A Quasi Experimental Study to Evaluate the Knowledge on Menstrual Hygiene by Structured Teaching Programme among Adolescent Girls (13-18 Years) in a Selected School at Sagar

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Abstract: *Introduction: Based on the findings of the study, the investigator proposes the following recommendations for future research: 1) The study can be replicated on larger samples in different settings to have a wider applicability by generalization.2) A similar study can be done with a true experimental approach on knowledge of adolescent girls regarding menstrual hygiene. 3) An experimental study can be done by implementing the structured teaching programme to adolescent girls. 4) Similar study can be carried out by using different teaching strategies. 5) A follow up study can be conducted to evaluate the effectiveness of structured teaching programme regarding menstrual hygiene on adolescent girls. 6) A study can be conducted on adolescent girls to access the knowledge towards and motivate adolescent girls to adhere to the correct practices of adolescent girls. 7) A study can be conducted to develop and evaluate a structured teaching programme in the form of pictorial booklet for illiterate group. 8) The effectiveness of information booklet on menstrual hygiene among adolescent girls of various schools can be carried out.*

Keywords: Assess, complications of alcoholism, adolescents, school

1. Introduction

Made observation and reported, "The subject of menstruation does not permit itself to be widely or thoroughly studied in the traditional Indian setting, where the mere mention of the word menstruation can cause embarrassment." She adds that even students from an urban background showed an apparent lack of knowledge about menstruation, and many even would not admit that they have attained the menarche. It was only on repeated questioning and after much probing that they reluctantly admitted the fact.. Reported, "It was shocking to know that girls even from well known urban schools were poorly informed regarding menstruation and maintenance of menstrual hygiene." She adds that there is still a social barrier in hearing or talking about menstruation. Some adolescent school girls were not in favor of having health education in their schools because they felt ashamed to discuss the matter in front of others.

The finding of the study conducted by Rakesh Kumar (1988) also revealed that even parents, especially the mothers, do not educate their daughters about the various aspects of menstruation like age and its onset, occurrence of various changes, its duration, maintenance of hygiene during this period. They do not motivate their daughters to take the event lightly. Hence, the lack of knowledge, misconception and wrong ideas lead to undue fear, anxiety and undesirable attitudes in the minds of adolescent school girls.

A meaningful explanation of psychosocial changes that take place during puberty would counteract the needless suffering of thousands of girls who grow up in an environment of ignorance and superstitions. Muscles can help young adolescents to understand the normal physical and psychosexual changes taking place during puberty, so that they may learn to see it as a positive change. Menstrual cycles are often irregular through adolescence, particularly the interval from the first to the second cycle. According to the World Health Organization's international and multicenter study of 3073 girls, the median length of the first cycle after menarche was 34 days, with 38% of cycle lengths exceeding 40 days. Variability was wide: 10% of females had more than 60 days between their first and second menses, and 7% had a first cycle length of 20 days. Most females bleed for 2 to 7 days during their first menses.

Early menstrual life is characterized by an ovulatory cycles, but the frequency of ovulation is related to both time since menarche and age at menarche. Early menarche is associated with early onset of ovulatory cycles. When the age at menarche is younger than 12 years, 50% of cycles are ovulatory in the first gynaecologic year (year after menarche).

By contrast, it may take 8 to 12 years after menarche until females with later-onset menarche are fully ovulatory. Despite variability, most normal cycles range from 21 to 45 days, even in the first gynaecologic year, although short cycles of fewer than 20 days and long cycles of more than 45 days may occur. Long cycles most often occur in the first 3 years post menarche, the overall trend is towards shorter and more regular cycles with increasing age. By the third year after menarche, 60% to 80% of menstrual cycles are 21 to 34 days long, as is typical of adults. An individual's normal cycle length is established around the sixth gynecologic year, at a chronological age of approximately 19 or 20 years.

Two large studies, one cataloging 275947 cycles in 2702 females and another reporting on 31645 cycles in 656

females, support the observation that menstrual cycles in girls and adolescents typically range from 21 to approximately 45 days, even in the first gynaecologic year. In the first gynaecologic year, the fifth percentile for cycle length is 23 days and the 95th percentile is 90 days. By the fourth gynaecologic year, fewer females are having cycles that exceed 45 days, but ovulation is still significant for some, with the 95th percentile for cycle length at 50 days. By the seventh gynaecologic year, cycles are shorter and less varying, with the fifth percentile for cycle length at 27 days and the 95th percentile at only 38 days. Thus, during the early years after menarche, cycles may be somewhat long because of ovulation, but 90% of cycles will be within the range of 21 to 45 days.

Problem Statement

"A study to assess the effectiveness of structured teaching programme on knowledge regarding complications of alcoholism among adolescents in selected schools of the city" "A Quasi Experimental Study To Evaluate The Knowledge On Menstrual Hygiene By Structured Teaching Programme Among Adolescent Girls (13-18 years) In A Selected School At Sagar."

Objectives

Objective and Hypotheses is done to bridge the give between the more abstractedly stated research problem and study design, it help to organized the story clearly in a defined part and phases. Objectives are used to direct the development and implementation of the study and in the interpretation of the finding
1) To assess the level of knowledge of adolescent girls before the administration of a structured teaching programme regarding menstrual hygiene.
2) To evaluate the effectiveness of structured teaching programme regarding menstrual hygiene among adolescent girls.
3) To find out the association between knowledge on menstrual hygiene with selected demographic variable

Hypothesis:

H1: There is a significant change in knowledge regarding menstrual hygiene among adolescent girls after the administration of structured teaching programme.
H2: There is a significant association structured teaching programme regarding menstrual hygiene with selected demographic variables.

2. Methodology

1) Research Approach: Quantitative approach
2) Research Design: The research design is one group pre-test post-test design.
3) Setting of the study: This study was conducted on adolescents girls in a selected schools of the city.
4) Sample: 60 Adolescents girls

2.1 Introduction

Children constitute a vital segment of our population (42%). The population of school age children and youth has grown enormously in recent decades. The census data, as per health information India (1991) show that the population of

adolescents was 22.5% in 1981. As a result, there is an increase of adolescent children attending school in the country. It is there for, imperative to facilitate the healthy development of adolescent.

Studies done abroad and in India by Ruble (1982), Abraham et. Al. (1985) Jones (1987), Rakesh Kumar (1988), Anjali (1992) show adolescents, lack of knowledge regarding menstruation and menstrual hygiene because there is no guidance for the onset of this event and its menstruation further, they recommend a planned education programme to prepare young adolescent girls for healthful practices on attaining menarche.

Ruble and Joanne (1982), Studies in North American menarche experienced by 639 public school girls findings show that well Informed 90% girls expressed considerably more positive feelings and less surprise about menstruation than the girls who were not informed. The adolescent girls who were not informed repeated greater frequency and severity of symptoms than the well informed adolescent girls.

