

## **“A study to assess the effectiveness of Video-Assisted Teaching Programme on knowledge, and practice regarding menstrual health among adolescent girls in selected schools at Udaipur, Rajasthan”**

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### **Abstract**

#### **Background Of The Study:**

Menstruation is the first significant milestone in the reproductive history of a women's life. Menstrual health is affected by the economic, social, cultural, and educational environment, in which girls are born, grow to womanhood, marry and repeat the process in starting their own families. In recent times reproductive tract infection have been increasingly recognized as a major health problem affecting women world over. Reproductive tract infection preferentially affect women over men, because women are more likely to be infected, less likely to seek care, are more difficult to diagnose and suffer more severe biological and social consequences. The aim of the study was to evaluate the effectiveness of video assisted teaching programme on knowledge and practice regarding menstrual health among adolescent girls in selected schools at Udaipur.

#### **Problem Statement:**

“A study to assess the effectiveness of Video-Assisted Teaching Programme on knowledge, and practice regarding menstrual health among adolescent girls in selected schools at Udaipur, Rajasthan”

#### **Objectives:**

- To assess the pre-test and post-test level of knowledge and practice regarding menstrual health among adolescent girls in experimental group.
- To assess the pre-test and post-test level of knowledge and practice regarding menstrual health among adolescent girls in control group.
- To evaluate the effectiveness of video assisted teaching programme on the knowledge regarding menstrual health among adolescent girls in experimental group.
- To evaluate the effectiveness of video assisted teaching programme on the practice regarding menstrual health among adolescent girls in experimental group.
- To find out the relationship between level of knowledge and practice regarding menstrual health among adolescence girls experimental group.
- To associate the pre test level of knowledge & practice regarding menstrual health among adolescent girls with their demographic variables such as age, age at menarche, educational status of the student, educational status of the parent, occupation of the parents, family monthly income, type of family, religion, any prior information regarding menstruation.

#### **Materials and Methods:**

Non equivalent pre test post test control group quasi experimental research design was used. The tool used for data collection was structured questionnaire to assess the level of knowledge and practices regarding menstrual health among adolescent girls who participated in the present study. The sampling technique adopted for the study was simple random sampling technique. The sample size of the study was 60 among which 30 samples were in experimental group and 30 samples were in control group.

#### **Result:**

80% in experimental group had inadequate knowledge in pre test, after video assisted teaching only 4% had inadequate knowledge in post test. There was significant improvement in mean post test knowledge score (12.13) in experimental group which was higher than that of the control group (5.83) (t value = 8.52,  $p < 0.05$ ). Also 66.6% adolescent girls in experimental group had poor practice in pre test, after video assisted teaching 33.3% had good self reported practices and 50% had moderate practices in experimental group. There was an improvement in mean post test practices score of the experimental group (6.6) which was higher than mean post test practice score (3.37) in control group (t value = 7.83,  $p < 0.001$ ). There was a highly significant positive relationship between the post test level of knowledge and the post test level of practice of adolescent girls. The obtained 'r' value was 0.54 is significant at 0.05 level.

#### **Conclusion:**

The study proved that video assisted teaching programme is an effective teaching strategy in improving the knowledge and practices of adolescent girls related to menstrual health.

**Keywords:** Assess, Effectiveness, Adolescent Girls, Video Assisted Teaching.

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## I. Introduction

### Background Of The Study:

Adolescence, is a transitional phase of growth and development between childhood and adulthood. The world health organization (WHO) defines an adolescent as any person between ages 10 & 19. This age range falls within WHO's definition of young people, which refers to individuals between ages 10 & 24.

According to UNICEF the manifest gulf in experience that separates younger and older adolescence makes it useful to consider this second decade of life as two parts: early adolescence (10-14 years) and late adolescence (15-19 years).

In 2009, there were an estimated 1.4 billion adolescents in the world, forming around 18 per cent of the global population. An adolescent is defined as an individual aged 10-19 by the UN. The vast majority of the world's adolescents – 88 per cent – live in developing countries. The least developed countries are home to roughly 16 per cent of all adolescents. Today, 1.2 billion adolescents stand at the crossroads between childhood and the adult world. Around 243 million of them live in India (UNICEF), 1.2 billion adolescents aged 10-19 years today make up 16 per cent of the world's population (UNICEF 2016).

Adolescence is a stage of transition from childhood to adulthood. During this stage of life, a youth undergoes rapid changes in body structure, mediated by the sex hormones. The appearance of sexual character is coupled with changes in cognition and psychology. Whereas adolescence refer to this entire process, puberty refers to the physical aspect. The age group 10-19 years considered as the period of adolescence, and puberty marks the early half of adolescence. Though it is a continuous process, for convenience sake adolescence is generally divided into three phases: early (10-13 yrs), mid (14-16 yrs), and late (17-19 yr) puberty (Vinod k paul & Arvind Bagga 2013).

The internal changes in the individual, although less evident, are equally profound. Recent neuroscientific research indicates that in these adolescent years the brain undergoes a spectacular burst of electrical and physiological development. The number of brain cells can almost double in the course of a year, while neural networks are radically reorganized, with a consequent impact on emotional, physical and mental ability. During adolescence that girls and boys become more keenly aware of their gender than they were as younger children, and they may make adjustment to their behaviour or appearance in order to fit in with perceived norms. They may fall victim to ,or participate in, bullying, and they may also feel confused about their own personal and sexual identity. During adolescence teens develop a stronger recognition of their own personal identity, including recognition of a set of personal moral and ethical values, and greater perception of feelings of self esteem or self worth (UNICEF 2011).

Puberty in girls starts with breast development (thelarche) any time between 8 & 13 year. This is followed by appearance of pubic hair (pubarche) and subsequently menstruation (menarche), occurring at an average of 12.6 years (range 10-16 yr). Girls who are entering puberty have rapid body changes. It is during this time when young girls develop breasts, hair under arms and around private parts ,oily skin and body odour which will need to pay close attention to personal hygiene during that time (Vinod k paul & Arvind Bagga 2013).

Menarche is the onset of menstruation and it is one of the most significant mile stone in a woman's life. Unlike other pubertal changes that are gradual and continuous, menarche is a distinct event with a sudden onset. It is highly correlated with after pubertal characteristics and is, therefore preferred as a benchmark for sexual maturation. For most females it occurs between his age of 10 to 16 years, however it shows a remarkable range of variation.

The first menses is called "Menarche". Menarche is the signal that sexual maturation of the young female has occurred and that the body is capable of support pregnancy. With onset of menstruation a girl becomes aware of her emerging identity as a female capable to reproduce. Her understanding and acceptance of her new identity will be greatly influenced by the feedback she receives from peers, educators and most importantly her parents. Menstruation occurs periodically throughout the child bearing years, except during pregnancy and lactation. The ages of onset of menstruation differ from person to person but seem to be affected by heredity, racial back round and nutritional status.

Menstruation is a physiological phenomenon which is unique to females that begins in adolescence. Menstruation is also properly called menses (or) catamenia and more commonly a period of monthly flow. Menstruation is not an illness. It is a healthy, normal, mature process. Menarche occurs between nine and fifteen years. Menarche signals reproductive maturity. Menarche often comes with anxiety, fear, confusion and depression. On the other hand, menarche is celebrated in some cultures and gifts are given to the young girl.

Early onset of menarche has been the risk factor for breast cancer and other diseases. It has been noted that the average age of menarche is gradually going down. In Sweden during the past 50 years, the average rate of decline was 10 days per annum, in Japan it was one year in a period of eight years, in India a decrease of 5-7 days per annum was observed in Bengali Hindu girls. In Northern and Eastern Europe the downward trend in menarche age has stopped. The menarchial age has fallen steeply is stable around 13 years and may be rising again. There is variability for age at menarche between women across different countries or across different ethnic group (Dr. Chandra Prakash 2010).

Menstruation is a physiological cyclic function common to all healthy adult female. There are several minor health problems such as backache, constipation, tension that may be associated with the pre menstruation period or during menstruation. If assistance given in time, the young girl learn to cope with it and does not allow it to interfere with healthy living.

Menstruation is the first indication of puberty. During puberty, the physical changes occur which transform the body of child into that of an adult, changes in body size, and changes in body proportions. A menstrual taboo is any social taboo concerned with menstruation. In some societies, it involves menstruation being perceived as unclean or embarrassing, extending even to the mention of menstruation both in public (in the media and advertising) and in private (among the friends, in the household, and with men). Many traditional religions consider menstruation ritually unclean. Most of the girls receive their gynecological information from their mothers, religious books, older sister, or a peer. However, such information was generally given after menarche rather than before. Hence, there is a need to provide healthy family life education to the woman particularly the adolescent girls (Anjali Mahajan, 2017).

Menstruation is linked with several misconceptions and false practices, which sometimes result into adverse health outcome. Menstrual disturbances are the commonest presenting complaint in the adolescent age group and unhygienic practices during menstruation can lead to untoward consequences like pelvic inflammatory diseases and even infertility. Special health care needs and requirements of women during monthly cycle of menstruation are collectively given the term "Menstrual hygiene".

Today millions of women are sufferers with reproductive tract infection and its complications and often the infection is transmitted to the offspring of the pregnant mother. Before bringing any change in menstrual practices they should be educated about the facts of menstruation and its physiological implications. (Dr. Neelima Sharma et al 2013).

Menstruation is still regarded as something unclean or dirty in Indian society. The reaction to menstruation depends on awareness and knowledge about the subject. The manner in which a girl learns about menstruation and its associated changes may have an impact on her response to the event of menarche. Isolation of the menstruating girls and restrictions being imposed on them in the family, have reinforced a negative attitude toward this phenomenon. Menstrual practices are clouded by taboos and social cultural restrictions even today, resulting in adolescence girls remaining ignorant of the scientific facts and hygienic health practices, necessary for maintaining positive reproductive health. Women having better knowledge regarding menstrual hygiene and safe practices are less vulnerable to reproductive tract infections and its consequences. Therefore, increased knowledge about menstruation right from childhood may escalate safe practices and may help in mitigating the suffering of millions of women. The social stigma attached to menstruation causes many girls and women to carry out dangerous hygiene practices. Lacking a platform to share menstrual hygiene problems, girls and women often suffer from discomfort and infection, avoiding urination during menstruation, and using any kind of cloth available old (or) unwashed as an, but still girls are not visiting medical Practitioners. Use of sanitary pads and washing the genital area are essential practices to keep the menstrual hygiene. Unhygienic menstrual practices can affect the health of the girls and there is an increased vulnerability to reproductive tract infections.

Menstruation is still considered a subject of taboo with its false beliefs due to ignorance. Hygiene practices and knowledge were inadequate. Menstrual hygiene practices have shown marginal improvement in the usage of clean sanitary napkins. Facilities for changing pads and menstrual cleaning have to be provided in schools and workplaces adequately in safe and hygienic washrooms. Information on reproductive health needs to be provided to girls before attaining menarche. Health education for girls regarding menstruation and its safe practice from teachers and mothers are going to improve the confidence. Encouraging the mothers to discuss with their daughters and abolish the myths, taboo and stigma associated with menstruation will improve the overall women health, education and empowerment. Policy makers, health professionals, women rights activists and environmentalists have a responsibility towards achieving this goal (Latha Krishnamurthy et al 2011).

Poor menstrual hygiene is a risk factor for reproductive tract infection and cervical neoplasia. Learning about hygiene during menstruation is a vital aspect of health education for adolescent girls as patterns are developed in adolescence are likely to persist into adult life (J. Bharatha Lakshmi 2014).

The proper menstrual hygiene and correct perception can protect the women from suffering. The girls should be educated about the facts of menstruation, physiological implication, about the significance of

menstruation and development of secondary sexual characters, and above all about proper hygienic practices and selection of disposable sanitary menstrual absorbent. This can be achieved through educational television programs, compulsory sex education in school curriculum and through school/nurses health personnel. Menstrual health is an important part of life cycle approach to women's health, so it is important for all adolescent girls that they should get a loud and clear messages and services on this issue (Channawar Kanchan, 2015).

Hence, the present study was planned to assess the knowledge and practice regarding menstrual health among adolescence girls in selected schools at Madurai.

## II. Hypothesis:

Hypothesis were tested at 0.05 level of significant level.

H1:

Mean post test knowledge score on menstrual health of adolescent girls in the experimental group will be significantly higher than their mean pre test knowledge score on menstrual hygiene.

H2:

Mean post test knowledge score on menstrual health of adolescent girl in the experimental group will be significantly higher than the mean post test knowledge score on the control group.

H3:

Mean post test practice score on menstrual health of adolescent girls in the experimental group will be significantly higher than their mean pre test practice score. H4:

Mean post test practice score on menstrual health of adolescent girls in the experimental group will be significantly higher than the mean post test practice score on adolescent girls in the control group.

H5:

There will be a significant positive relationship between knowledge and practice regarding menstrual health among adolescent girls in the experimental group.

H6:

There will be a significant association between pre test level of knowledge related to menstrual health among adolescent girls and their selected demographic variables such as age, age of menarche, educational status of the student, educational status of a parent, occupation of parents, family monthly income, types of family, religion, prior information regarding menarche.

H7:

There will be a significant association between pre test level of practice related to menstrual health among adolescent girls and their selected demographic variables such as age, age of menarche, educational status of the student, educational status of a parent, occupation of parents, family monthly income, types of family, religion, prior information regarding menarche.

## III. Operational Definition:

### Effectiveness:

It means the ability to be successful and produce the intended results.- Cambridge dictionary.

In this study, it refers to the extend to which video – assisted teaching programme on menstrual health in adolescent girls has achieved the desired effect in improving the knowledge and practice related to concept of menstrual hygiene among adolescent girls which was measured by the scores obtained by them using the structured knowledge and practice questionnaire.

### Video Assisted Teaching Programme:

A video assisted teaching programme is a well planned instruction to provides information to improve knowledge and positive attitude.

In this study, it refers to a method of video assisted teaching programme which was developed by the researcher and validated by the experts regarding menstrual health among adolescent girls. The content of the video assisted teaching include reproductive organs and functions, meaning and changes during puberty, growth spurt, hormonal behavioural changes during puberty, menstruation and menstrual cycle, menstrual hygiene and associated problems of menstruation. The timing of the video assisted teaching programme was 30 minutes, age

group of the student was 12- 15 years belongs to 7th, 8th and 9th standard. The video assisted teaching programme showed in morning at the classroom in the presence of class teacher.

