,0.05}^2 = 16.91$,

Hence we conclude knowledge of the girls is independent of father's education.

6.4.3 Independence of mother's education and score.

Calculated value of chi-square test statistic is 10.42

$\chi_{cal}^2 = 10.42$. From Chi-square tables, $\chi_{9,0.05}^2 = 16.91$

As $\chi_{cal}^2 = 10.42 < \chi_{9,0.05}^2 = 16.91$,

Hence we conclude knowledge of the girls is independent of mother's education.

6.4.4 Independence of Monthly Family Income and score.

Calculated value of chi-square test statistic is 9.98

$\chi_{cal}^2 = 9.98$. From Chi-square tables, $\chi_{9,0.05}^2 = 16.91$

As $\chi_{cal}^2 = 9.98 < \chi_{9,0.05}^2 = 16.91$, Hence we conclude knowledge of the girls is independent of monthly family income.

7. Conclusions

During the study it was observed that, all the samples were very conscious and interested to learn, the selected aspects about menstruation and menstrual hygiene practices. The results of pre test of the study reveal that there is low level of knowledge about menstruation and menstrual hygiene practices. Surprisingly the investigator found that 85% of the samples are using cotton clothes as menstrual absorbent. Only 23% of samples in pre test answered about sun drying of the used and washed clothes. 58% of samples keep the used sanitary clothes in the hidden places and reuse of used clothes for more than one month.

100% samples do not enter in the holy places. Thus the samples were socially and culturally bounded with traditional practices during menstruation. In post test there is significant gain in knowledge is seen. The results indicated that equal positive response to the planned teaching was found really useful to them. The samples expressed that they were expecting more of such kind of information with pictures and planned teaching.

8. Scope of the Study

This study will help to assess the knowledge of the rural adolescent school girls about menstruation and menstrual hygiene practices. It will help to assess the effect of planned teaching programme on menstruation and menstrual hygiene practices on rural school girls. The study will help to educate the adolescent girls and they become conscious and confident about menstruation & menstrual hygiene practices, as it is the foundation for a more responsible and healthy reproductive life. The study will help to the adolescent girls to improve their self care ability and adopt positive health practices.

The study will help to rural adolescent girls to change their age old traditional attitude towards menstrual hygiene & make them to feel free to discuss menstrual matters without any inhibitions. The study will help to bring awareness in the school teachers, to promote a friendly school atmosphere for girls to practice hygienic measures. From the study results, the government of India will able to identify the need of universalized use of sanitary pads to every girl only by making it available at affordable prices. The study findings will provide opportunity to the public health nurse, the auxiliary nurse midwives, the school health nurses and all female health workers in rural and urban health centers, to give information and education to promote positive attitude about menstrual hygiene practices among adolescent girls. The findings of the study have several implications for the following fields such as nursing administration, nursing services, nursing education, general education, public education and nursing research.

8.1 Nursing Administration

- 1) The nurse administrator should encourage the nursing staff for the cost effective production of the "Adolescent Educational Material."
- 2) The administrator should motivate the nurse educators in planning and arranging the planned teaching programs for the adolescent girls.

8.2 Nursing Service

The nursing service department can have a sex education cell with the panel of adequately prepared nurses for developing and implementing adolescent educational programs for clients and families, mainly the mothers and the community at large. School health nurses who have easy access to schools have a great responsibility to bring these facts to the school teachers and authorities to organize a planned educational program for high school students.

8.3 Nursing Education

The nursing curriculum should include more content on the different aspects of human sexuality and sex education. Now a day's sex education has been given more emphasis even in general education.

8.4 General Education

There is a need to include sexual health in the teacher training program so that they are equipped with adequate knowledge to guide their students in the field.

8.5 Public Education

Carefully prepared adolescent educational programs as a part of mass education will be useful in creating awareness among the general public, instead of preparing advertisements only on sanitary products. Nurses are a vital source in educating the public through such programs and health education.

8.6 Nursing Research

Since nursing studies in this area are few, tool-technique can be used for research studies. It increases the body of knowledge and can be used as further reference material for students. Further the investigator may utilize the suggestions and recommendations for conducting further studies.

9. Ethical Aspect

The research committee and ethical committee was approved the research statement and objectives.

Prior to study the permission will be taken from the Block Educational Officer and all concerned authority of selected schools of selected district. The written consent will be taken from each and every respondent. Respondent will be informed about.

- 1) The purpose of study.
- 2) Their part in it.
- 3) No any discomfort except time consumption for solving questionnaire.
- 4) Their right to refuse to participate or to stop participating without penalty
- 5) The manner in which data will be used.

They will be promised to keep confidentiality about their answers. During study delimitation will be maintained. The data will be collected without disturbing routine work of the schools. The appropriate time will be provided to each and every respondent. Planned teaching was arranged with the permission of each school's authority. Teachers also permitted to attained planned teaching programme. Doubts will be clarified in time. They will be not criticized for their doubts and misperceptions.

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