James (1992) also made a similar observation in Dubai and started that prepared 350 girls used Hygiene Napkins, frequency changed the pad hygienically, were less superstitious and had less problems related to menstruation than the unprepared girls. This indicates that education and information in these areas would help 84% adolescent girls to learn to cope with the problem of menstruation better. A wide variety of teaching strategies have been tested and found useful in educating sick or healthy clients/individual. According to Red man (1980), teaching includes promotion of health, preventions of disease or complications, early diagnosis, treatment and rehabilitations. It aims at modifications of inadequate behavior and life style for the preventions of a health teaching of self-instructions module are some of the methods used in health teaching Redman (1980), on patients teaching, started that group teaching may be time-saving and serve as an educative experience apart from the content of the class.

Literature review gives evidence of a structured teaching programme, planned and conducted by nurses, being effective in educating clients using individual, group teaching and self Instructional material.

Nurses are resourceful persons to disseminate information on health matters in order to help clients. Finding of the studies conducted by Chattopadhya (1983). Bashir (1986), Shaik, S.A.N. (1991) and Abrol (1993) in the field of Cancer Nursing, Midwifery, Surgical and Cardiac Nursing respectively revealed that the planned teaching programme was found to be effective in terms of the client's knowledge and practices.

Literature reviewed by the investigation shows that there are few studies done in India and abroad to assess the knowledge, practice and attitude of girls regarding menstruation and menstrual hygiene No study could be located regarding evaluation of the effects of STP about menstruation in India. Hence, the researcher felt the need to develop and administer the STP and evaluate its

effectiveness. This would enable adolescent girls to acquire knowledge, practices and a positive attitude towards menstruation and menstrual hygiene as they are future healthy prospective mothers.

2.2 Need for the Study

James, A. (1979) conducted a study on knowledge and practices of adolescent school girls of Punjab regarding menstrual hygiene. The study sample consisted of 150 girls from class 11th and 12th of two schools, one private (convent) and the other under the central government. A semistructured questionnaire was used for date collection.

Results showed that the maximum number of girls (59-79%) who attended the convent school had their menarche at the age of 13-18 yrs and 40.21% at the age of 15-16 yrs. This pattern slightly differs from girls in the central school, where the maximum number (54.17%) had their menarche at the age of 15-16 yrs and 45.83% at the age of 13-14 yrs, respectively.

Finding of the study revealed that the commonest problem the girls faced was pain in abdomen (86out of 150) followed by backache, tension and constipation. For pain in the abdomen and backache the commonest, remedy was self medication (39 out of 86 girls/ie) taking pain killers like paracetamol, 56% girls had a self – imposed restriction such as stop playing, doing exercises, 19.33% do not take daily bath and 14.66% do not wash hair during subsequent menstrual periods.

Methillin. (1981). Studied to compare a traditional 28-day cycle to an extended 49-day cycle of the 30 μg ethinyl estradiol (E2)/300 μg norgestrel monophasic birth control pill regimen. Ninety subjects randomized to either 28-day cycles with 21 active pills or 49-day cycles with 42 active pills for a prospective open label trial over for 84-day reference periods or trimesters. Bleeding, pill taking, and symptom diaries were completed. The sample size with 80% power to detect a 40% reduction in bleeding days required 24 subjects in each arm. The 90 women, 24 subjects (54.5%) on the 28-day cycle and 29 (63%) on the 49-day cycle completed the entire study (P = .41). There were no statistically significant differences between the two groups in demographics or continuation rates. There was a significant reduction in bleeding days in the experimental arm beginning in the first trimester (28-day = 10.9, 49-day = 6.4 mean days of bleeding, P < .001) and continuing to the fourth trimester (28-day = 11.3, 49-day = 5.8 mean days, P = .005). The number of spotting days was similar between both schedules in the first trimester (28-day = 4.8, 49-day = 3.7 mean days, P = .24) and continued into the fourth trimester (28-day = 3.4, 49-day = 2.9 mean days, P = .30). Annual expenditure for hygiene products was significantly less for extended use subjects (28-day = 41.45, 49-day = 17.54 spent, P < .001). Extension of the 28-day oral contraceptive (OC) cycle to a 49-day cycle resulted in fewer bleeding days and no increase in mean spotting days or bleeding episodes.

Johnson. (1981), Studied the level of knowledge among adolescent school girls in Thailand regarding effective treatment for dysmenorrhoea. A multiple choice questionnaire was administered to 182 school girls, aged 14-18 yrs, to assess the prevalence of dysmenorrhoea, the morbidity associated with dysmenorrhoea and the level of knowledge regarding available treatment of the study group, 72.7% reported " pain or discomfort" during their period, 58.9% reported school absenteeism of the dysmenorrhoea sample, only 15.5% had used a prescription medication and only 14.7% could name aspirin as potentially effective in relieving dysmenorrhoea. The prevalence of school absenteeism provides evidence for the continuing importance of dysmenorrhoea as a public health problem of this age group.

Micheal Osjih (1983), undertook a study on menstrual problems faced by Nigerian students and their sex education. In all, 420 female students from 20 secondary schools, 10 urban and 10 rural, were studied. A questionnaire was used to collect data.
Results showed that the highest number of girls 106 (50.48%), who attend schools in urban areas, had their menarche at the age range of 11-12. The lowest no, 7(3.3%) did not experience menarche, until they attained the age bracket of 15-16 yrs. This pattern slightly differs from girls in the rural areas where the highest number 118 (56.30%) had their menstrual cycle first at the age of 11 and 12 yrs respectively. Six major menstrual disorders such as pre-menstrual syndrome 108 (43.90%), prolonged menstrual flow 36 (1416%), irregular cycle 12 (3%) and vaginal itching 56 (22.8%) were encountered.

Abraham S. et al (1985), Studied menstrual cycle problem among. 1,367 young Australian women aged 14-19 yrs. Results showed that 54% of women who had experienced menarche complained of irritability. 40% abdominal bloating as a pre-menstrual symptoms. As many as 40 different pre-menstrual symptoms, both mood-related and physical, were related. The most commonly reported symptoms were cramps (23%), fatigue (20%) and irritability (20%).

Rabel and Jeanne (1986). studied the experience of menarche on 639 public schools girls in Newzealand. The objective of the study was to find out how do girls character their experience of menarche? They used a questionnaire and interview schedule to collect the data.

The girls reported the following physical discomforts and limitations. Pain or cramps during their first period (40%), moodiness, fatigue before or during their periods (22%), some activities were impaired during the periods like athletics, school work and chores (17%), received special treatment eg. they were asked to do less work (13%), using their periods as an excuse (9%).