#### Knowledge:

It means facts (or) condition of knowing something with familiarity gained through experience (or) association.

- Oxford Dictionary

In this study knowledge refers to the correct written responses from the adolescent girls through the structured knowledge questionnaire on pubertal changes, menarche and menstrual health, which was measured by the structured knowledge questionnaire.

#### Practice:

Actual application of idea or belief.

- Oxford Dictionary.

In this study practice refers to the action based on knowledge carried out by adolescent girls during menstrual period which is measured by structured practice questionnaire.

#### Pubertal Changes:

It refers to the puberty is the process of physical changes through which a child's body matures into an adult body capable of sexual reproduction.

In this study it refers to the changes such as development of breast, and menarche, broadening of hip, deposition and gaining of fat, auxiliary and pubic hair growth as well as behavioural changes that occur in girls in their adolescent age.

#### Menstruation:

Refers to the periodic discharge of blood and mucosal tissue from the uterus, occurring approximately monthly from puberty to menopause in non pregnant women and females of other primate species

- Dictionary.com

In this study it refers to the adolescence girls who are all attain menarche at the age between 12-15 years.

#### Menstrual health:

Refers to hygienic practices adopted by the adolescent girls during their menstruation like bathing, changing napkins, disposal of napkins, use of undergarment, washing of used cloths, drying of used clothes, maintaining perineal hygiene during menstruation

#### Adolescent girls:

It refers to the girls who are in the age of 10-19 years.

-WHO

In this study adolescent girls refers the girls in the age extending from 12-15 years , who are all in 7th to 9th standard and she should have attained menarche and also she had a (28 days) regular menstrual cycle & studying in selected rural schools in Udaipur Rajasthan.

#### School:

It refers, a school is an institution designed to provide learning spaces and learning environments for the teaching of students (or) pupils under the direction of teachers.

-Wikipedia

In this study, school refers to institutions which offer education for the student's of seventh to tenth standards in rural area.

### IV. Assumptions:

- ☐ Menarche at the age between 12-15 years.
- ☐ Video assisted teaching programmes improve the knowledge & practice.
- ☐ Knowledge and practice have strong influence on the adoption of healthy practice.
- ☐ 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 a and menstrual hygiene from home & school.
- ☐ The nurse has an important role in imparting education about menstrual health among adolescent girls.

#### Delimitation Of The Study:

- The study is delimited to adolescent girls between the age group of 12 to 15 years.
- The study is delimited to adolescence girls who are all having regular menstrual cycle 28 days cycle).
- Data collection is limited to selected rural schools in Udaipur. The data collection period is limited to 5 weeks.
- The evaluation of knowledge and practice intervention is limited to a time span of 15 days after the administration intervention.

### Projected Outcome:

The study revealed the effectiveness of video assisted teaching programme on menstrual health among adolescent girls. The results of the study showed there was increase in knowledge and practice regarding menstrual health among rural adolescent girls. The finding of the study helps the professionals in educating the adolescent girls about menstrual health.

### Conceptual Framework:

The study is based upon J.W.Kenny's open system model. All living systems are open, in that there is a continual exchange of matter, energy and information. Open Systems have varying degrees of interaction with the environment from which the system receives input and gives back output in the form of matter, energy and information. For survival, all systems must receive varying types and amount of matters, energy and information.

The main concepts of the open system model are input, throughput and output.

According to J.W. Kenny's Open System Model,

**Input:** Refers to matter, energy and information that enters in to the system through its boundary. In this study it refers to the assessment of video assisted teaching programme on knowledge and practice regarding pubertal changes, menarche, menstruation & menstrual health.

**Throughput:** Refers to processing where the system transforms the energy, matter and information. In this study it refers to the transformation of knowledge and practice regarding menstrual health among adolescent girls after receiving video assisted teaching programme.

**Output:** Refers to matter, energy and information that are processed. In this study it refers to the increase the level of knowledge and practice regarding menstrual health as measured by post test.

**Feedback:** Based on the analysis of the post test knowledge and practice shows that the video teaching programme can be modified if necessary and the same pattern can be followed once again.

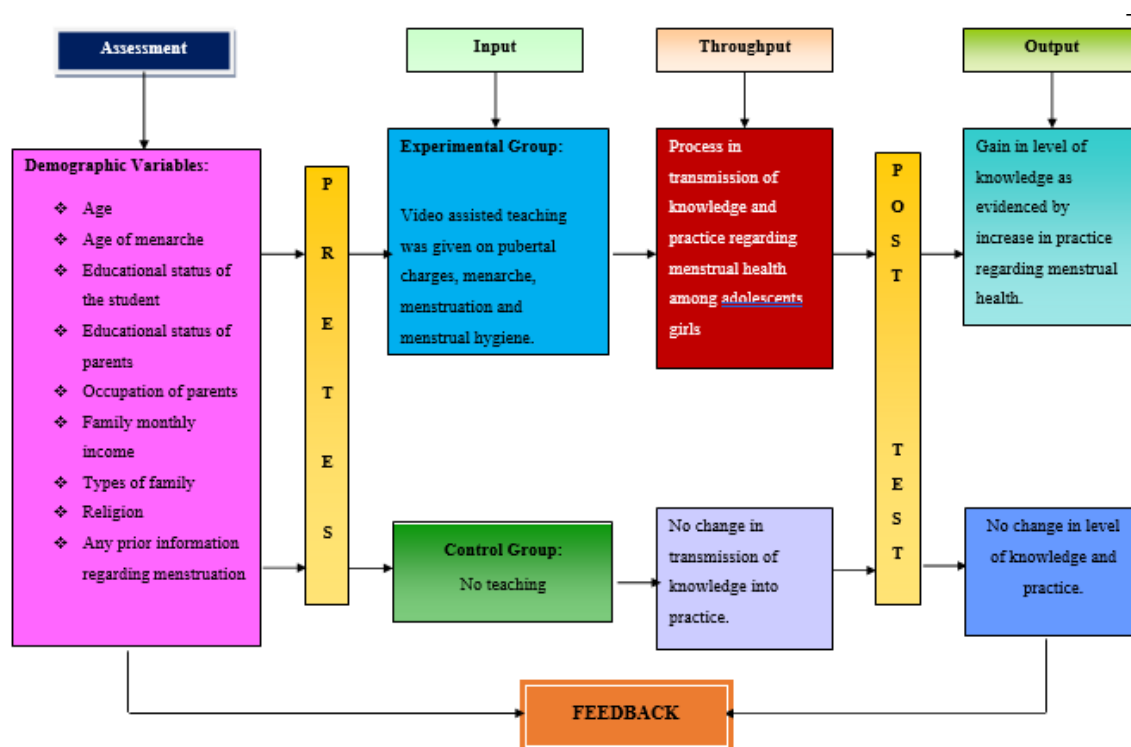


Fig 1: J.W.Kenny's Open System Model

## V. Review Of Literature

Review literature is defined as an extensive, exhaustive and systematic examination of publication of publication to the research project.

Review of literature is a critical summary of research on a topic of interest generally prepared to put a research problem in context or to identify gaps and weakness in prior studies so as to justify a new investigation.

-Polit & Hungler 2012 Research and non research literature reviewed were organized under the following headings.

1. Over view of menstruation, menstrual hygiene and newer concept of menstruation.
2. Studies related to knowledge on menstruation & menstrual hygiene.
3. Studies related to practice on menstrual hygiene.
4. Studies related to effectiveness of structured teaching programme on menstruation and menstrual hygiene.

## VI. Over View Of Menstruation, Menstrual Hygiene & Newer Concept:

Menstruation & Menstrual hygiene:

Menstruation is a normal physiological cyclic function common to all females in the reproductive age group. It influences her quality of life at the individual, household and societal level. The socio cultural meanings attached to it have a far-reaching effect on her health status.

Biologically, menstruation is the visible manifestation of cyclic physiologic uterine bleeding out of shedding of the endometrium. It occurs due to invisible interplay of hormones mainly through hypothalamic-pituitary —ovarian axis. The menstrual cycle is usually one of 28 days, measured by the time between the first day of one period and the first day of next. The duration of bleeding is about 3-5 days and estimated blood loss is between 20 to 80 ml with an average of 50-ml (Padubidri & Shirish, 1999; Dutta, 2004).

Nearly, in 500 BC, Sushruta Samhita noted that Indian girls commenced to menstruate at the age of 12 years. The importance of menstruation and menarche can be gauged by writing in Mahabharata that, "Each time an unwedded maiden has her monthly course, her parents or guardians are guilty of heinous crime of slaying the embryo." Therefore, the father tried to find a husband for his daughter as early as possible after the commencement of menstruation. (Aruna Marathi 2009)

Joshi et al, (2011), in their study on socio cultural implications of menstruation and menstrual problems on rural women's lives conducted in Gujarat found that most of the women were unaware of the concept of reproduction prior to menarche. A few women who had some idea stated that their knowledge was limited to the awareness that "women bled from the vagina on certain days of the month". Apparently they knew nothing beyond this. Even women who had attained menarche at the age of 16 years or later stated that they were not fully aware of the implications of menstruation.

Martin (2011) did a qualitative study among three age groups of women (puberty to childbearing, child bearing and child rearing age, menopause and post menopause) in all social groups. These women saw menstruation not as a private function, but as something that was part of their lives at school and work also. They describe menstruation as a 'hassle' and were concerned about its 'messiness' because they face a variety of practical difficulties in keeping it in secret while at work.

One of the largest studies of menstrual beliefs was the W.H.O funded study of patterns and perceptions of menstruation. This study involve over 5000 women in 10 countries and collected information about their menstrual experiences, such as length, frequency, and amount of bleeding as well as their beliefs about menstruation. Analysis of data on menstrual beliefs have shown 9 different grouping of beliefs, which demonstrate the diversity of views held by women about menstruation, with each belief pattern being held by relatively a small proportion of women, ranging from 4.68 percent to 19.17 percent of the total sample.

Desai et al, (2010) found that 34.6 percent adolescents had depression in response to menarche. Other forms of attitudes were indifference and revulsion. Nearly 80 percent of the respondents practised some form of taboo during menstruation such as avoiding holy places and not touching others. Other taboos include hair washing, bathing and mixing with other family members.

Joshi et al, (2012) identified that a menstruating woman had to maintain some form of isolation because she was considered 'impure' and 'polluted'. The restrictions to be practised during menstruation are more rigidly practised among Hindus than Muslims.

Ginsburg (2013) found that the social attitudes towards menstruation play a role in the treatment of women's hygiene items. Study of over 150 boxes of sanitary goods in United States- northern California reveals how the design of the objects and of their packaging can be read as encouraging private, discreet consumption. She identified that the packaging of sanitary napkins are relatively plain and that it avoids any reference to the physicality of the objects inside or to their use.

Desai, (2012) found 77.3 percent girls used household clothes for menstrual flow and only 22.6 percent used sanitary napkins. Use of sanitary napkins, though hygienic has still not become popular, and the reasons

reported as responsible for this are lack of easy availability and cost. The mere fact that the person is shy to buy it from the shop shows the conservatism in the society.

James, (2013) identified that adolescent girls had inadequate knowledge of menstrual hygiene. Girls were not confident of their self-care concerning protection against staining clothes during periods, so much so that they imposed certain restrictions on themselves. During menstruation, most of the girls were using unsterilised cotton pads or old cloth pieces and reused old clothing after washing. Majority of the girls changed pads at fixed times of the day i.e., once or twice. They did not change the pad when it was soaked. Also she identified that a large number of girls disposed of their pads unhygienically. Girls were dissatisfied with the information they had received on menstrual hygiene.

The most common menstrual disorders found among adolescent girls are dysmenorrhoea, Pre-menstrual syndrome and dysfunctional uterine bleeding (Dutta, 2004).

James, (2010) in her study on menstrual knowledge and practices among adolescent girls in Punjab found that the common problems faced by adolescent girls a few days before or during the menstrual periods were abdominal pain, backache, tension and constipation.

John et al, (2012) studied 600 adolescent girls of ages ranging from 13-19 years and identified that only 61 percent had regular cycles, 55 percent had painful menstruation and 21 percent had either excessive or scanty bleeding. The cycle ranged between 26-30 days for more than 65 percent of the respondents. Pre or intermenstrual complaints like abdominal pain, cramps and acne were reported by 40 percent of the respondents.

In a random study of 2000 girls between the age of 11 and 19 years at Ajmer, 56.48 percent had gynaecological problems. The major problem was menstrual in 43.3 percent cases and they were dysfunctional uterine bleeding in 7.6 percent cases and dysmenorrhoea in 24 percent cases. The menstrual problems were found more in lower socio economic status. Of the total cases 50 percent were practising some form of menstrual taboos and a definite relation is found with menstrual problems and taboos (Bhargava, 2013).

Joseph, (2013) found that 92 percent of the unmarried adolescent girls in a selected slum reported painful menstruation; 64 percent, heavy bleeding and 52 percent had irregular bleeding. These menstrual problems were more common among girls who were employed.

Newer concepts in menstruation:

Mesenchymal stem cells (MSCs) are self-renewing progenitor cells with the capacity to differentiate into various cell types under specific conditions. Adult stem cells derived from different sources, including bone marrow, adipose tissue or post-natal tissues, such as umbilical cord and placenta, have been shown to possess regenerative, anti-inflammatory or immune regulatory potential in a variety of diseases. The limitation of their clinical use resides in the invasiveness of the extraction methods and in some cases their limited proliferative capacity. Furthermore, diverse mesenchymal stem cells sources are known to display distinct functional properties that might contribute to specific therapeutic effects.

A study published in 2007, was the first to identify and characterize a new source of stem cells within menstrual fluid. It showed that menstrual-derived stem cells (MenSCs) are rapidly expanded and differentiated under standard laboratory conditions. There is growing interest in their clinical potential since they display a high proliferation rate, are multipotent and obtainable in a periodic and non invasive manner, devoid of the biological and ethical issues concerning other stem cell types [2-5]. Recent evidence suggests that MenSCs are positive for several MSCs markers, including CD90, CD29, CD105, and CD73, and also remain negative for hematopoietic cell markers, such as CD34, CD45 and CD133. Some reports have demonstrated the expression of embryonic markers and pluripotent intracellular cell markers, such as OCT-4, c-kit and SSEA-4, not found on MSCs from other sources, although these findings have been disputed, even in cells isolated and cultured under comparable conditions.