3. Review of Literature

1) Related To Knowledge Of Adolescent Girls Towards Menstruation And Menstrual Hygiene

Menstruation has historically been regarded as a negative experience. Yet, not all the research findings in literature are wholly positive. Literature review gives evidence of the fact

that lack of knowledge about menstruation and menstrual hygiene exists in varying degrees among women.

James, A. (1979). Conducted a study to assess knowledge of adolescent school girls of Punjab regarding menstrual hygiene and it's relation with selected factors. A descriptive co-relational survey was used for the study. A sample of 150 school girls from class 9th and class 10th was selected by sampling techniques. These samples consisted of 102 girls from the convent school and 48 from the central government school. A semi structured questionnaire was used for collecting data.

The findings of the study revealed, (1) 35% adolescent school girls lacked knowledge specially in the menstrual hygiene areas. (2) private school girls had higher knowledge than those of the government school; (3) restrictions imposed on girls during periods were taking cold drinks, playing, taking exercise and worshipping; (4)50% Majority of the girls were not having hygiene practices with regard to the type of protection during periods. (5) frequency of changing pads and methods used for disposing them of were neither hygienic nor aesthetic; (6) 45% majority of the girls lacked sufficient information and they wanted to have a frank discussion on this topic; (7) girls from the upper socio economic status and with a higher level of mother's education had more knowledge and hygiene practices than the others. The study suggested that there should be a formal health education programme in schools on sexual health and menstrual hygiene.

Das Leenardis Kharbgnyer. (1980). conducted a study to ascertain the knowledge of sexual health in senior school girls of the North East Region. The sample consisted of 100 adolescent school girls and used a structured questionnaire to collect date. Investigator found that the lowest mean 25% percentage obtained was in the areas of the reproductive systems.

Investigator says that government school girls were having slightly higher knowledge in the reproductive system areas. Girls from the higher socio-economic states had better knowledge 64% in the areas of the woman's reproductive system than those in the lower socio-economic status.

El-shazly. M.K. et al (1980). Carry out a study to examine the nursing students' knowledge related to menstruation. The sample subjects were all secondary school nursing students enrolled in the Main University Hospital of Alexandria during the scholastic yrs 1987-1988. The finding showed that over 85% of the students were acquainted with the age of menarche, length of the menstrual cycle, and duration of menstrual bleeding only 71.54% gave correct answers about age of menstrual cessation. About two-3rd of the students stated that they daily used 3-8 sanitary pads. The finding also indicated that first year students significantly used lesser number of pads than those in higher grades. Menstrual pain and fear of bleeding were the causes of absenteeism from school among 37.62% of the sample.

Rierdan and llisa. (1984). Conducted a study in New Zealand on pre-menarcheal predictors of the experience of menarche and the sample is of 92 girls. The goals of this study were:-
a) To assess with a prospective design, the impact of pre-menarcheal menstrual attitudes and personality attributes for menarcheal experience
b) To assess the relative strength of these variables in relation to menarcheal timing and preparation for menarche for predicting menarcheal experience. The subjects were 92 girls in grades 6-9. They changed from pre to post menarcheal attitude between two test occasions, six months apart.

When pre-menarcheal menstrual attitudes and personality attributes were examined independently, results said that menstrual attitudes and depression significantly predicted an emotional response to menarche. When these two variables were examined, together with preparation and timing variables, the two significant predictors of menarche experience were preparation and formation. The results provided direction for and optimism about the potential efficacy of menstrual education in promoting more positive menarcheal experience.

Aminath, J. et al (1988). Carried out a descriptive cooperative study in Jaipur on the knowledge, perception and goals of 200 mothers of adolescent girls who belonged to both Hindu and Muslim families. The study related to marriage and family life in rural and urban areas of North Arcot district. A structured interview schedule was used to collect the date.

The investigator found that 82% of Hindu and 90% of Muslim mothers in the urban area had more information on menarche prior to the experience, the remaining 18% Hindu and 10% Muslim mothers in the same areas had some information. In the rural areas also 94% Hindu and 96% Muslim mothers did not have instructions prior to the onset.

The instructions they received were; how to make and apply napkin, daily bath and be clean, not to go out alone after attaining menarche. Hundred percent of Hindu and 84% of Muslim mothers knew that the frequency of normal menstruation was once a month. Of the 200 mothers, 21 felt that adolescent girls need to be instructed on marriage and family life prior to marriage. All of them thought that they themselves were not adequately prepared for giving any guidance and information to their daughters and felt the need to have some instructions themselves on this aspect.

Kumar Rakesh. et al (1988). Conducted a study in Dayalpura on knowledge, attitude and practice of high school girls regarding menstruation in the rural areas. The study sample consisted of 65 unmarried school girls studying in class 10th and in the age group of 13-16 yrs. Setting was Dayalpura center, 60 km away from New Delhi. An interview schedule was used to collect the data.

Results indicated that for protection against the menstrual flow, the following precautions were taken; cotton cloth (56.9%); cotton (3-1%); 40% did not specify the material. Regarding advice, 41.5% were guided by friends, 108% by mothers and 16.9% took self-initiative. As many as 70.8% of yrs used clean material, 9.2 percent unclean material and one

girl used both clean and unclean whichever was easily available.

Certain activities were restricted during menstruation--- taking bath (46%); entering into the kitchen (78.4%); abstaining from play (83%).

Michael Osujsh. (1989), studied the menstruation problem of Nigerian students and sex education. A sample of 420 female students aged 12-17yrs was selected from 20 secondary schools, ten urban and ten rural.

The study identified outstanding low personal hygiene among the students. As many as 298 (70.52%) out of the 420 students admitted that they were ignorant of regularly changing whatever material they used for protection.

Study suggested that sex education and management of menstruation should be made an integral part of the school curriculum at all levels of the educational system. It is also suggested that the media, radio, television and the press should be mobilized for mass enlightenment on the management of menstruation.

Abraham S. et al (1990). conducted a study in Australia to determine the knowledge attitudes and practices with regard to menstruation. The sample consisted of 1,367 young Australian women aged 14-19 yrs from a community. An open-ended questionnaire and check lists were used for data collection. None of the 1,367 women was married. A total of 1,336 (97%) were post-menstrual and the rest 31 (3%) had menstruated in the two months before completing the questionnaire.

The study revealed that young women lacked sufficient information on the time of ovulation and menstrual discharge. A high proportion (80%) of them considered menstruation to be inconvenient or embarrassing. There were a few misconceptions and myths. For instance, about 2.1% thought that menstruation rids the body of wastes, 37% of all young women would avoid the cold. 28% said, "Avoid hot baths during menstruation as this might clot the blood."

About 65% of them were using pads and the rest tampons. Ninety% of tampons users said they would not leave a tampon in the vagina for more than 12 hrs, 30% of young women had problems in inserting tampons due to lack of knowledge of their genital anatomy and discomfort from incorrect insertions.

The study suggested that information on the events of the menstrual cycle is a necessary component of a personal development course in the school curriculum.

Limitation:
- Study is limited to adolescents girls in a selected schools of the city.
- Sample size is only 60.

Hypothesis
H1: There is a significant change in knowledge regarding menstrual hygiene among adolescent girls after the administration of structured teaching programme.

H2: There is a significant association structured teaching programme regarding menstrual hygiene with selected demographic variables.

4. Methodology

Research Approach
According to POLIT and HUNGLER (1999) research design is an investigator's over all plans for obtaining answer to research questions. The selection of research of research design is the most important step as it provides the framework for the study. The research helps the researcher in selection of the subject's manipulation of independent variables control collection of data and type of statistical analysis to be used to interpret the data.

Research approach is the overall plan to carry out the research. It indicates for the conducting the study.

According to Patricia Ann Dempsey and Arthur D. Dempsey, the quasi experimental research approach raises questions based on the need to manipulate specific conditions in a controlled or laboratory like setting in order to investigate the effects of different conditions.

Since the present study aims in investigating the effectiveness of structured teaching programme to alleviate the post test knowledge among adolescent girls 13-18 years in Government Girls Senior Secondary School Sehora Sagar M.P..

Research Design
Kerlinger states that research design is the plan, structure and strategy of investigation conceived so as to obtain answer to research questions. Research designs enable the researcher to answer to answer research questions as validity, objectivity, accurately and economically as possible.

According to Burns N, Groove S. K. A. research design is a blue print for the conduct of the study that maximizes control over factors that could interfere with the study's outcome.

In the research process the research design can be considered as the backbone of the study. The research design helps the researcher in selection of subjects for observation and determining the type of analysis to be used to interpret the data. The selection of research design depends upon the purpose of study and the condition under which the study is conducted.

The research design for this study was one group pretest, post–test design pre-experimental design .

O1 x O2 :- The knowledge before and after the intervention of the flash card

X: The intervention of flash cards .

THE SCHEMATIC DESIGN OF THE STUDY
Group Before Treatment After
Interventional
Group O1 X O2

The research design notation of one group pretest post test is as follows :-
O1 X O2

Keys:
O1: Pre-Test Group
O2: Post Test Group
X: Experimental Treatment

Interventional group: pretest – experimental treatment – posttest

Variables of the Study: Variables is "as the name implies something that varies –weight, height, body temperature all are variables

Independent Variables: The independent variable is the condition or characteristics manipulated by the researcher. In this the independent variable was the structured teaching programme on the adolescent girls.

Dependent Variables: The dependent variable is the condition or characteristics as a result of independent variables. In this study the dependent variables were the score of knowledge test.

Population of the Study: A total category of persons or object that meets the criteria for study established by the researcher any set of persons, objects or measurements having an observable characteristics in common. The study population comprised of adolescent girls who is having a start menstruation in selected Government Girls Senior Secondary School Sehora Sagar M.P.

Target Population: POLIT & BECK states that the Target population is the population in which the researcher is interested and to which he or she would like to generalize the result of the study. In the present study the target population is all adolescent girls with menstruation in selected Government Girls Senior Secondary School Sagar (M.P)

Accessible Population:
Accessible population refers to the portion of target population which the researcher has a reasonable access. In this study the accessible population is the adolescent girls with menstruation in selected Government Girls Senior Secondary School.

Sample & Sample Technique: Sampling technique is a method or process devised for obtaining a sample which will be a representative of its population. The investigator has used a non-probability convenient sampling technique.

Sample Size: According to H. Janet A sample is a carefully selected subset of the population that represents the composition of that population. A total 60 adolescent girls with menstruation in a selected School was taken for my study.

Criteria for selection of Sample
Inclusion: Adolescent girls who are willing to participate in this study.
Exclusion: Who are unwilling for the study

Tool Preparation:

Selection and Development of Tool: The tool was developed for the structured questionnaire. It was constructed after an extensive review of literature, discussion with the experts and investigators personal experience.
The following steps were carried out in preparing the tools:
- Review of literature: It was done from books, Journals, published and unpublished research studies.
- Development of structured questionnaire to assess the knowledge through the Multiple question and checklist to assess the demographic variables of adolescent girls.
- Expert's opinion from department of Obstetrics and Gynaecology.

Description of the Tool
The tool was developed for the interview schedule. It was constructed after an extensive review of literature, discussion with the experts and investigator's personal experience.

The tool consists of two sections.
- Structured interview schedule to collect the demographic variables of adolescent girls.
- Questionnaire to Assess the knowledge of the adolescent girls.

Section I: Description of structured interview schedule
A. Demographic characteristics of adolescent girls.
It consists of the demographic variables such as age of the adolescent girls (Age, Socioeconomic, type of family, dietary pattern, type of area, educational status)

Section II A: Questionnaire:--Objective type of 10 questions on various aspects of menstruation and it maintain of hygiene is formulated to assess the knowledge of adolescent girls with menstrual hygiene.

There are 40 questions in total and includes aspects like, definition, process, signs and symptoms, menstrual disorders, menstrual hygiene, health education and diet.

Scoring procedure
In Section II A: For each correct answer score of 1 is given and for wrong answers score of 0 is given, Analysis is done by using descriptive an inferential statistics

To interpret the level of knowledge, the scores were distributed as:-

S no.	Grade	Percentage	Marks
1	Poor Knowledge	0- 33%	0-13
2	Average Knowledge	33%- 67.%	14-27
3	Adequate Knowledge	67%- 100 %	28-30

Description of structured teaching programme :-
1) Definition of menstruation it include 3 question .
2) Menstrual hygiene it includes 3 question.
3) Process it include 10 question
4) Sign and symptoms it includes 8 question.
5) Menstrual disorder it includes 6 question
6) Health education it includes 5 questions.

7) Diet it include 5 question.

Validation of the structured interview schedule

Validity of the structured interview schedule was established by submitting the tool to 7 experts in the field of Obstetrical & Gynaecology Nursing for their opinion & suggestion regarding adequacy & relevance of the contents. Some of the additions & re-organization/reformation of the content in the interview schedule as suggested by the experts were incorporated .

Transation of structured interview schedule

The Structured Interview Schedule was prepared in English and then translates in Hindi to facilitate easy understanding by the every adolescent girls. It was validated by language experts .

Pilot study

After obtaining permission from the Ojaswani Nursing College Sagar M.P. Madhya Predesh and the administrative approval a Pilot study was conducted in Government Girls Senior Secondary School Sehora Sagar M.P from Feb 2017.

The purpose of the Pilot study was to assess the reliability of the tool and feasibility of the study and to decide the plan for statistical analysis. The analysis of the Pilot study is done in accordance with objective.