## VII. Studies Related To Knowledge On Menstruation & Menstrual Hygiene:

Neelima Sharma et al, (2013) a cross sectional study was conducted among 50 girls of first year MBBS of Sri Aurobindo Institute of Medical Sciences, Indore. This is an anonymous, questionnaire-based survey. A Self-developed, pre-validated questionnaire was used. Data is expressed as counts and percentages. A pre formed pre-tested questionnaire was used. The study finding revealed that most of the girls (50.56%) were in the age group of 18-20 years. Mean age of attaining menarche was 13 ranges were 9-17. Researcher found that in 35.22% of students, menstrual habits were inculcated by their mothers. 152 girls (86.36%) were using sanitary napkins as absorbent material during their menstrual cycle. The researcher concluded that the girls should be educated about the significance of menstruation and development of secondary sexual characteristics, selection of a sanitary menstrual absorbent and its proper disposal. This can be achieved through educational television programmes, compulsory sex education in school curriculum and knowledgeable parents, so that she does not develop psychological upset and the received education would indirectly wipe away the age old wrong ideas and make her to feel free to discuss menstrual matters without any inhibitions.



Varma et al., (2013) had conducted a descriptive cross sectional study among 120 adolescent girls of a higher secondary school situated in Varanasi district.

Information was obtained with the help of a predesigned and pre tested questionnaire in a local language. The result of the study was about half of the girls (58.3%) were aware about menstruation prior to attainment of menarche. The mean age of menarche was found to be 12.98 yrs. The most common menstrual pattern was 3/30 days. Mother was the first informant regarding menstruation in case of (41.66%) of girls. Most of the girls (85.8%) believe it as a physiological process. This study has highlighted that the need of adolescent girls to have accurate and adequate information about menstruation and its appropriate management. Girls should be well versed before the age of menarche about the physiology of menstruation, the process involved and its important etc. Education regarding reproductive health and hygiene should be included as a part of school curriculum.

Barathalakshmi et al, (2013) had done a descriptive cross sectional study among 435 school going girls of 8th – 12th standards. A pre-designed, pre tested structured questionnaire was used in the study. Descriptive statistics, Pearson Chi- square test and Kruskal Wallis test were applied in data analysis. This study reveals that, the mean age of menarche in the study group was 12.9 + 1.2 years. Only 28.2% girls were aware of menstruation before menarche. Very few mothers are ready to share the information which is of paramount significance to their daughters. Only 28.2% girls were aware of menstruation before menarche. The study finding revealed that 45.7% respondents expressed fear and 30.5% girls expressed worry on seeing first menstruation. In the present study only 30.5% girls knew that menstruation is due to cyclical uterine bleeding and 34.0% girls knew that hormonal changes are responsible for it. It was distressing to observe that in the present study most of the girls (65.9%) did not know the cause of the menstrual bleeding. Study concluded that personal hygiene practices were also found to be unsatisfactory. It is important to educate adolescents about the issues related to menstruation, so that they could safeguard themselves against various infections and diseases.

Shivaleela et al, (2014) had conducted a School based cross- sectional study among high school girl students in Western Ethiopia. Study populations are 9th and 10th grade were 1400 and 1392 respectively. The girls who attained menarche were included for the study. Girls with visual impairment, evening class students and those who were critically ill and incapable to provide informed consent were excluded from the study. The sampling procedure started by stratifying the schools into two categories, governmental and non-governmental. The selection of the schools was done randomly. Proportional number of participants (students) was selected by simple random sampling technique. The sampling frame was obtained from the student registration books of the respective schools. To collect data by self- administered questionnaires were employed. . The descriptive analysis including proportions, percentages, frequency distribution and measures of central tendency was done. In this study, more than half (60.9 %) of the students had good knowledge about menstruation and menstrual hygiene. The majority (76.9 %) girl knew that menstruation was a physiological process, whereas 9.7 % them believed that it was a curse from God.

Rakesh Ninama et al, (2015) had done a Communities based cross sectional study on knowledge on menstrual hygiene. Study samples are adolescent girls of urban areas as well as rural areas. Study was conducted in lord Krishna school, pioneers school, and eklavya school in Gujarat. Two hundred and fifteen adolescent girls from 9th, 10th, 11th and 12th standard were selected for the study. A pre designed pre test structured questionnaire was used. The study explained that the adolescent girls (68%) were unaware regarding the reason for menstruation. The main source of knowledge regarding menstruation was mother (83%). This might be because nobody talks much about the menstruation. There is gap in educational system where reproductive health is not taught because either considered non important or unsocial. It is assumed that knowledge regarding menstruation will come gradually by its own. Most of the adolescent are unaware of normal physiology of menstruation. As mother plays vital role as a teacher for imparting primary knowledge regarding menstrual cycle to adolescent. So mother need to be armed with proper and complete knowledge via formal and informal communications.

Senthil Priya et al, (2015) A cross sectional study was undertaken among 500 adolescent girl students in the age group of 14 – 19 years who had attained menarche. The study settings are government middle and higher secondary school for girls which was very near to Salem medical college . The student's data were collected by personal interviews by using a pre tested structured questionnaire. The questionnaire comprised of age, socio economic status, educational status, menarcheal age, menstrual pattern, premenstrual Symptoms (PMS), dysmenorrhoea, impact of menstrual disorders on school attendance, consultation for menstrual problems and the hygienic practices followed during the time of Menstruation. The mean age of the adolescent girls was 17.23±2.31 years. The study subjects majority of them were underweight (37%), whereas only 16.4% were overweight and 14.2% were obese. In this study 62.2% of the adolescent girls had premenstrual symptoms, among that various menstrual symptoms seen the most common were abdominal pain (94.6%), cramps (82.2%) and backache (77.8%). So this study concluded that Poor menstrual hygiene in this study subjects would make them at risk of developing certain reproductive tract infections. So a proper awareness

programme had to be conducted on a routine basis in all schools particularly the rural schools emphasising the importance of genital hygiene and the remedies for the common menstrual problems which occurs in adolescent age group.

Shriram et al, (2015) cross-sectional community based study was conducted among migrant adolescent girls residing in (Dera) the Corporate ion area of Nashik (Maharashtra). Duration of the study was 2 months. Purposive sampling method was adopted. In -depth interviewing technique use among such purposively selected 60 adolescent girls till redundancy in responses started creeping up. A semi-structured schedule with open ended questions was used for data collection process. End of the study reveal the truth that mean age of study participants were  $15.6 \pm 2.4$ . Almost all of the study participants were illiterate and not aware about their own age. Majority of (60%) study participants were married in which most of them were married within 2-3 years after menarche. Majority of the study participants (75%) were not aware about menarche. Those having the knowledge of menarche in which 50% information was obtained from friends followed by mothers (35%). Majority of the study participants were experienced the complaints of the Reproductive Tract Infections (RTIs) in last 6 months. In which 80% were abnormal vaginal discharge and 20% were low backache. All the study participants were not taken any treatment for their complaints of reproductive tract infections. In this study found that, lack of awareness about proper menstrual hygiene and improper sanitary practices. It may be because of social prohibition, educational gap and negative attitude of parents in discussing menstrual related topic openly. There is need to give focus on such migrated adolescents girls to aware them about proper menstrual hygiene and practices.

Ramachandra et al, (2016) had done a cross sectional study among 550 school- going adolescent girls in the age group of 13-16 years in Karnataka. A pre- designed, pre-tested semi-structured questionnaire was used. Data obtained and analyzed using the SPSS Version 15, and findings were reported in the form of descriptive statistics. The study shows that the mean age at menarche was 12.39 years in the urban schools with overall men age of 13.98 years. Age at menarche of the participants ranged between 11 to 15 years (88.5%). This study showed that only 83 (33.27%) the urban had awareness about menstruation prior to menarche. The unawareness of girls about menstruation might be the cause for the girls in the present study to feel embarrassed, anxious or scared at onset.

Ruchi, Fartha Azmi (2016) had done a descriptive study on knowledge of the adolescence girls regarding menstrual hygiene in school bahadradbadharidwar. Non experimental quantitative research approach was used. Study populations are adolescent school girl, 40 samples were selected from Aarya inter college in haridwar, convenient sampling technique was used. Data collection done through structured knowledge questionnaire. Descriptive and inferential statics were used for data analysis. This study concluded that only 25% of the adolescent having adequate knowledge in menarche and menstrual hygiene.

JestyKuriachen and Sridevy (2016) had conducted a experimental study on knowledge on menstrual hygiene. One group pre testpost test experimental design was used.

This study were conducted in selected Government higher secondary school, Kadirkamam in Pondicherry. The populations of the study comprises of adolescent girls who are studying 9th standard selected at Pondicherry. The total sample of the study consists of 50 adolescent girls who are studying 9th standard. Convenient and Purposive sampling technique was used. A structured knowledge questionnaire was used for the data collection process. The study revealed that the knowledge and attitude level in pre test was inadequate but after the structured teaching programme the subjects had adequate knowledge and attitude in the post test improved significantly. Among the subject there was significant difference between pre and post test knowledge and attitude score with respect to different variables. Hence adolescent girls need awareness of menstrual hygiene.

Anjali Mahajan (2017) had conducted on descriptive cross sectional study done on 100 adolescent girls from class 9th to 12th of Govt. Girls School in Shimla, Himachal Pradesh (Convenience sampling). A self-administered, structured, Pre tested, closed-ended anonymous questionnaire consisting of questions on knowledge and practices regarding menstrual hygiene was used as a study tool. Data obtained were analyzed using SPSS statistical software package, version 16 (SPSS Inc., Chicago, IL, USA), and findings were reported in the form of descriptive statistics, quantitative variables using Chi-square test. The data on knowledge scores revealed that 29% had adequate knowledge about menstrual hygiene, and 71% had inadequate knowledge about menstrual hygiene.

### VIII. Studies Related To Practice On Menstrual Hygiene:

Omidvar (2010) had conducted a cross sectional study on factors influencing hygienic practices during menses among girls from south India on 350 students. This study researcher recruited educational institution from a major city in south India.

Demographic, menstrual history and hygiene questionnaires were used. Descriptive statistics, chi-square and fisher's exact tests were used for analysis. Research finding reveal the findings that disposable pads

were used by two third of the selected girls (68.9%). Frequency of changing pads was 2-3 times a day by 78.3% girls. Socioeconomic status (SES) of the selected girls and their age influenced choice of napkin/pads and other practices such as storage place of napkins: change during night and during school or college hours and personal hygiene. Older girls had better hygienic practices than the younger ones. 76% of the participants desired for more information regarding menstruation and hygienic practices.

Subash et al, (2010) A community based cross sectional study was conducted in saoner Nagpur district. 387 girls of the 8th and 9th standards were purposively selected for the study. A pre designed, pre tested structure questionnaire was used in the study. The data collection technique was a personal interview of the study subjects. End result of this study was proved a majority of them had knowledge about the use of sanitary pads. Sanitary pads were used by 49.35% of the selected girls. The practice of the use of old clothes was reported in 45.74% of the subjects. Satisfactory cleaning of the external genitalia was practised by 33.85% of the girls. Three forth of the study girls practised various restrictions during menstruation. The study revealed that among the adolescent school girls in both the urban and rural areas, the knowledge on menstruation is poor and the practices are often not optimal for proper hygiene. Menstrual hygiene is an issue needs to be addressed at all levels. A variety of factors are known to affect menstrual behaviours, the most influential ones being economic status and residential status (urban and rural). Awareness regarding the need for information on healthy menstrual practices is very important. It is essential to design a mechanism to address and for the access of healthy menstrual practices.

Sangeeta Kansal (2011) had conducted a community-based cross-sectional study using a mix method approach (qualitative and quantitative) among 650 adolescent girls in the field practice area of Rural Health and Training Centre, Chiraigaon block of district Varanasi between . Pre tested, semi structured interview schedule was used. Data were analyzed statistically by using Statistical Package for Social Sciences (SPSS) software. Only 31% respondents were using sanitary pads during menstruation. Self-reported reproductive tract infection was observed more in respondents not maintaining hygienic practices (6.6%) as compared to those maintaining hygiene (2.6%). In the present study concluded that, the role of teacher was found negligible in imparting awareness on various issues related to menstruation. More than two-third were still using old clothes and about one-fifth of them were reusing it. Logistic regression analysis also shows that respondents, with less education and with illiterate mothers were more likely to do unhygienic practices. It has been observed that respondents doing hygienic practices during menstruation were less prone to reproductive tract infection. Therefore, there is a strong need for the provision of comprehensive family life education for the parents also.

Singh Amit Kum et al, (2013) had conducted cross sectional community based study was carried out by house to house survey in 20 villages of Khirshu block, Pauri Garwal Uttarakhand, finally 200 adolescent girls in the age group of 11 to 19 years from 10 villages 20 from each are selected at randomly. Specially designed structured self administered pre tested questionnaire was used for data collection process. The researcher observed that 46.5% girls did not have good feelings regarding menstruation, the menstrual practices and various that come with it. All girls (100%) reported that during menstruation they do not visit holy places and 5% do not take bath during menstruation. 16% girls did not attend social activities. 82.5% girls reported that they are kept in isolation at home during menses. Only 38% girls used sanitary pads during menstruation and 62% girls used cloth pieces, type of clothes used was reported as cotton (69.4%) and other cloth pieces (30.6%), (41.9%) girls reported three times a day. (76.6%) washed their cloth only with water and 23.4% washed with soap and water. For drying the cloths, 63.7% girls dried their cloth in corner of the house. Regarding the method of disposal of the used material 18.5% after 4-6 months, and 51.6% after 6-12 months and 25% girls throw on road side. Similar the 43% of the girls buried their absorbent materials followed by 35% threw with other wastes and 19% burnt the materials. Poor menstrual hygiene is one of the major reasons for the high prevalence of urinary tract infections. Therefore, the girls should be educated about the significance of menstruation, development of secondary sexual characteristics, and proper hygienic practices with selection of disposable sanitary menstrual absorbent.