The total sample was 10 adolescent girls were selected by non-probability purposive sampling and self structured questionnaire and multiple choice question regarding menstrual hygiene on adolescent girls. The time taken for completing the questions was about 1 hours. The subjects gave a positive response to answer to the tool without any difficulty on the 1st day pre-test and teaching was given by flash cards to adolescent girls and 7th day post-test was done. **RELIABILITY** After establishing the validity of the tool to be used for the study, the final tool was made then the reliability of the tool was tested.

The reliability was tested in order to establish the reliability of the tool it was administered to 10 adolescent girls from Government Higher Secondary School Bhilai-3 Madhya Pradesh. Reliability of the tool was calculated by spilt half technique & was calculated by using Spearmen Brown Prophecy formula & the reliability was found to be r= 0.53, r = 0.72.

Validity

Validity is the most critical criterion and indicates the degree to which an instrument measures what it is supposed to measure. 2 To obtain content validity of the tool, the prepared tool with synopsis, Evaluator's response sheet and content validity certificate was submitted to 20 experts in the field and 16 were received back after evaluation. Experts were chosen on the basis of their teaching and clinical experience and interest in the problem area. The experts include 13 from psychiatry (mental health) nursing specialty, 1 physician from psychiatry departments,1 expert from Research and Medical education unit, 1 expert from Statistics department. 16 validated content of the tools were received from the above listed experts with their valuable suggestions and comments. Experts gave their opinion on

the clarity and appropriateness of the tool. They agreed completely except some minor changes in Questionnaire on demographic data and self questionnaire on Knowledge regarding complications of alcoholism. Necessary corrections were made considering all suggestions given by the experts after discussing with the guide.

Data Collection Method

According to POLIT & HUNGER (1999) .The most respected method of securing information through personal interview, the method in which interviewers meet with individual face – to- face & secure information from them interview technique is also useful as :-
1) Give opportunity to assess their knowledge.
2) Helps to clarify misinterpretation of question.
3) Individualistic, no biases the study aimed at assessing the knowledge & prevention of diarrhea disease in infant. The interview method was found to be the most appropriate feasible & convenient method for getting a complete natural response from the adolescent girls.

Tool developed for Data Collection

Structured interview schedule on menstrual hygiene of adolescent girls.

Data Collection Procedure

A prior permission was obtained from the Principal Prof. Mrs J. Sobia Gnana Mary to assess the knowledge of adolescent girls with menstruation in Government Girls Senior Secondary School Sehora Sagar M.P. The investigator started the data collection for the main study from the respective school. The study commenced from 01.01.2017 to 10.05.2017, 60 samples 11th and 12th class of adolescent girls with menstrual cycle.

A survey was conducted to identify the adolescent girls (adolescent girls with menstrual cycle) who met the sampling criteria, were selected conveniently for study and assessed the knowledge of adolescent girls.

The investigator introduced herself and the verbal consent from adolescent girls was obtained. The purpose of the interview and need of questionnaire was explained and they were reassured about the confidentiality of the interview.

The structured interview questioning schedule was carried out on one to one basis for 5 to 10 minutes. y using questionnaire each adolescent girls with menstrual cycle of knowledge were assessed for 30 - 45 minutes.

Plan for data analysis

Data analysis is the systematic organization of research data and the testing of research hypothesis using that data.
- The data obtained was analyzed by both descriptive and inferential statistics, on the basis of objectives and hypothesis of the study.
- Organize data in a master sheet or computer .
- Demographic data was analyzed in terms of frequencies and percentages.
- Mean and standard deviation were computed to assess the knowledge of adolescent girls on various aspects of knoeledge of menstrual cycle and its menstrual hygiene.

- t- test for effectiveness & Chi-square test (χ2 test) was used to find out the association between selected demographic variables & knowledge and adolescent girls with menstruation.

Ethical Considerations

The research problem & objectives were approved in research committee explanation was given regarding the purpose of the study. Confidentiality was ensured. The individual participants had the right to walk away without assigning any reason to the investigator.

5. Results

Organization of Findings

The data gathered was tabulated, analyzed and interpreted using both descriptive and inferential statistics. Based on the objectives the collected data was presented under the following heading.

Section A: Distribution of subject according to socio demographic variables in frequency and percentage.

Section B: Data analysis related to pretest level of knowledge of adolescent girls regarding menstrual hygiene by structured teaching programme.

Section C: t-test to evaluate the effectiveness of structured teaching programme on knowledge related to menstrual hygiene of adolescent girls.

Section D: Association between selected socio demographic variable with pretest knowledge score of adolescent girls regarding menstrual hygiene using chi-square test and frequency.

Section I Distribution of Adolescents with regards to Demographic Variables.

Distribution of the subjects according to socio-demographics variable

Distribution of subjects according to age

Age (years)	Frequency (F)	Percentage (%)
12 - 13	17	28.3%
13 – 15	22	36.7%
15 – 18	18	30.0%
19 – 20	3	5.0%

Section II Data analysis related to pre-test level of knowledge of adolescent girls regarding menstrual hygiene by structured teaching programme.

Overall Pretest Knowledge Score

Overall knowledge	No. of questions	Min – Max score	Mean ± SD	% of knowledge
	40	0 – 40	18.12 ± 1.87	45.3%

Table 4.7; shows, adolescent girls, overall percentage of knowledge on menstrual hygiene. They are having only 45.3 percent of knowledge on menstrual hygiene.

Pretest Level of Knowledge

Level of knowledge	No. of adolescent girls	%
Poor knowledge	17	28.3%
Average knowledge	43	71.7%
Adequate knowledge	0	0.0%
Total	60	100%

Assessment of post test knowledge regarding complications of alcoholism among adolescents in selected schools of the city
t-test to evaluate the effectiveness of structured teaching programme on knowledge related to menstrual hygiene of adolescent girls.

Comparison of Overall Knowledge Score before and after structured teaching programme

Overall Knowledge Score	No. of adolescent girls	Pretest Mean±SD	Posttest Mean±SD	Student 'S paired t-test
	60	18.12 ± 1.87	33.67 ± 3.47	t=40.99 P=0.001*** DF= 59, significant

Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 4.11; Shows the comparison of overall knowledge before and after the administration STP. On an average, adolescent girls improved their knowledge from 18.12 to 33.67 after the administration of STP.