Diksha Sapkota (2013), A descriptive study was done among sixty-one female adolescents of Shree Himali Secondary School, Panchkanya, Sunsari, where data were collected from the adolescents meeting the inclusion criteria It was found that 36.1% correctly reported about menstruation where most common informant was mother (39.3%). Dysmenorrhoea was the commonest problem faced during menstruation (78.7%) followed by back pain and excessive blood loss. More than half of respondents (54.1%) used sanitary pads and frequency of changing pads twice a day was highest (50.8%). Initial reaction was of fear/apprehension at menarche by 36.1% of girls whereas 44.3% perceived it as an expectant process. Girls still faced different types of restrictions like not being allowed to visit holy places, not being allowed to cook and touch male family member.

Haftu Berhe et al, (2013) Institution based cross sectional study was conducted in secondary school in Mekelle. Using multi stage sampling method. Four hundred seventy seven students were participated in the study. A standardized, self- administered questionnaire was prepared in local language used for data collection.

Data was entered and analyzed using SPSS version 16.0 software. The age range of the participants was 10-19 years with mean age of 15.6 +0.98. Only 189(40.8%) of them used to change sanitary materials satisfactorily. Those who were between the age group of 10-12 when starting menarche had better menstrual hygienic practice as compared to those who were between 16-18 years. High rate of poor hygienic practice was identified in this study and absenteeism because of menstrual problems was the major challenge. Most of them practiced poorly or changing sanitary materials inadequately, there is a risk of urinary tract infection. The disposal technique for used sanitary materials was practiced improperly like using open field for disposal. First menarche during early age (10-12years) was associated with menstrualhygienic practice.

Balaji Arumugam et al, (2013) This study was done as a community based – cross-sectional study at the outskirts of Chennai, among the randomly selected females in the reproductive age (15-44) group from both rural and urban field practice areas using questionnaire and interview method. The results were expressed in percentages, and appropriate test of significance was performed. Approximately, a total of 212 from the rural area and 206 from urban slum were randomly selected for the study of which 9% (19) from rural and 5.3% (11) not aware of sanitary pads that can be used during menstruation. Amongthe study participants, 42.5% (90) of rural and 40.3% (83) of urban were unaware from which organ menstruation is from. The prevalence of better menstrual hygienic practices using the menstrual hygiene indexwas found to be 63.6% (131) in urban slum and 35% (75) in a rural area which was found to be statistically significant ( $P < 0.0001$ ). Study has revealed that most of the females are still unaware menstrual hygienic practices which suggest that appropriate health promotive measures to be implemented for their reproductive well-being.

Hema Priya et al, (2014) A community based descriptive cross sectional study was conducted in rural field practicing area of MGMCRI, Puducherry 528 adolescent girls were included by complete enumeration. Unmarried adolescent girls who attained menarche and belonging to 10-19 years of completed age, Girls residing to the selected rural commune for more than one year who are all included in this study Data were analysed by using Statistical Package for the Social Sciences software (SPSS) version 16.0. Results were described in percentage and proportions and displayed in appropriate tables and figures. For eliciting association between variables Chi-square test was used Majority (89.2%) of the adolescent girls was using sanitary pads, fresh and reusable cloths were used by 6.6% and 4.2%, respectively. 65.3% girls changed their soaked absorbent 2-5 times in a day. Majority (60.8%) of the girls disposed their used absorbent by burying or burning. 67.9% girls were washing genitalia during micturition. 54.4% used soap and water for hand cleaning purpose and 1.4% used ash & mud etc. Even though sanitary pad users were high, unhygienic practices were noticed, so more emphasize is needed to be given on awareness of menstrual hygiene practices among adolescent girls.

Rajsinh (2014) had conducted a community based cross sectional study among adolescent girls residing in slum area of Karad city. A total of 230 girls were interviewed by using pre- tested structured questionnaire, elicits information relating to demographic features, menarche age and menstrual hygiene practices. Data were statistically analyzed into frequency percentage distribution and chi-square test was used to determine the statistical association. The mean age at menarche was 12.8 years with maximum, 70% had history of regular menstrual cycle. Out of 230 girls, 12.6% were practiced disposable adsorbent sanitary napkins whereas 87.3% practiced reusable cloth materials. Higher percentages of girls, 77.3% were practiced an insanitary method of disposal of materials and practices of personal hygiene including bath during menstruation and cleaning of external genital parts followed by 95.2% girls respectively. Advanced age and education of girls, mother's education and economic class are significantly associated with use of sanitary napkins ( $p < 0.05$ ). This study showed overall poor practices of menstrual hygiene in slum adolescent girls. Formal as well as informal channels of communication need to be emphasized for the delivery of information pertained to menstrual hygiene through organized community efforts. Institutions and organizations at community level should be strengthened for effective delivery of health and nutrition care services for overall better health of community beneficiaries.

Padma Das (2015, June 30) had conducted a case control study in odisha. 486 samples are selected in the age group between 18-45 years who included in the inclusion criteria. Socioeconomic status, clinical symptoms reproductive history, water and sanitation practices were obtained by standardized questionnaire .This study provides support for the hypothesis that some menstrual hygiene practices can increase the risk of urogenital symptoms. Women who used reusable absorbent pads where more likely to have symptoms of urogenital disease than women using disposable pads.

## **IX. Studies Related To Effectiveness Of Structured Teaching Programme On Menstruation And Menstrual Hygiene:**

Gouri Kumari Padhy (2010) had done a interventional study among X standard students of Sarojini High School, Ankuli, Berhampur to assess the effectiveness of planned teaching programme on reproductive health. The study sample consisted of 144 adolescent girls. Baseline data regarding knowledge about

reproductive health was collected from students in pretest period with privacy and confidentiality, intervention was done by giving health education regarding adolescent nutrition, reproductive health and personal hygiene, adolescent sexuality, high risk behaviors and adverse effects of premarital sex. Post intervention knowledge assessment was done again by using same questionnaire. A 24-item structured questionnaire was used as a tool for data collection. The students had a good knowledge regarding ovulation, the knowledge regarding age at first menses and genital hygiene was poor at pre test. Almost half the students were aware of the term ovulation. Their knowledge regarding menstruation and menstrual hygiene improved significantly from 36.1% to 79.1% respectively after intervention. There was significant improvement in knowledge in all aspects related to nutrition during post test period. This study concluded that imparting health education on reproductive health among adolescent girls is quite effective if done in a well organized and scientific way. It creates an increased awareness among them, which can empower them to take care of their own health as well as protect themselves from possible reproductive health problems. An integrated and collective approach by teachers, nurses, health personnel, parent and Govt. should be carried out for a holistic development of adolescent health. It ensures a sound mind in a sound body which can enable the individual having a safe mother hood in future.

Mallesappa (2011) the main objective of this interventional to determine the effectiveness of a reproductive health education intervention programme in improving the knowledge of adolescent girls aged between 14-19 years in Kuppam mandal, chittoor district, Andhra Pradesh. The study was carried out over a period of 8 months. A total of 656 girls in the age group of 14-19 years were randomly selected from 3 high schools (class X) & 3 intermediate colleges(class XI & XII) in kuppam mandal, chittoor district, Andhra Pradesh. The reproductive health education package developed in consultation with parents, teachers & adolescents was used to educate the girls. A 50 item structured questionnaire was used to test the knowledge of all the participants about the reproductive health before & after the education session. The data was tabulated & analyzed using SPSS version 11.0 for windows. Findings were described in terms of proportions & percentages, chi square test was used to test the effect of intervention. A health education programme was organized in 6 sessions, each session lasting for two hours on 6 consecutive days. Programme included a didactic lecture by one of the educators followed by interactive sessions. Audio visual aids such as power point presentation using LCD projector, video films, charts, posters were used. The topics included were on anatomy and physiology of male and female reproductive system, physical changes during and after puberty, menstrual cycle, pregnancy, antenatal care, various methods of contraception. The lectures were followed by interactive session with the students. The result of the study revealed that the demographic profile of the study population of the 656 students 554 students were in the age group of 16-17 years with a mean of 16.68 years. The students' knowledge about puberty changes improved significantly after intervention ( $p < 0.005$ ). Students had a good knowledge regarding age at first menses and maintaining hygiene during menses at pre-test. About 49.5% of the students were not aware about ovulation. Their knowledge about ovulation improved from 49.5% to 96.1% ( $p < 0.001$ ), and regarding menstruation & menstrual hygiene, improved significantly from 78.3% to 96.4% and from 92.5% to 98.9% respectively after intervention ( $p < 0.005$ ). Remarkable improvement was seen with relation to knowledge of participants about puberty, menstrual cycle, pregnancy, contraception and also transmission and prevention of sexually transmitted disease. This study suggest that reproductive health education by health professionals can improve the knowledge and perceptions of adolescent girls especially in rural areas. Such educational intervention programs must be given due importance, which will help the adolescent girls to take care of their own health and protect themselves from the risk of sexually transmitted disease etc.

Jyotsna Bhudhagaonkar, Mahadeo Shinde (2012) A Quasi Experimental research approach was used for the study. One group pre test- post test research design was used. Present study was conducted at one district of Maharashtra state.

The population selected for the study consist of all adolescent girls who were studying in 8th and 9th standard and who attained menarche in rural schools. The samples size consist 100 adolescent girls from selected schools of one of the districts from Maharashtra. Purposive Sampling technique was used for this study. Finding of the study were 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. teaching the samples clarified their doubts about the fact. In pre test only 22% of samples respond that the reason of menstruation is the influence of 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. Finally this study explained 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.

Reem Bassiouny El-Lassy and Abeer Abd El-Aziz Madian (2013) Quasi experimental study was conducted on 97 adolescents at secondary technical nursing school of Damanhour City, El-Behara Governorate, Egypt. A designed questionnaire was administered and later health education regarding menstruation and healthy menstrual practices was imparted to girls. Post-test was done after 3 months to assess the impact of the program. After the intervention observed that 41.2% gained their knowledge from their friends. Menstrual practices among them was found to be fair before the program, while in the post-test, there were a significant differences in student's level of knowledge and practices. There was a negative correlation between mothers' education and students' practices. The level of students' knowledge regarding menstruation and menstrual hygiene practices improved after the program. Therefore, it is recommended to implement health educational programs about menstrual hygiene to preparatory and secondary school students to improve their menstrual knowledge, beliefs and practices.

## **X. Methodology**

Research methodology provides a brief description of the method adopted by the investigator in this study. This includes research approach, research design, the setting, the population, the sample, sample size, sampling technique, criteria for sample selection, description of the tools, validity, reliability, pilot study, data gathering process, plan for data analysis, and the protection of human rights.

### **Research Approach:**

Quantitative approach was used for the present study. According to Polit and Beck (2010) Quasi experimental research design refers to a design for an intervention study in which subjects are non randomly assigned to treatment condition, also called a non randomized trial, or a controlled trial without randomization. The present study is aimed at evaluating the effectiveness of video assisted teaching programme on knowledge and practice of adolescent girls regarding menstrual health.

### **Research Design:**

As the study had a quasi experimental research design, Non equivalent control group. Pre-test post-test design was used to assess the effectiveness of video assisted teaching programme on knowledge and practice of adolescent girls regarding menstrual health. Non-equivalent control group pre-test post test design involves comparison of two groups of participants that was not created through random assignment, from which data are collected before and after implementing an intervention. (Polit & Beck, 2011)

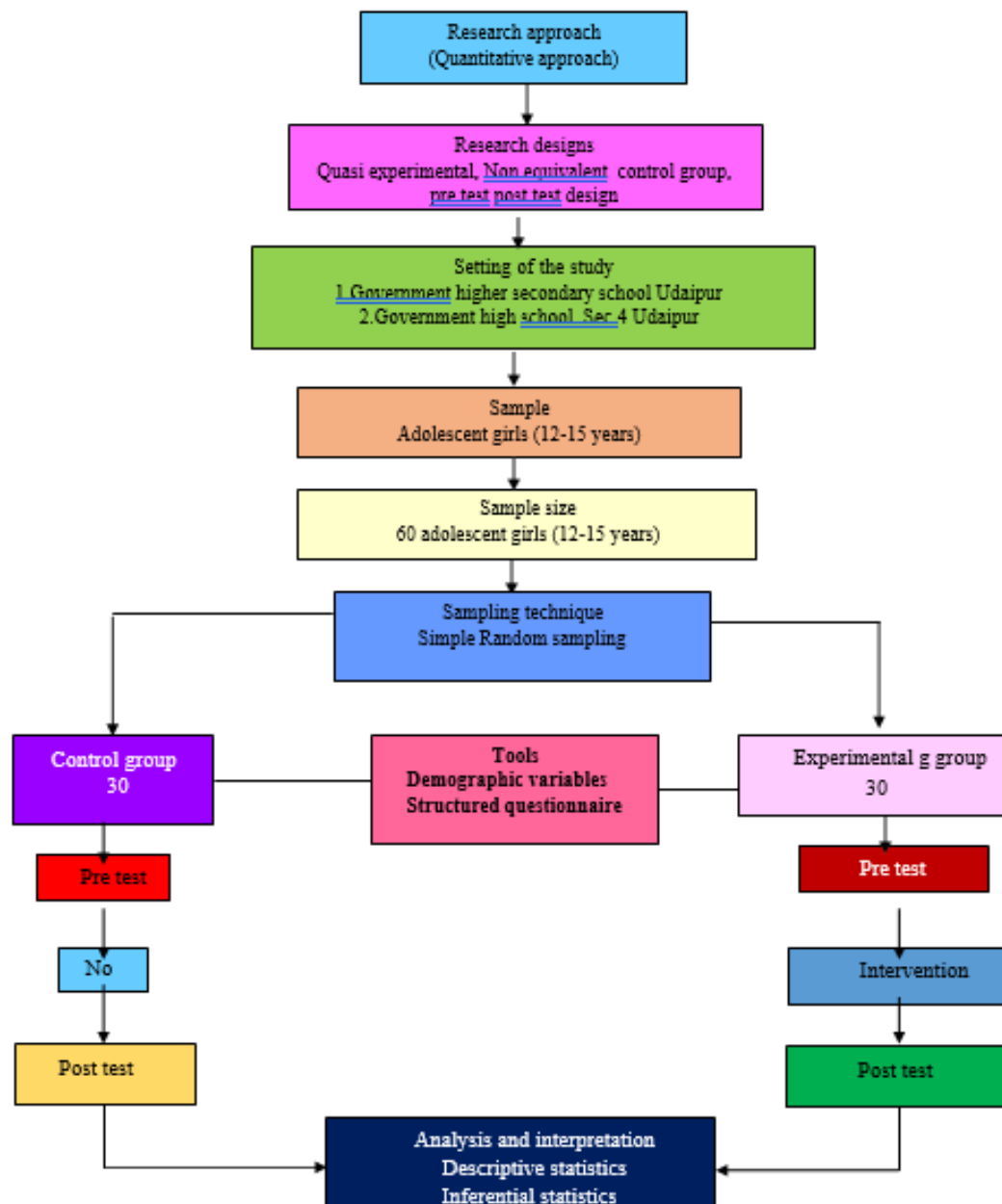


Fig.No:2 Schematic Representation Of Research Methodology

| Group        | <u>Pre test Day</u><br>(14 <sup>th</sup> day of menstruation.) | Intervention day<br>(15 <sup>th</sup> of menstruation) | Post test Day<br>(4 <sup>th</sup> day of Next menstrual cycle) |
|--------------|--|--|--|
| Experimental | O <sub>k1</sub> O <sub>p1</sub>                                | X  | O <sub>k2</sub> O <sub>p2</sub>                                |
| Control      | O <sub>k3</sub> O <sub>p3</sub>                                |  | O <sub>k4</sub> O <sub>p4</sub>                                |

**Keys:**

- O<sub>k1</sub> - Pre test level of knowledge in experimental group
- O<sub>p1</sub> - Pre test level of practice in experimental group
- X - Administration of video assisted teaching programme.
- O<sub>k2</sub> - Post test level of knowledge in experimental group
- O<sub>p2</sub> - Post test level of practice in experimental group
- O<sub>k3</sub> - Pre test level of knowledge in control group
- O<sub>p3</sub> - Pre test level of practice in control group
- O<sub>k4</sub> - Post test level of knowledge in control group
- O<sub>p4</sub> - Post test level of practice in control group

**Variables:****Independent Variables:**

Video assisted teaching programme on menstrual health.