Section D

Association between pretest level of knowledge and their demographic variables

		Pretest level of knowledge				N	Pearson Chi square test /Yates corrected chi square test
		Poor		Average			
		N	%	n	%		
Age	12 -13 yrs	4	23.5%	13	76.5%	17	χ2=0.32 P=0.85 2 df, not significant
	13 -15 yrs	7	31.8%	15	68.2%	22	
	15 -18 yrs	6	28.6%	15	71.4%	21	
Socio Economic Status	Low class	10	32.3%	21	67.7%	31	χ2=1.33 P=0.51 2 df, not significant
	Middle class	3	17.6%	14	82.4%	17	
	High class	4	33.3%	8	66.7%	12	
Type of family	Joint family	5	26.3%	14	73.7%	19	χ2=0.11 P=0.95

	Nuclear family	7	28.0%	18	72.0%	25	2 df, not significant
	Extended family	5	31.3%	11	68.8%	16	
Dietary pattern	Vegetarian	8	26.7%	22	73.3%	30	χ2=0.08 P=0.77
	Not vegetarian	9	30.0%	21	70.0%	30	1 df, not significant
Type of area	Urban	6	19.4%	25	80.6%	31	χ2=2.54 P=0.11
	Rural	11	37.9%	18	62.1%	29	1 df, not significant
Class	11th std	5	16.7%	25	83.3%	30	χ2=2.95 P=0.09
	12th std	12	40.0%	18	60.0%	30	1 df, not significant

Table 4.14; Shows the association between demographic variables and their pretest level of knowledge None of the demographic variables are significantly associated with their pre test level of knowledge . Association between demographic variables and their pretest level of knowledge was analyzed using pearson chi-square test/Yates corrected chi square test.

Association between posttest level of knowledge and their demographic variables

		Post test level of knowledge				n	Pearson Chi square test /Yates corrected chi square test
		Average		Adequate			
		n	%	n	%		
Age	12 -13 yrs	6	35.2%	11	64.8%	17	χ2=7.82 P=0.02** 2 df, significant
	13 -15 yrs	2	9.1%	20	91.9%	22	
	15 -18 yrs	1	4.8%	20	95.2%	21	
Socio Economic Status	Low class	5	16.1%	26	83.9%	31	χ2=0.19 P=0.90 2 df, not significant
	Middle class	2	11.7%	15	88.3%	17	
	High class	2	16.7%	10	83.3%	12	
Type of family	Joint family	2	10.5%	17	89.5%	19	χ2=0.86 P=0.65 2 df, not significant
	Nuclear family	5	20.0%	20	80.0%	25	
	Extended family	2	12.5%	14	87.5%	16	
Dietary pattern	Vegetarian	4	13.3%	26	86.7%	30	χ2=0.13 P=0.71 1 df, not significant
	Not vegetarian	5	16.7%	25	83.3%	30	
Type of area	Urban	1	3.2%	30	96.8%	31	χ2=6.97 P=0.008** 1 df, significant
	Rural	8	27.6%	21	72.8%	29	
Class	11th std	5	16.7%	25	83.3%	30	χ2=8.64 P=0.005** 1 df, significant
	12th std	4	13.3%	26	86.7%	30	

Table 4.15; (Figure 4.14, 4.15, 4.16) Shows the association between demographic variables and their posttest level of knowledge.

Age , type of area, class are significantly associated with their post test level of knowledge

6. Conclusion

The following conclusions were drawn on the basis of the findings of the study-

Demographic characteristics of adolescent girls regarding menstrual hygiene 1)Majority of adolescent girls 22 (36.7%) were in the age group of 13-15 years.2)Majority of adolescent girls in low class from socio-economic status their percentage are 31 (51.7%).3)Majority of adolescent girls nuclear family 25 (41.7%) were from type of family.4)Majority of dietary pattern in the adolescent girls 30 (50%) that belong to non-vegetarian and vegetarian.5)Majority of adolescent girls 31(51.7%) belong to urban area from type of area.6)Majority of adolescent girls that higher percentage are 30(50%) from class 11th.and 12th.

Hence it is stated that there is significant association between levels of knowledge with selected demographic variables development for the school going children. With regard to the hypothesis H2 is accepted.

The table shows that the age, the degree of freedom is 2 , the χ2 value is 7.82 and p value is 0.02 that is significant. Type of area, the degree of freedom is 1, x^2 value is 6.97 and p value is 0.008 that is a significant. Class, the degree of freedom is 1 and x^2 value is 8.64 and p value is 0.005 that is also significant.

According to the socio demographic variables the age group of the adolescent girls assessed and tabulated in table 4.1 ; Distribution of subject according to socio demographic variables in frequency and percentage.

Related to age, Table 4.1 (Figures-4.3) Shows that maximum of adolescent girls 22 there percentage are (36%) were in the age group of 13-15yrs. 15 – 18 year adolescent girls frequency are 18 there percentage are 30.0%. 12 – 13 year there percentage are 17%. 18-20year adolescent girls there percentage are 5.0%.

Finding related to Socio economic status, Table 4.2 (Figure-4.4) Shows that maximum Socio-economic Status of low class adolescent girls 31 percentage are 51%. Middle class adolescent girls 17 percentage are 28.3% and high class adolescent girls 12 percentage are 20%.

Related to type of family Table 4.3 (Figure-4.5) Shows that maximum percentage of family background are nuclear family adolescent girls 25 there percentage are 41.7 %, joined family 19 adolescent girls there percentage are 31.7%

and extended family 16 adolescent girls there percentage are 26.7%.

Related to dietary pattern, Table 4.4 (Figure 4.6) Shows that maximum percentage of dietary pattern of adolescent girls are non-vegetarian 30 there percentage are 50% and vegetarian adolescent girls 30 there percentage are 50%.

Related to area, Table 4.5 (Figure-4.7) Shows that maximum percentage of urban area of adolescent girls 31there percentage are 51.7% and rural area adolescent girls 29 there percentage are 48.3%.

Related to class Table 4.6 (Figure-4.8) Shows that maximum percentage of 11th class of adolescent girls 30 there percentage are 50% and 12th class 30 adolescent girls there percentage are 50%

Analysis of Overall Pretest Knowledge Score
Analysis of overall pre-test knowledge score of adolescent girls regarding menstrual hygiene depicted in Table 4.7; Shows, adolescent girls, overall percentage of knowledge on menstrual hygiene. They are having only 45.3 percent of knowledge on menstrual hygiene.

Analysis of pretest level of knowledge
Analysis of pre-test knowledge score of adolescent girls regarding menstrual hygiene depicted in Table 4.8; (Figure-4.9) Shows the adolescent girls level of knowledge on menstrual hygiene in general 28.3% of women are having poor knowledge and 71.7% of them having average knowledge and none of them having adequate knowledge.

Analysis of Criterion Measurements
Analysis of criterion measurements of adolescent girls regarding menstrual hygiene in that given grade are poor knowledge percentage are divided (0 – 33%) and marks are divided (0-13). Second grade is given average knowledge (33% – 67.%) there marks are (14-27). Third grade is given adequate knowledge (67% – 100 %) there marks are divided (28-30).

Analysis of Overall Post-test Knowledge Score
Analysis of overall post-test knowledge score of adolescent girls regarding menstrual hygiene depicted in Table 4.9; Shows, adolescent girls, overall percentage of knowledge on menstrual hygiene. They are having 83.7 percent of knowledge on menstrual hygiene.