**Dependent Variables:**

Knowledge & practice regarding menstrual health.

**Setting Of The Study:**

The present study was conducted in Govt. Higher Secondary school Sec.4 Udaipur and Govt. High school in Udaipur. The experimental group was selected from Govt. Higher Secondary School Sec.4 Udaipur and control group was selected from Govt. High school Udaipur.

Govt. Higher Secondary School Sec.4

Govt. Higher Secondary School Sec.4 is 10 kilo meters away from Saraswati College of Nursing Udaipur. Total strength of the school is 895. Population for the study was selected from 7th, 8th & 9th standard girls. In that 114 students were boys and 162 students were girls. There were 20-25 girls were in each section of 7th, 8th & 9th standard.

Govt. High school Udaipur

The school is 8 kilo meters away from Saraswati college of Nursing Udaipur. Total strength of the school is 535. Population for the study was selected from 7th, 8th & 9th standard girls. In that 93 students were boys and 118 student were girls. There were 15-20 girls were in each section of 7th, 8th & 9th standard.

**Population:**

Target population of the study was adolescent girls (12-15 yrs) who are all studying in Govt. Higher Secondary School Sec.4 Udaipur and Govt. High school Udaipur.

**Samples:**

The sample of the present study were adolescent girls who full fill the inclusion criteria.



**Sample Size:**

The sample size of the study was 60. In which 30 samples were in experimental group & 30 samples were in control group.

**Sampling Technique:****Step I:**

Adolescent girls were chosen by adopting simple random sampling technique based on the eligible criteria. Random sampling technique refers to the selection of the mostly readily available participants in the study. Totally 60 adolescent girls were chosen from the Rural govt schools at Udaipur. Structured knowledge and practice questionnaire were prepared with 4 option in order to assess their level of knowledge and practice on menstrual health. Post test was administered followed by video assisted teaching programme on menstrual health. Post test data were collected from adolescent girls. From the post test level of knowledge score based on adequate (76- 100%) moderately adequate (51-75%) and inadequate (50% and below).

**Step II**

Researcher has selected 2 rural govt schools for the study. Respectively Govt. higher secondary school Sec.4 udaipur allotted for the experimental group and govt high school udaipur allotted for the control group.

**Step III:**

Adolescent girls who fulfilled the inclusion criteria from each school were selected by using demographic variables.

**Govt. Higher Secondary School Sec.4 Udaipur**

Out of 895 students was studied in govt higher secondary school, in which 276 students were studied 7th, 8th & 9th standard. In that 114 students are boys and 162 students are girls. Among them 87 adolescent girls were excluded from the study after inclusion criteria, 16 adolescent girls are not attained menarche, 40 girls are not having regular menstrual cycle and 31 girls were not in ovulatory phase. Finally it was found that 75 adolescent girls were eligible for the study.

Simple random sampling technique (lottery method) was adopted to choose the required sample size from out of 75 eligible adolescent girls. Thus the required sample of 30 adolescent girls were selected for experimental group.

**Govt. High school Udaipur.**

Out of 535 students was studied in govt high school in sakkimanlam, in which 211 students are studied 7th, 8th & 9th standard. In that 93 students are boys and 118 students are girls. Among them 65 adolescent girls were excluded from the study after inclusion criteria, 22 adolescent girls are not attained menarche, 13 girls are not having regular menstrual cycle and 30 girls were not in ovulatory phase. Finally it was found that 53 adolescent girls were eligible for the study.

Simple random sampling technique (lottery method) was adopted to choose the required sample size from out of 53 eligible adolescent girls. Thus the required sample of 30 adolescent girls were selected for control group.

**Criteria For Sample Selection:**

The samples were selected based on following criteria.

**Inclusion Criteria:**

- ☐ Adolescent girls who are willing to participate in the study.
- ☐ Adolescent girls who can read and understand Hindi / English.
- ☐ Adolescence girls who had attained menarche.
- ☐ Adolescence girls who between the age group of 12-15 years.
- ☐ Adolescence girls who are in their 14th day of her menstruation.

**Exclusion Criteria:**

- ☐ Adolescent girls who are not available at the time of data collection
- ☐ Adolescent girls who didn't have good auditory or listening capacity

**Development Of Intervention:**

The protocol was developed for video assisted teaching programme for improving the knowledge and change in practices related to menstrual health among adolescent girls.

### Video Assisted Teaching Programme:( VATP)

Teaching on knowledge and practice regarding Menstrual health with the help of video clip for better understanding of the adolescent girls.

#### Content of VATP:

- ☐ Anatomy of female reproductive system
- ☐ Internal and external structure of female reproductive system
- ☐ Menstrual cycle
- ☐ Phases of menstrual cycle
- ☐ Puberty and Physiological changes during puberty
- ☐ Menstrual hygiene
- ☐ Perineal hygiene
- ☐ Use and disposal of sanitary napkins
- ☐ Bowel and bladder care
- ☐ Management of discomfort during menstruation

### Research Tool And Techniques

The data collection tool consist of the following

Tool – I-Demographic data

Tool –II -Structured questionnaire consist of Part I & Part II

Part – I -Multiple choice question to assess the knowledge on Menstrual Health

Part –II -Multiple choice question to assess the practice on Menstrual Health

### Description Of The Tools:

Tool - I:

Tool I consist of demographic data which includes age in years, address, age at menarche, educational status of the students, educational status of parents, occupation of parents, type of family, family monthly income, religion, any prior information regarding menarche.

Tool - II:

Structured questionnaire on menstrual health:

PART – I: Multiple choice questionnaire to assess the knowledge on menstrual health

It consists of 20 multiple-choice questions to assess the knowledge of adolescent girls about menstrual health. Each multiple choice question had four alternatives. For every correct response in each question score '1' was given and for wrong answer score '0'. The total score of structured questionnaire was 20. The resulting scores were arranged as follows,

|                               |       |             |
|-------------------------------|-------|-------------|
| Adequate knowledge            | 15-20 | 76 – 100%   |
| Moderately adequate knowledge | 10-15 | 51 – 75%    |
| Inadequate knowledge          | 0 -10 | 50% & below |

Part - II: Multiple choice questionnaires to assess the practice on menstrual health

It comprised of items related to menstrual health. It consists of 10 multiple choice questions to assess the practice of adolescent girls about menstrual health. Each multiple choice questionnaire has four alternatives each, in which one was a correct answer. For every correct response score '1' was given and for wrong answer score '0'. The total score of practice questionnaire was 10. The resulting scores were arranged as follows,

|                     |      |             |
|---------------------|------|-------------|
| Adequate            | 7-10 | 76 – 100%   |
| Moderately adequate | 5-7  | 51 – 75%    |
| Inadequate          | 0-5  | 50% & below |

### Testing Of The Tools:

Validity:

To evaluate the validity of the tool. The tool was validated by 5 experts, 3 experts from the field of maternity nursing, two doctor specialized in obstetrics and gynaecology. Based on the expert's suggestions only the tool got its final form.

**Reliability:**

The reliability of an instrument is the accuracy what it intended to measure. To check the reliability of knowledge and practice test and re test method was used. The reliability was concluded by Karl Pearson's correlation coefficient. The reliability, 'r' value for knowledge is 0.9 and for practice the value is 0.8 which shows the tool is highly reliable.

**Pilot Study:**

Pilot study was conducted in Govt. High School Lakadwasudaipur to test feasibility, practicability, relevance of the study and to plan for data analysis.

Formal administrative approval was obtained from head of the institution. 10 adolescent girls were chosen for the pilot study was conducted in the manner in which the final study would be done. Pilot study samples were excluded from the main study.

**Data Collection Procedure:**

The data collection procedure was done for 5 weeks. The permission was obtained the authorities concerned from the school before the pilot study and actual data collection was started. The nature of the study was explained to the adolescent girls and oral consent was obtained.

During the first day of first week (14th day of ovulatory phase) pre test was conducted in the experimental group by using structured knowledge and practice questionnaire. On the second day (15th day of ovulation period) of the first week 30 minutes of video assisted teaching programme was given to the experimental group in in class room. The second week pre test was conducted in the control group by using structured knowledge and practice questionnaire. No video assisted teaching was given to the control group. On 4th week post test was conducted in the experimental group. On 5th week post test was conducted in the control group. Entire data collection procedure was done in morning time between 10.30am to 11.30am.

**Plan For Data Analysis:**

After the data collection data was organized, tabulated, summarized and analyzed. The data then analyzed according to the objectives of the study by using descriptive and inferential statistics.

**Descriptive statistics:**

Frequency, percentage and mean were used for the analysis of pre test and post test assessment.

**Inferential statistics:**

Paired 't' test used to determine the effect of video assisted teaching in pre test and post test.

Correlation co-efficient used to find the relation between knowledge and practice of Menstrual Health.

Chi square was used to determine the association between selected demographic variables.

**Protection Of The Human Rights:**

Oral consent was obtained from the study samples before starting data collection. Assurance was given and confidentiality was maintained. The adolescent girls who were participated in the study were explained that they have the rights to withdraw from the study at any point of time. There was absence of physical and psychological strain to the adolescent girls who were participated in the study

**Summary:**

This chapter has dealt with research approach, research design, the setting, the population, the sample, sample size, sampling technique, and criteria for sample selection, description of the tool, validity, reliability, pilot study, and data gathering process, plan for data analysis and the protection of human rights.

**XI. Analysis And Interpretation Of Data**

This chapter deals with the description of the participants, classification, analysis and interpretation of data collected from a selected group of adolescent girls who had attained menarche, to evaluate the objectives of the study. The data collected were tabulated, analyzed, and presented based on the objectives and the hypothesis using inferential and descriptive statistics as follows.

**Section I:**

This provides the description of participants in terms of age in years, age of menarche, educational status of the student. Educational status of the parents, occupation of the parents, type of family, family monthly income, religion, any prior information regarding menarche.

## Section II:

It deals with the pretest and posttest knowledge assessment of adolescent girls in the experimental group.

## Section III:

It deals with the pretest and posttest practices assessment of adolescent girls in the experimental group.

## Section IV:

It deals with the pretest and posttest knowledge and practices assessment of adolescent girls in the control group

## Section V:

It explains about comparison of mean posttest level of knowledge of adolescent girls in the experimental and control group.

## Section VI:

It explains about comparison of mean posttest level of practice of adolescent girls in the experimental and control group

## Section VII:

It deals with the relationship between the post test level of knowledge and level of practices of adolescent girls in the experimental group.

## Section VIII:

It explains about the association of pretest level of knowledge and selected demographic variables of adolescent girls in both experimental and control group.

## Section IX:

It deals with the association of pretest level of practices and selected demographic variables of adolescent girls in both experimental and control group.

## Section – I

## Demographic Profile of adolescent girls:

This section deals with the characteristics of adolescent girls in relation to the demographic variables such as age in years, age of menarche, educational status of the student, educational status of the parents, occupation of parents, type of family, family monthly income, religion, any prior information regarding menarche. The distribution of participants is tabulated in the following table.