Analysis of Posttest Level of Knowledge
Analysis of adolescent girls regarding menstrual hygiene depicted in Table 4.10; (Figure-4.10) Shows the adolescent girls level of knowledge on menstrual hygiene none of adolescent girls are having poor knowledge , 15.0% of them having average knowledge and 85% of them having adequate knowledge.

Analysis of Criterion Measurements
Analysis of criterion measurements of adolescent girls regarding menstrual hygiene in that given grade are poor knowledge percentage are divided (0 – 33%) and marks are divided (0-13). Second grade is given average knowledge (33% – 67.%) there marks are (14-27). Third grade is given

adequate knowledge (67% – 100 %) there marks are divided (28-30).

7. Summary

The major findings of the study
In order to achieve the objectives of the study; an evaluate research approach was adopted**.**

The findings of the study were discussed under the following section.
Section A: Description of study subject according to socio demographic variables in frequency and percentage**.**
Section B: Data analysis related to pre-test level of knowledge of adolescent girls regarding menstrual hygiene by structured teaching **programme.**
Section C: t-test to evaluate the effectiveness of structured teaching programme on knowledge related to menstrual hygiene of adolescent girls.
Section D: Association between selected socio demographic variable with pre-test knowledge score of adolescent girls regarding menstrual hygiene using chi square test and frequency.

The finding of the study have been discussed with references to the objectives and hypothesis**.**

Section A: According to the socio demographic variables the age group of the adolescent girls is assessed and tabulated in table 4.1; Distribution of subject according to socio demographic variables in frequency and percentage. Table 4.1; Shows the demographic information of non working women those who are participated for the following study "A Quasi Experimental Study To Evaluate The Knowledge on Menstrual Hygiene By Structured Teaching Programme Among Adolescent Girls (13-18 years) In A Selected School At Sagar."

Related to age, Table 4.1 (Figures-4.3) Shows that maximum of adolescent girls 22 there percentage are (36%) were in the age group of 13-15yrs. 15 – 18 year adolescent girls frequency are 18 there percentage are 30.0%. 12 – 13 year there percentage are 17%. 18-20 year adolescent girls there percentage are 5.0%.

Finding related to Socio economic status, Table 4.2 (Figure-4.4) shows that maximum Socio-economic Status of low class adolescent girls 31 percentage are 51%. Middle class adolescent girls 17 percentage are 28.3% and high class adolescent girls 12 percentage are 20%.

Related to type of family Table 4.3 (Figure-4.5) shows that maximum percentage of family background are nuclear family adolescent girls 25 there percentage are 41.7 %, joined family 19 adolescent girls there percentage are 31.7% and extended family 16 adolescent girls there percentage are 26.7%.

Related to dietary pattern, Table 4.4 (Figure 4.6) shows that maximum percentage of dietary pattern of adolescent girls are non-vegetarian 30 there percentage are 50% and vegetarian adolescent girls 30 there percentage are 50%.

Related to area, Table 4.5 (Figure-4.7) shows that maximum percentage of urban area of adolescent girls 31there percentage are 51.7% and rural area adolescent girls 29 there percentage are 48.3%.

Related to class Table 4.6 (Figure-4.8) shows that maximum percentage of 11th class of adolescent girls 30 there percentage are 50% and 12th class 30 adolescent girls there percentage are 50%

Section B: In order to achieve the first objective was to assess the level of knowledge regarding menstrual hygiene of adolescent girls selected Government Girls Senior Secondary School Sehora Sagar M.P the following table was analyzed.

Analysis of Overall Pretest Knowledge Score
Analysis of overall pre-test knowledge score of adolescent girls regarding menstrual hygiene depicted in Table 4.7; Shows, adolescent girls, overall percentage of knowledge on menstrual hygiene. They are having only 45.3 % of knowledge on menstrual hygiene**.**

Analysis of pretest level of knowledge
Analysis of pre-test knowledge score of adolescent girls regarding menstrual hygiene depicted in Table 4.8; (Figure-4.9) Shows the adolescent girls level of knowledge on menstrual hygiene in general 28.3% of women are having poor knowledge and 71.7% of them having average knowledge and none of them having adequate knowledge.

Analysis of Overall Post-test Knowledge Score
Analysis of overall post-test knowledge score of adolescent girls regarding menstrual hygiene depicted in Table 4.9; Shows, adolescent girls, overall percentage of knowledge on menstrual hygiene. They are having 83.7 percent of knowledge on menstrual hygiene**.**

Analysis of Post-test Level of Knowledge
Analysis of adolescent girls regarding menstrual hygiene depicted in Table 4.10; (Figure-4.10) Shows the adolescent girls level of knowledge on menstrual hygiene none of adolescent girls are having poor knowledge , 15.0% of them having average knowledge and 85% of them having adequate knowledge**.**

Section C: In order to achieve the second objective to assess the effectiveness of structured teaching programme on knowledge related to menstrual hygiene of adolescent girls by post-test score of experimental group by inferential statistics.
Analysis of Comparison of Overall Knowledge Score before and after structured teaching programme.

The finding in Table 4.11; (Figure 4.11) shows the comparison of overall knowledge before and after the administration STP. On an average, adolescent girls improved their knowledge from 18.12 to 33.67 after the administration of STP.

Analysis of Effectiveness of Structured Teaching Programme
Analysis of effectiveness of structured teaching programme on adolescent girls regarding menstrual hygiene depicted in Table- 4.12; (Figure-4.12) shows the effectiveness of the STP. Considering the overall aspects, adolescent girls gained 38.4 percent more knowledge on hygiene after the administration of STP. This 38.4 percent of knowledge gain is the net benefit of this study, which indicates the effectiveness of STP.

Analysis of Comparison of Pretest and Posttest Level of Knowledge
Analysis of comparison of pre-test and post-test level of knowledge on adolescent girls regarding menstrual hygiene depicted in Table 4.13; (Figure-4.13) Shows the pretest and post-test level of knowledge on hygiene. Before the administration of STP, 28.3% of women are having poor knowledge and 71.7% of them having average knowledge and none of them having adequate knowledge After the administration of STP, none of adolescent girls are having poor knowledge , 15.0% of them having average knowledge and 85% of them having adequate knowledge.

Analysis of pre-test and post-test level of knowledge score on adolescent girls regarding menstrual hygiene depicted in Stuart-Maxwell test / Generalized McNemar's chi square test P=0.001 that shows the comparison of level of knowledge before and after the administration of STP.

In pretest, 17 adolescent girls are having poor knowledge and 43 adolescent girls are having average knowledge. In posttest 9 adolescent girls are having average knowledge and 51 adolescent girls are having adequate knowledge

Out of 17 poor knowledge adolescent girls in pretest, 2 adolescent girls were move to average level and 15 adolescent girls move to adequate level of knowledge. Out of 43 average knowledge adolescent girls in pretest, 7 adolescent girls were move to average level and 36 adolescent girls move to adequate level of knowledge.