**Table 1: Frequency and percentage of adolescent girls based on their demographic variables both in experimental and control group.**

| Demographic Variables      | n = 60        |      |                |      |          |      |
|----------------------------|---------------|------|----------------|------|----------|------|
|                            | Control Group |      | Experimental   |      | Total    |      |
|                            | (n = 30)      |      | Group (n = 30) |      | (n = 60) |      |
|                            | f             | %    | f              | %    | f        | %    |
| <b>Age in Years:</b>       |               |      |                |      |          |      |
| • 12 – 13 yrs              | 28            | 93.3 | 28             | 93.3 | 56       | 93.3 |
| • 14 – 15 yrs              | 2             | 6.7  | 2              | 6.7  | 4        | 6.6  |
| <b>Age of Menarche:</b>    |               |      |                |      |          |      |
| • 10 – 12                  | 16            | 53.3 | 23             | 76.7 | 39       | 65   |
| • 13 – 15                  | 14            | 46.7 | 7              | 23.3 | 21       | 35   |
| <b>Educational Status:</b> |               |      |                |      |          |      |
| • 7 <sup>th</sup> std      | 6             | 20   | 6              | 20   | 12       | 20   |
| • 8 <sup>th</sup> std      | 12            | 40   | 8              | 26.6 | 20       | 33.3 |
| • 9 <sup>th</sup> std      | 12            | 40   | 16             | 53.3 | 28       | 46.6 |

| Demographic Variables                            | Control Group<br>(n = 30) |      | Experimental<br>Group (n = 30) |      | Total<br>(n = 60) |      |
|--|---------------------------|------|--------------------------------|------|-------------------|------|
|  | f                         | %    | f                              | %    | F                 | %    |
| <b>Educational Status of the</b>                 |                           |      |                                |      |                   |      |
| <b>Parents:</b>                                  |                           |      |                                |      |                   |      |
| • Illiterate                                     | 10                        | 33.3 | 14                             | 46.7 | 24                | 40   |
| • Elementary                                     | 11                        | 36.7 | 13                             | 43.3 | 24                | 40   |
| • Higher Secondary                               | 9                         | 30   | 2                              | 6.7  | 11                | 18.3 |
| • Graduate                                       | 0                         | 0    | 1                              | 3.3  | 1                 | 1.6  |
| • Post graduate                                  | 0                         | 0    | 0                              | 0    | 0                 | 0    |
| <b>Occupation of Parents:</b>                    |                           |      |                                |      |                   |      |
| • Coolie   | 27                        | 90   | 26                             | 86.7 | 53                | 88.3 |
| • Farmer   | 0                         | 0    | 3                              | 10   | 3                 | 5    |
| • Business                                       | 2                         | 6.7  | 0                              | 0    | 2                 | 3.3  |
| • Others   | 1                         | 3.3  | 1                              | 3.3  | 2                 | 3.3  |
| <b>Type of Family:</b>                           |                           |      |                                |      |                   |      |
| • Nuclear  | 19                        | 63.3 | 21                             | 70   | 40                | 66.6 |
| • Joint  | 11                        | 36.7 | 9                              | 30   | 20                | 33.3 |
| <b>Family Monthly Income:</b>                    |                           |      |                                |      |                   |      |
| • Below Rs.8000                                  | 17                        | 56.7 | 21                             | 70   | 38                | 63.3 |
| • Rs.8001 – Rs.12000                             | 8                         | 26.7 | 7                              | 23.3 | 15                | 25   |
| • Rs.12001 –                                     | 2                         | 6.7  | 1                              | 3.3  | 3                 | 5    |
| Rs.15000   | 3                         | 10   | 1                              | 3.3  | 4                 | 6.6  |
| • Above Rs.15000                                 |                           |      |                                |      |                   |      |
| <b>Religion:</b>                                 |                           |      |                                |      |                   |      |
| • Hindu  | 20                        | 66.7 | 26                             | 86.7 | 46                | 76.6 |
| • Muslim   | 7                         | 23.3 | 1                              | 3.3  | 8                 | 13.3 |
| • Christian                                      | 3                         | 10   | 3                              | 10   | 6                 | 10   |
| <b>Any prior information regarding menarche:</b> |                           |      |                                |      |                   |      |
| • Yes  | 5                         | 16.6 | 6                              | 20   | 11                | 18.3 |
| • No   | 25                        | 83.3 | 24                             | 80   | 49                | 81.6 |

Table 1 predicts that the age in years of 93.3% of adolescent girls in experimental group and 93.3% of adolescent girls in control group were between 12- 13 years.

With regard to age at menarche of the adolescent girls that 76.7% in experimental group and 53.3% of adolescent girls in control group were between 10- 12 years.

With regards to the educational status majority of adolescent girls that is 53.3% in experimental group and 40% in control group had studied in 9th and 8th std.

Regarding educational status of the parents 46.7% in experimental group had illiterate, 36.7% of the parents in control group had elementary education.

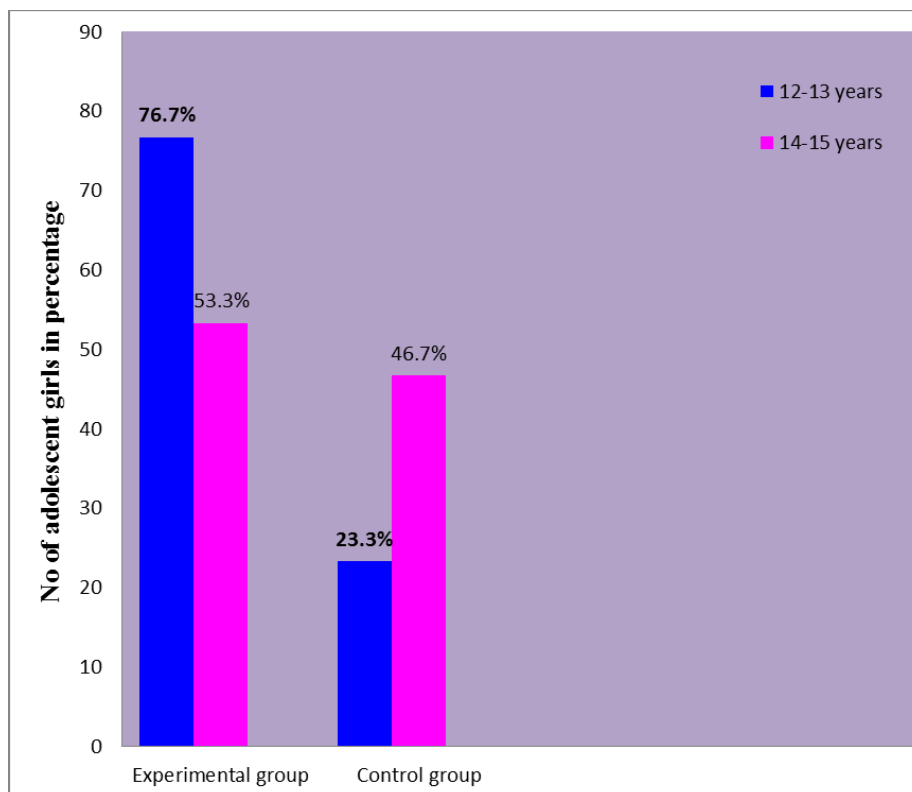
With regards to the occupation of the parents 86.7% in experimental group and 90% parents in control group were coolies.

With regard to the family of the adolescent girls 70% in the experimental group and 63.3% in the control group were nuclear family.

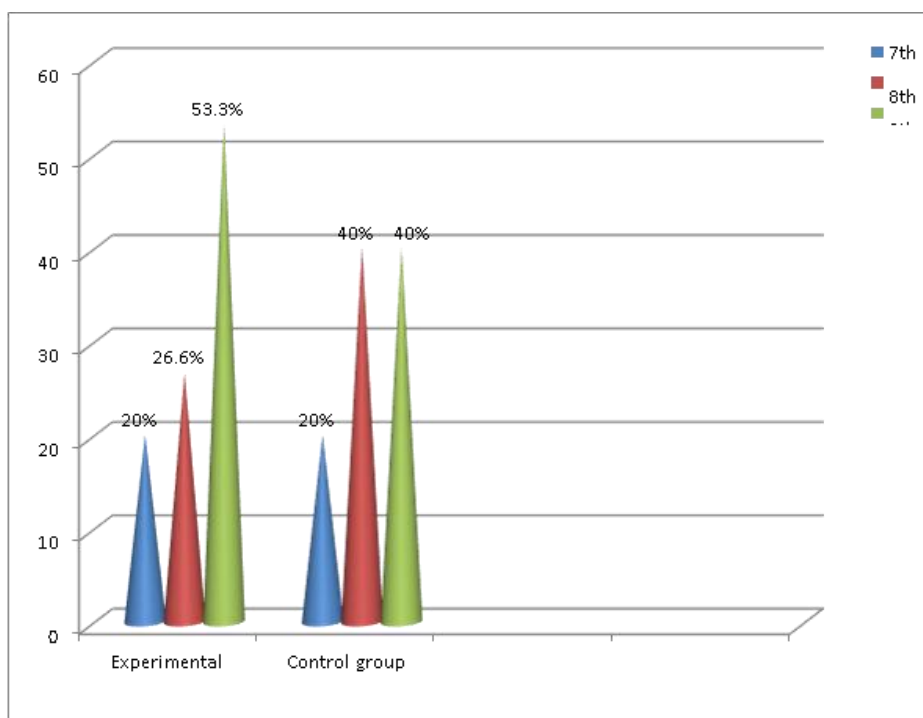
With regards to the family income of the adolescent girls 70% in experimental group and 56.7% adolescent girls family monthly income in control group were being below 8000.

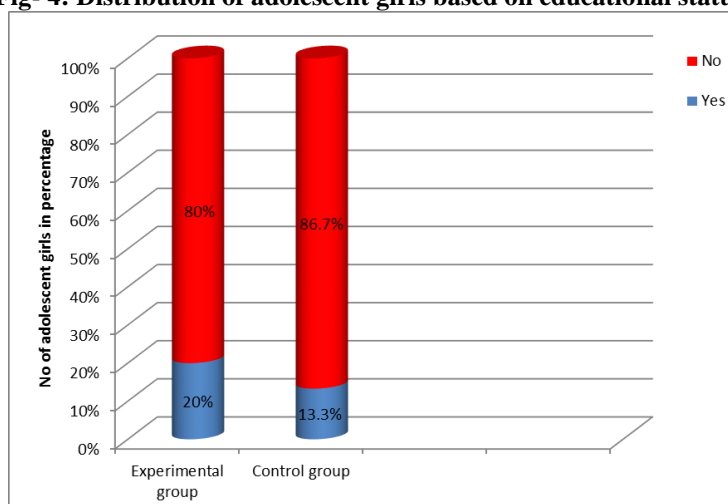
With regard to the religion of the adolescent girls 86.7% in experimental group and 66.7% adolescent girls religion is Hindu in control group.

Any prior information regarding menarche of the adolescent girls depicted that 80% in experimental group and 83.3% of adolescent girls in control group were not aware about prior information regarding menarche.



**Fig- 3: Distribution of adolescent girls based on age at menarche**

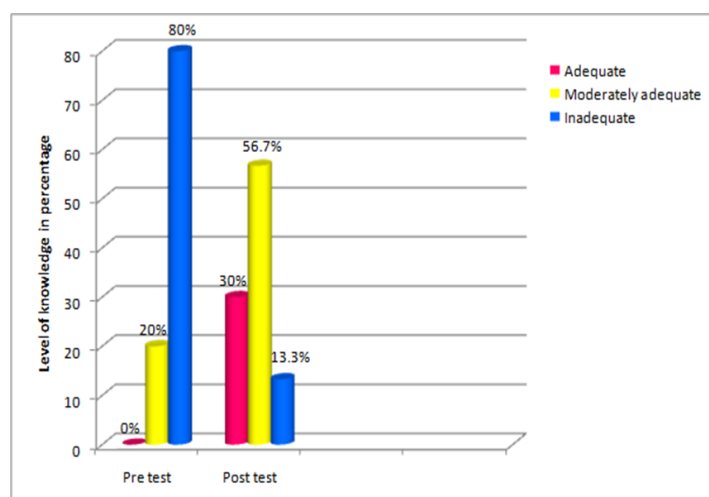


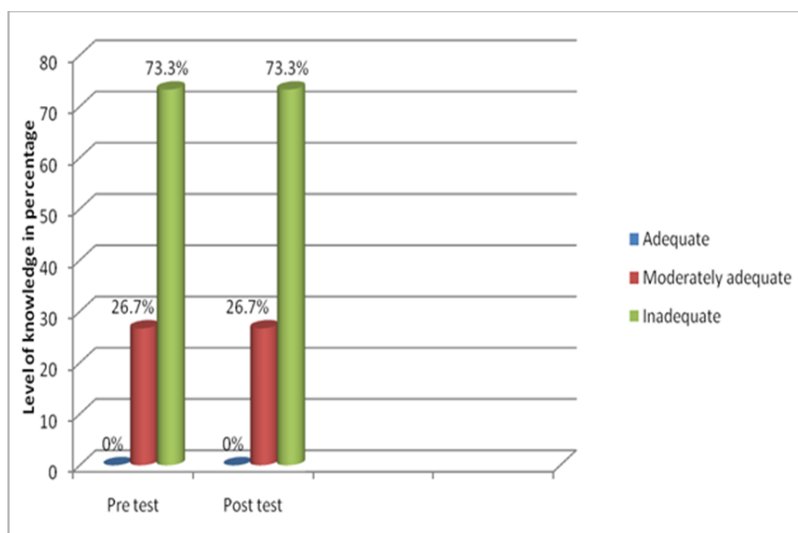
**Fig- 4: Distribution of adolescent girls based on educational status.****Fig- 5: Distribution of adolescent girls based on prior knowledge regarding menarche****Table 2: Distribution of adolescent girls according to the pretest and posttest level of knowledge in experimental and control group.**

| Level of Knowledge  | Experimental Group |    |           |      | Control Group |      |           |      |
|---------------------|--------------------|----|-----------|------|---------------|------|-----------|------|
|                     | Pre test           |    | Post test |      | Pre test      |      | Post test |      |
|                     | f                  | %  | f         | %    | f             | %    | f         | %    |
| Inadequate          | 24                 | 80 | 4         | 13.3 | 22            | 73.3 | 22        | 73.3 |
| Moderately Adequate | 6                  | 20 | 17        | 56.7 | 8             | 26.7 | 8         | 26.7 |
| Adequate            | -                  | -  | 9         | 30   | -             | -    | -         | -    |

The data in the table 2 show that in the pretest only a less number of participants (20%) had moderately adequate knowledge and majority (80%) had inadequate knowledge in experimental group whereas the participants (26.7%) had moderately adequate knowledge and nearly all participants (73.3%) had inadequate knowledge in the control group.

In the posttest (30%) participants had adequate knowledge, more than half (56.7%) had moderate knowledge and less number of participants (13.3%) had inadequate knowledge in experimental group whereas nearly half (26.7%) had moderately adequate knowledge and majority (73.3%) inadequate knowledge in the control group.

**Fig- 6: Distribution of adolescent girls based on pre testpost test level of knowledge in experimental group**



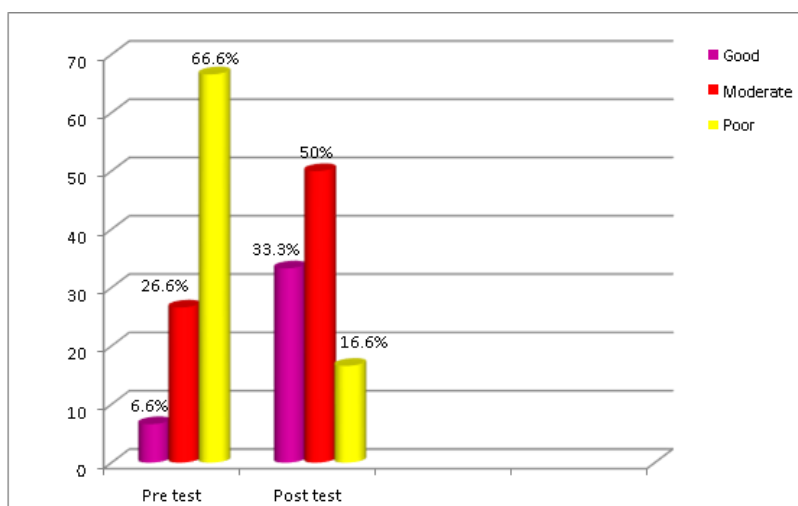
**Fig- 7: Distribution of adolescent girls based on level of pre test and post test level of knowledge in control group**

**Table 3: Distribution of adolescent girls according to the pre-test and post-test level of practices in experimental group and control group.**  
n = 60

| Self-Reported Practices | Experimental Group |      |           |      | Control Group |      |           |      |
|-------------------------|--------------------|------|-----------|------|---------------|------|-----------|------|
|                         | Pre test           |      | Post test |      | Pre test      |      | Post test |      |
|                         | f                  | %    | f         | %    | f             | %    | F         | %    |
| Good                    | 2                  | 6.6  | 10        | 33.3 | 0             | 0    | 1         | 3.3  |
| Moderate                | 8                  | 26.6 | 15        | 50   | 8             | 26.6 | 10        | 33.3 |
| Poor                    | 20                 | 66.6 | 5         | 16.6 | 22            | 73.3 | 19        | 63.3 |

The data in the table 3 show that in the pretest majority (26.6%) participants had moderate practice and less (66.6%) had a poor practice in the experimental group where as nearly half (26.6%) had a moderate practice and more than half (73.3%) had a poor practice in the control group.

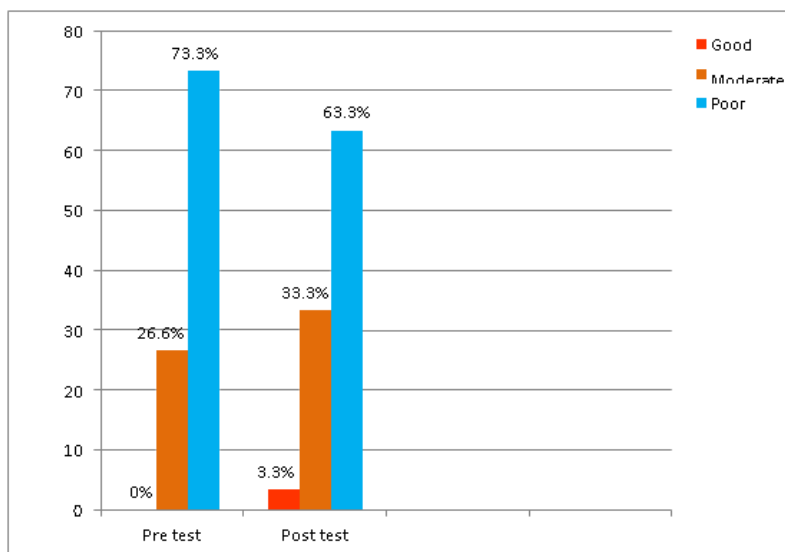
In the posttest (33.3%) participants had a good practice, half of the participants (50%) had a moderate practice in the experimental group whereas the least number (3.33%) had a good practice, nearly half of the participants (33.3%) had a moderate practice and more than half of the participants (63.3%) had an inadequate practice in the control group.





| Self-Reported Practices | Experimental Group |      |           |      | Control Group |      |           |      |
|-------------------------|--------------------|------|-----------|------|---------------|------|-----------|------|
|                         | Pre test           |      | Post test |      | Pre test      |      | Post test |      |
|                         | f                  | %    | f         | %    | f             | %    | F         | %    |
| Good                    | 2                  | 6.6  | 10        | 33.3 | 0             | 0    | 1         | 3.3  |
| Moderate                | 8                  | 26.6 | 15        | 50   | 8             | 26.6 | 10        | 33.3 |
| Poor                    | 20                 | 66.6 | 5         | 16.6 | 22            | 73.3 | 19        | 63.3 |

**Fig- 8: Distribution of adolescent girls based on the pretest posttest level of practices in experimental group**



**Fig- 9: Distribution of sample based on pre test and post test level of practices in control groups**

## SECTION – II

**Table 4: Comparison of mean pretest knowledge score and mean posttest knowledge score of adolescent girls in experimental group.**

| n = 60    |    |       |      |     |           |
|-----------|----|-------|------|-----|-----------|
| Test      | n  | Mean  | M.D  | SD  | 't' Value |
| Pre test  | 30 | 5.8   | 6.33 | 2.6 | 10.77***  |
| Post test | 30 | 12.13 |      | 3   |           |

\* Highly significant  $P < 0.001$

To find out if there is difference between the pretest level of knowledge and post test level of knowledge of adolescent girls, the null hypothesis was stated as follows.

H01:

The mean posttest knowledge score of adolescent girls in experimental group who had received video assisted teaching programme related to menstrual health will not be significantly higher than their mean pretest knowledge score.

Table 4 predicts that the mean post test knowledge score of the adolescent girls (12.13) is higher than their mean pretest knowledge score (5.8). The obtained 't' value at df (6.33) is (10.77) which is highly significant at 0.001 level. Since the obtained 't' value is higher than the table value, the researcher rejects the null hypothesis and accepts the research hypothesis.

The finding shows that the video assisted teaching programme has a significant effect in increasing the level of knowledge of adolescent girls regarding menstrual health.

## SECTION – III

**Table 5: Comparison of mean pre test practices score and means post test practices score of adolescent girls in experimental group.**

| n = 60          |    |      |     |      |           |
|-----------------|----|------|-----|------|-----------|
| Test            | n  | Mean | M.D | SD   | 't' Value |
| <u>Pre test</u> | 30 | 3.6  | 3.0 | 1.73 | 8.25***   |
| Post test       | 30 | 6.6  |     | 1.54 |           |

**\* Highly significant 0.001\*\*\***

To find out if there is any difference between the pretest level of practices and post test level of practices of adolescent girls, the null hypothesis was stated as follows.

H02:

The mean posttest practice score of adolescent girls in experimental group who had received video assisted teaching programme related to menstrual health will not be significantly higher than there mean pretest practices score.

Table 5 explains that the mean posttest practice score of the adolescent girls (6.6) is higher than their mean pretest practice score (3.6). The obtained 't' value at df (3.0) is 8.25 which is highly significant at 0.001 level. Since the obtained 't' value is higher than the table value, the researcher rejects the null hypothesis and accepts the research hypothesis.

The finding shows that the video assisted teaching programme has a significant effect in increasing the level of practices of adolescent girls regarding the menstrual health.

## SECTION – IV

**Table 6: Comparison of mean pre test knowledge score and mean post test knowledge score of adolescent girls in control group.**

| n = 60          |      |      |           |
|-----------------|------|------|-----------|
| Test            | Mean | SD   | 't' Value |
| <u>Pre test</u> | 5.9  | 2.49 | 0.149     |
| Post test       | 5.83 | 2.04 |           |

**\* Significant at 0.05 levels**

Table 6 explains that the mean posttest knowledge score of the adolescent girls (5.83) is higher than their mean pre test knowledge score (5.9). The obtained 't' value at df (0.06) is 0.149 which is not significant at 0.05 level. Since the obtained 't' value. It illustrates that there is no improvement in level of knowledge in control group regarding the menstrual health.

**Table 7: Comparison of mean pre test practices score and mean post test practices score of adolescent girls in control group.**

| n = 60    |      |      |           |
|-----------|------|------|-----------|
| Test      | Mean | SD   | 't' Value |
| Pre test  | 3.2  | 1.58 | 0.93      |
| Post test | 3.6  | 1.73 |           |

**\* Significant at 0.06 levels**

Table 7 explains that the mean posttest practice score of the adolescent girls (3.6) is higher than their mean pretest knowledge score (3.2). The obtained 't' value at df (0.4) is 0.93 which is not significant at 0.05 level. Since the obtained 't' value is higher than the table value. This illustrates that there is no changes in the level of self practices on menstrual health in control group.

#### SECTION – V

**Table 8: Comparison of mean post test knowledge score of adolescent girls in experimental group and mean post test knowledge score in control group.**

| n = 60             |       |      |           |
|--------------------|-------|------|-----------|
| Group              | Mean  | SD   | 't' Value |
| Experimental Group | 12.13 | 3.5  | 8.52      |
| Control Group      | 5.83  | 2.04 |           |

**\*\*\* Highly significant at 0.001 level**

To find out if there is any difference between the mean posttest level of knowledge of adolescent girls in experimental group who had received video assisted teaching programme and the posttest level of knowledge in control group, the null hypothesis was stated as follows.

H03:

The mean posttest knowledge score of adolescent girls in experimental group who have received video assisted teaching programme regarding menstrual health will not be significantly higher than the posttest knowledge score of control group.

Table 8 denotes that the mean posttest knowledge score of adolescent girls in experimental group (12.13) is higher their mean posttest knowledge score (5.83) in control group. The obtained 't' value at df (6.3) is 8.52 which is highly significant at

0.001 level. Since the obtained 't' value is higher than the table value, the researcher rejects the null hypothesis and accept the research hypothesis.

The findings shows that the video assisted teaching programme has a significant effect in increasing the knowledge of adolescent girls in the experimental group than the control group in the posttest and hence it can be concluded that the video assisted teaching programme has played an important role in increasing the knowledge on menstrual health.

#### SECTION – VI

**Table 9: Comparison of mean post test practices score of adolescent girls in experimental group and the post test practices score of control group.**

| n = 60             |      |      |           |
|--------------------|------|------|-----------|
| Group              | Mean | SD   | 't' Value |
| Experimental Group | 6.6  | 1.54 | 7.83***   |
| Control Group      | 3.37 | 1.65 |           |

**\* Highly Significant at 0.001**

To find out if there is any difference between the mean posttest practice score of adolescent girls in experimental group and the posttest practice score of control group, the null hypothesis mentioned as follows.

H04:

The mean posttest practices score of adolescent girls in experimental group who have received video assisted teaching programme regarding menstrual health will not be significantly higher than the posttest practice score of control group.

Table 9 shows that the mean posttest practice level of adolescent girls in experimental group (6.6) is higher than mean posttest practice score (3.37) of adolescent girls in control group. The obtained 't' value at df (3.23) is 7.83 which is highly significant at 0.001 level. Since the obtained 't' value is higher than table value, the researcher rejects the null hypothesis and accepts the research hypothesis.

The finding shows that the video assisted teaching programme has a significant effect in increasing practice of adolescent girls in experimental group than the control group in the posttest and therefore it can be concluded that the video assisted teaching programme has played an important role in increasing the practices related to menstrual health.

**Table 10: Correlation between the mean posttest level of knowledge and mean post test level of practice score of the adolescents girls of experimental group regarding menstrual health.**

| <b>n = 60</b>   |          |             |           |                  |
|-----------------|----------|-------------|-----------|------------------|
| <b>Test</b>     | <b>n</b> | <b>Mean</b> | <b>SD</b> | <b>'r' value</b> |
| Knowledge Score | 30       | 12.13       | 3.5       | 0.542*           |
| Practice Score  | 30       | 6.6         | 1.54      |                  |

**\*Significant at 0.05 level**

To find out if there is any difference between the mean posttest knowledge and the mean posttest practice score of the adolescents girls of the experimental group, the null hypothesis stated as follows.

Ho5 : There will not be a positive correlation between post test knowledge score and the post test practice score of the adolescents girls in the experimental group who had received video assisted teaching on menstrual health

Table 10 shows that there is a positive relationship between post test knowledge score and the post test practice score of the adolescents girls in the experimental group. The obtained  $r = 0.54$  is moderately significant at 0.05 level.

It implies that there is a significant moderate positive relationship between the post test knowledge score and the post test practice score. Since the obtained 'r' value is higher than the table value, the researcher rejects the null hypothesis and accepts the research hypothesis.

The findings shows that increase in knowledge brings about a positive change in practice and hence it can be concluded that video assisted teaching has played a significant role in increasing knowledge and practice.

## **SECTION – VIII**

**Table 11: Association between pre test level of knowledge of adolescent girls and their selected demographic variables such as age in years, age of menarche, educational status of the student, educational status of the parents, occupation of parents, type of family, family monthly income, religion, any prior information regarding menstruation.**

| Demographic variables                               | Below mean |      | Above mean |      | $\chi^2$<br>(df) | p-value<br>(N/NS) |
|---|------------|------|------------|------|------------------|-------------------|
|   | f          | %    | f          | %    |                  |                   |
|   |            |      |            |      |                  |                   |
| <b>1.Age in years:</b>                              |            |      |            |      |                  |                   |
| 12-13   | 17         | 56.7 | 11         | 36.7 | 1.24             | 0.265             |
| 14-15   | 2          | 6.7  | 0          | 0    | (df=1)           | NS                |
| <b>2.Age of menarche in years:</b>                  |            |      |            |      |                  |                   |
| 10-12   | 14         | 46.7 | 9          | 30   | 0.256            | 0.612             |
| 13-15   | 5          | 16.7 | 2          | 6.7  | (df=1)           | NS                |
| <b>3. Educational status:</b>                       |            |      |            |      |                  |                   |
| 7 <sup>th</sup> std                                 | 4          | 13.3 | 2          | 6.7  | 7.30<br>(df=2)   | 0.026<br>S        |
| 8 <sup>th</sup> std                                 | 2          | 6.7  | 6          | 20   |                  |                   |
| 9 <sup>th</sup> std                                 | 13         | 43.3 | 3          | 10   |                  |                   |
| <b>4.Educational status of parents:</b>             |            |      |            |      |                  |                   |
| Illiterate  | 9          | 30   | 5          | 16.7 | 0.76<br>(df=2)   | 0.860<br>NS       |
| Elementary  | 8          | 26.7 | 5          | 16.7 |                  |                   |
| Higher secondary                                    | 1          | 3.3  | 1          | 3.3  |                  |                   |
| Graduate  | 1          | 3.3  | 0          | 0    |                  |                   |
| Post graduate                                       | 0          | 0    | 0          | 0    |                  |                   |
| <b>5.Occupation of parents:</b>                     |            |      |            |      |                  |                   |
| Coolie  | 15         | 50   | 11         | 36.7 | 2.67<br>(df=2)   | 0.263<br>NS       |
| Farmer  | 3          | 10   | 0          | 0    |                  |                   |
| Business  | 0          | 0    | 0          | 0    |                  |                   |
| Others  | 1          | 3.3  | 0          | 0    |                  |                   |
| Demographic variables                               | Below mean |      | Above mean |      | $\chi^2$<br>(df) | p-value<br>(N/NS) |
|   | f          | %    | f          | %    |                  |                   |
|   |            |      |            |      |                  |                   |
| <b>6.Type of <u>family</u> :</b>                    |            |      |            |      |                  |                   |
| Nuclear   | 10         | 33.3 | 11         | 36.7 | 7.44             | 0.006             |
| Joint   | 9          | 30   | 0          | 0    | (df=1)           | NS                |
| <b>7.Family Monthly <u>income</u> :</b>             |            |      |            |      |                  |                   |
| Below 8000  | 14         | 46.7 | 7          | 23.3 | 2.52<br>(df=3)   | 0.471<br>NS       |
| 8001-12000  | 3          | 10   | 4          | 13.3 |                  |                   |
| 12001-15000   | 1          | 3.3  | 0          | 0    |                  |                   |
| Above 15000   | 1          | 3.3  | 0          | 0    |                  |                   |
| <b>8.Religion:</b>                                  |            |      |            |      |                  |                   |
| Hindu   | 17         | 56.7 | 9          | 30   | 1.79             | 0.409             |
| Muslim  | 1          | 3.3  | 0          | 0    | (df=2)           | NS                |
| Christian   | 1          | 3.3  | 2          | 6.7  |                  |                   |
| <b>9. Any prior information regarding menarche:</b> |            |      |            |      |                  |                   |
| Yes   | 3          | 10   | 3          | 10   | 0.574            | 0.449             |
| No  | 16         | 53.3 | 8          | 26.7 | (df=1)           | NS                |

NS-Not significant, S-significant.