Improvement of Pretest and posttest level of knowledge was calculated using Stuart-Maxwell test/ Generalised McNemar's chi square test.

Section D: In order to achieve the third objective to Association between selected socio demographic variable with pre-test knowledge score of adolescent girls regarding menstrual hygiene using chi- square test and frequency

Association between pretest level of knowledge and their demographic variables

The finding in Table 4.14; Shows the association between demographic variables and their pretest level of knowledge

None of the demographic variables are significantly associated with their pre test level of knowledge.

Association between demographic variables and their pretest level of knowledge was analyzed using pearson chi square test/Yates corrected chi square test. Association between

Posttest Level of Knowledge and their Demographic Variables

The finding in Table 4.15; (Figure 4.14, 4.15, 4.16) Shows the association between demographic variables and their posttest level of knowledge.

Age, type of area, class are significantly associated with their post test level of knowledge.

The table 4.15; shows that the age, the degree of freedom is 2, the $\chi 2$ value is 7.82 and p value is 0.02 that is significant. Type of area, the degree of freedom is 1, x2 value is 6.97 and p value is 0.008 that is a significant. Class, the degree of freedom is 1 and x2 value is 8.64 and p value is 0.005 that is also significant.

Elders, urban girls and 12th std girls gained more knowledge than others. Association between demographic variables and their pretest level of knowledge was analyzed using pearson chi square test/Yates corrected chi square test.

8. Recommendations

- Based on the findings of the study, the investigator proposes the following recommendations for future research :-
- The study can be replicated on larger samples in different settings to have a wider applicability by generalization.
- A similar study can be done with a true experimental approach on knowledge of adolescent girls regarding menstrual hygiene\
- An experimental study can be done by implementing the structured teaching programme to adolescent girls.
- Similar study can be carried out by using different teaching strategies.
- A follow up study can be conducted to evaluate the effectiveness of structured teaching programme regarding menstrual hygiene on adolescent girls.
- A study can be conducted on adolescent girls to access the knowledge towards and motivate adolescent girls to adhere to the correct practices of adolescent girls.
- A study can be conducted to develop and evaluate a structured teaching programme in the form of pictorial booklet for illiterate group.
- The effectiveness of information booklet on menstrual hygiene among adolescent girls of various schools can be carried out.

References

[1] Abdellah & Levine, (1979). Health Research – community. 12th edition.
[2] New Delhi ; WHO Regional Publications fourth East Asia Page No. 115-117
[3] Abraham, E.P,.& Levine, E. (1985). Better patient care through Nsg Rsearch.
[4] 2nd edition. New York; The Macmittan company Publication ; Page No. 213-214.
[5] Abraham, S. Ian, F, vol.G. coral, K, Derek, L.J. Micheal, M. & Don, Meneil.1985) Mensturation, menstrual protection & menstrual cycle problems, 4th edition. The Medical Research of Australlia, Page No.142, 247, 251.
[6] Abrol, B. (1993.). Research in Education. 3rd edition. New Delhi; Preventive Hall of India Private Limited Publication; Page No. 132-135.
[7] Basavanthappa, B.T.(2006). "Text book of Midwifery & Reproductive Health Nursing" 1st edition. Published by Jaypee Brother; Page No. 658 – 660
[8] Burns and Grove, and Stephen, B.V.(1999). form and style in Thesis Writing. Bostan; Houghtan Miffin Company Publication ; Page No. 564-567.
[9] Das. Leenardis, kharbgnyer. (1980). knowledge about Mensturation and practices of Nsg Students. affiliated to university of Alexandria of Egypt public Health Association, Page No. 65, 5-6, 509-23 (Abstract).
[10] Dhawan Indic. (1979). Awareness Status of Rural Girls Towards the Basic Sex Aspects. 3rd edition. The Nsg Research of India Publicasher ; Page No.70 (1), 28-29.
[11] Dorland,(1950). Medical Dictionary A. Reference Handbook and Dictionary of Nsg. 7th edition. Philendephia, W.B. Saunders company Publisher ; Page No. 36(2), 56-58.
[12] Dr.Das A. Gupta, M.(2008). Sarkar year General of Health Services. 4th edition. Central Buraue of Health Intelligence Health Information of India, New Delhi; Government of India, Page No. 22, 234-236.
[13] Dutta, A. et al.(1990). Analysis and evaluation of conceptual Models of Nsg, Philadelphia L.A. Davis co; Page No. 16, 34, 232-234.
[14] El-shazly. M.K. et al.(1980). Statistics in Psychology and evaluation.5th edition. Bombay; vakils Feffers and Simons Ltd Pubisher ; Page No. 65, 74-76, 221.
[15] Grun. et al. (1976). Obstetrics Complication. 4th edition. University of Delhi Publication; Page No. 13(1), 567-568.
[16] Howkins and Bourne show's. (2004). Educational Handbook for Health Personal. 9th Edition. WHO Geneva Publication ; Page No. 90-94.
[17] James A. and Diana, N.R.(1992). The Development of Menstural Related Beliefs and Behaviors during Early Adolescene. Child development. 3rd edition. Australia Philadelphia Publication ; Page No. 53 (7), 1567-1577.
[18] James A.(1979). The Cause of Evening Nursing Times. 2nd edition. New York
[19] Salvia Publication ; Page No. 25(1) 404-406.
[20] James P.J.(1992). Health and Basic Services. 6th edition. New Delhi; UNICEF, South Central Asia Regional Office Publisher; Page No. 47, 118-120.
[21] Jones and Kanthleen, J.U.(1987). The Psychology Impact of Menarche on Early Adolescent Fenates, A. Review of Literature Child Devolopment, Japan publisher 53 (6), 1413-1428.
[22] K.Drakshani Devi. at al. (1993). Nsg Concept of Practice.1st edition. New York Mc.Grace Hill Book. New Delhi Publisher ; Page No. 12(2), 124-125.
[23] Kerlinger,(1983). Experimental Psychology; 2nd edition. A.Methodological Approach. New Delhi; Practice Hall of India Pvt. Limited Publicasher ; Page No. 205.
[24] Korah, L.(1991). Mensturation Problems in Nigarian Students and Sex Education Health,4th edition, Jaipur Publication ; Page No.6, 219-221.

[25] Koshi, Elizabeth P.A.(1970). Study of Menstural Patterns of school Girls in on Urban areas. Indian Journal of Medical Research Publication; 58 (16) 1647.

[26] Kumar. Rakesh. et al.(1988). Foundation of Behavior Research London ; Holt, Rinehart and Winstan. INC Publication. Page No. 134.

[27] Ruble D.M. and Jeanne B.G.(1982). The experience of Menarche Child Development; 3rd edition. Jaypee Publication. Page No. 53