To find out if there is any association between the pre test level of knowledge and selected demographic variables. The following null hypothesis was selected as follows.

Ho6:

There will be no association between pre test knowledge score among adolescent girls who had received video assisted teaching programme regarding menstrual health and selected demographic variables such as age in years, age of menarche, educational status of the student, educational status of the parents, occupation of parents, type of family, family monthly income, religion, any prior information regarding menstruation.

Table 11 summarizes that there was an association between the pre test knowledge level and student educational status as the obtained chi- square value was 7.30 at df (3). And there were no significant association between the pre test knowledge level and demographic variables such as age in years, age of menarche, educational status of the student, educational status of the parents, occupation of parents, type of family, family monthly income, religion, any prior information regarding menstruation. So the researcher rejects the research hypothesis and accept null hypothesis.

## SECTION – IX

**Table 12: Association between pre test level of practice of adolescent girls and their selected demographic variables such as age in years, age of menarche, educational status of the student, educational status of the parents, occupation of parents, type of family, family monthly income, religion, any prior information regarding menstruation.**

**N= 60**

| Demographic variables                               | Above mean |      | Below mean |      | $\chi^2$<br>(df) | p-value<br>(N/NS) |
|---|------------|------|------------|------|------------------|-------------------|
|   | f          | %    | f          | %    |                  |                   |
| <b>1.Age in years:</b>                              |            |      |            |      |                  |                   |
| 12-14   | 14         | 46.7 | 14         | 46.7 | 1.88             | 0.171             |
| 15-17   | 2          | 6.7  | 0          | 0    | (df=1)           | NS                |
| <b>2.Age of menarche in years:</b>                  |            |      |            |      |                  |                   |
| 9-12  | 13         | 43.3 | 10         | 33.3 | 0.403            | 0.526             |
| 13-16   | 3          | 10   | 4          | 13.3 | (df=1)           | NS                |
| <b>3. Educational status of the students</b>        |            |      |            |      |                  |                   |
| 7 <sup>th</sup> std                                 | 4          | 13.3 | 2          | 6.7  | 7.30             | 0.026             |
| 8 <sup>th</sup> std                                 | 2          | 6.7  | 6          | 20   | (df=2)           | S                 |
| 9 <sup>th</sup> std                                 | 13         | 43.3 | 3          | 10   |                  |                   |
| <b>4.Educational status of parents:</b>             |            |      |            |      |                  |                   |
| Illiterate  | 10         | 33.3 | 4          | 13.3 |                  |                   |
| Elementary  | 4          | 13.3 | 9          | 30   | 5.39             | 0.146             |
| Higher secondary                                    | 1          | 3.3  | 1          | 3.3  | (df=3)           | NS                |
| Graduate  | 1          | 3.3  | 0          | 0    |                  |                   |
| Post graduate                                       | 0          | 0    | 0          | 0    |                  |                   |
| <b>5.Occupation of parents:</b>                     |            |      |            |      |                  |                   |
| Coolie  | 14         | 13.3 | 12         | 40   |                  |                   |
| Farmer  | 1          | 3.3  | 2          | 6.7  | 1.36             | 0.507             |
| Business  | 1          | 3.3  | 0          | 0    | (df=2)           | NS                |
| Others  | 0          | 0    | 0          | 0    |                  |                   |
| Demographic variables                               | Above mean |      | Below mean |      | $\chi^2$<br>(df) | p-value<br>(N/NS) |
|   | f          | %    | f          | %    |                  |                   |
| <b>6.Type of family :</b>                           |            |      |            |      |                  |                   |
| Nuclear   | 11         | 36.7 | 10         | 33.3 | 0.03             | 0.873             |
| Joint   | 5          | 16.7 | 4          | 13.3 | (df=1)           | NS                |
| <b>7.Family Monthly income :</b>                    |            |      |            |      |                  |                   |
| Below 8000  | 13         | 43.3 | 8          | 26.7 | 4.36             | 0.225             |
| 8001-12000  | 2          | 6.7  | 5          | 16.7 | (df=3)           | NS                |
| 12001-15000   | 0          | 0    | 1          | 3.3  |                  |                   |
| Above 15000   | 1          | 3.3  | 0          | 0    |                  |                   |
| <b>8.Religion:</b>                                  |            |      |            |      |                  |                   |
| Hindu   | 12         | 40   | 14         | 46.7 | 4.04             | 0.133             |
| Muslim  | 1          | 3.3  | 0          | 0    | (df=2)           | NS                |
| Christian   | 3          | 10   | 0          | 0    |                  |                   |
| <b>9. Any prior information regarding menarche:</b> |            |      |            |      |                  |                   |
| Yes   | 3          | 10   | 3          | 10   | 0.57             | 0.449             |
| No  | 16         | 53.3 | 8          | 26.7 | (df=1)           | NS                |

NS-Not Significant, S-significant.

To find out if there is any association between the pre test level of practice and selected demographic variables. The following null hypothesis was selected as follows.

Ho6:

There will be no association between pre test practice score among adolescent girls who had received video assisted teaching programme regarding menstrual health and selected demographic variables such as age

in years, age of menarche, educational status of the student, educational status of the parents, occupation of parents, type of family, family monthly income, religion, any prior information regarding menstruation.

Table 12 summarizes that there was an association between the pre test practice level and student educational status as the obtained chi-square value was 7.30 at df (2). And there were no significant association between the pre test practice level and demographic variables such as age in years, age of menarche, educational status of the student, educational status of the parents, occupation of parents, type of family, family monthly income, religion, any prior information regarding menstruation. So the researcher rejects the research hypothesis and accept null hypothesis.

## XII. Discussion

The present study was conducted to assess the effectiveness of video assisted teaching programme on knowledge and practice related to menstrual health among adolescent girls in selected rural schools at Udaipur, Rajasthan. The study findings are discussed in this chapter with reference to the objectives, the framework and hypothesis stated in this chapter.

Distribution of samples with regard to demographic variables:

Table 1 predicts that the age in years of 93.3% of adolescent girls in experimental group and 93.3% of adolescent girls in control group were between 12-13 years. The age at menarche of the adolescent girls depicted that 76.7% in experimental group and 53.3% of adolescent girls in control group were between 10- 12 years. With regards to the educational status majority of adolescent girls that is 53.3% in experimental group and 40% in control group had studied in 9th and 8th std. Regarding educational status of the parents 46.7% in experimental group had illiterate, 36.7% of the parents in control group had elementary education.

Considering occupation of the parents of adolescent girls 86.7% parents in experimental group 90% parents in control group were coolies. With regards to the family type 70% adolescent girls in the experimental group and 63.3% in the control group was nuclear family. Considering the family monthly income 70% adolescent girls in experimental group and 63.3% adolescent girls in control group were being below 8000. With regard to the religion of the adolescent girls 86.7% in experimental group and 66.7% adolescent girls in control group were belong to Hindu. Any prior information regarding menarche of the adolescent girls depicted that 80% in experimental group and 83.3% of adolescent girls in control group were not aware about prior information regarding menarche.

The present study finding is similar to study findings of Srinivasa & Manasa (2016) had done a cross-sectional study on menstrual hygiene among adolescent girls Government Girls High School in Bengaluru. The study findings revealed that the mean age of menarche was  $12.6 \pm 1.1$  years. The main source of information about menstruation and menstrual hygiene was their mother (46.5%, n=226). This study supports the findings of the present study that the age at menarche of the adolescent girls depicted that 76.7% in experimental group and 53.3% of adolescent girls in control group were between 10-12 years.

The first and second objectives of the study to assess the pre test and post test level of knowledge and practices related to menstrual health in both experimental group and control group among adolescent girls. Distribution of adolescent girls according to the pre test level of knowledge in experimental and control group.

Table-2 revealed that in the pre test only a less number of participants (20%) had moderately adequate knowledge and majority (80%) had inadequate knowledge in experimental group.

The present study finding is similar to study findings of Anusha et al (2015) had conducted a pre experimental study on effectiveness of structured teaching programme on knowledge regarding pubertal changes among adolescent girls in KNR government high school at Nellore district. The findings of the study revealed that in pre test 43 (71.6%) had inadequate knowledge and 17 (28.4%) had moderately adequate knowledge. This study supports the findings of the present study, in the pre-test only a less number of participants (20%) had moderately adequate knowledge and majority (80%) had inadequate knowledge in experimental group.

Table-2 revealed that in the pre test only a less number of participant (26.7%) had moderately adequate knowledge and nearly all participants (73.3%) had inadequate knowledge in the control group.

The present study finding is similar to study findings of Rakesh Sharma (2015) Had conducted a true experimental study on Menstrual hygiene among 50 adolescent girls of a secondary school situated in the Bhaniyawala of Dehradun district, Uttarakhand. The finding of the study revealed that the mean pre- test knowledge in control group  $8.02 \pm 2$ . This study supports the findings of the present study, that in the pre test only a less number of participant (26.7%) had moderately adequate knowledge and nearly all participants (73.3%) had inadequate knowledge in the control group.

Distribution of adolescent girls according to the post test level of knowledge and in experimental group and control group.



Table-2 predicts that in the post test (30%) participants had adequate knowledge, more than half (56.7%) had moderate knowledge and less number of participants (13.3%) had inadequate knowledge in experimental group.

The present study finding is similar to study findings of Sasikala (2012) Had done a Study to assess the Effectiveness of Structured Teaching Programme on Menstrual Hygiene for Adolescent Girls in Tripati. The study finding revealed that the post test majority 48% of adolescent girls gained very good knowledge scores, 42% had good knowledge and 10% of them had adequate knowledge after structured teaching programme. This study finding supports the finding of the present study that, in the post test (30%) participants had adequate knowledge, more than half (56.7%) had moderate knowledge and less number of participants (13.3%) had inadequate knowledge in experimental group. This shows that structured teaching programme has very effective in enhancing the knowledge of adolescent girls on menstrual hygiene.

Table-2 predicts that in the post test nearly half (26.7%) had moderately adequate knowledge and majority (73.3%) inadequate knowledge in the control group.

The present study finding is similar to study findings of Sushma Katkuri (2013) described that in the post test majority 86% of adolescent girls had a poor knowledge scores, 14% had moderate knowledge in control group. This study finding supports the finding of the present study that, in the pre test nearly half (26.6%) had a moderate knowledge and more than half (73.3%) had a poor knowledge in the control group. Distribution of adolescent girls according to the pre test level of practice in experimental and control group.

Table-3 predicts that in the pre testless number of (26.6%) participants had moderate practice and majority of the participants (66.6%) had a poor practice in the experimental group.

The present study finding is similar to study findings of Pundkar (2014) Had conducted a Study on knowledge and practice of menstrual hygiene among adolescent girls in Ahmednagar. The study finding revealed that in the pre test majority 76% of adolescent girls had a poor practice scores, 20% had moderate practice and 4% of them had adequate practice in experimental group. This study finding supports the finding of the present study that, in the pre testless number of (26.6%) participants had moderate practice and majority of the participants (66.6%) had a poor practice in the experimental group.

Table-3 revealed that in the pre test nearly half (26.6%) had a moderate practice and moderate practice and more than half (73.3%) had a poor practice in the control group.

The present study finding is similar to study findings of Kamath (2013) Had done a Study on knowledge and practice regarding menstrual hygiene among adolescent girls in Udipi Taluk, India.. The study finding revealed that in the pre test majority 86% of adolescent girls had a poor practice scores, 14% had moderate practice in control group. This study finding supports the finding of the present study that, in the pre test nearly half (26.6%) had a moderate practice and moderate practice and more than half (73.3%) had a poor practice in the control group.

Distribution of adolescent girls according to the post test level of practice in experimental and control group.

Table-3 predicts that in the post test (33.3%) participants had a good practice, half of the participants (50%) had a moderate practice in the experimental group.

The present study finding is similar to study findings of Sudha Radhi (2013) had conducted a Study to assess the Effectiveness of Planned Teaching Program (PTP) on Knowledge of Sex Education among Adolescent Girls in Karnataka. The study finding revealed that in post-test 62 (95.38%) of girls had good practice and 3 (4.61%) had average practice. This study finding supports the finding of the present study that, predicts that in the post test (33.3 %) participants had a good practice, half of the participants (50%) had a moderate practice in the experimental group. This shows that planned teaching programme has very effective in enhancing the knowledge of adolescent girls on menstrual hygiene.

Table-3 predicts that in the post test nearly half of the participants (33.3%) had a moderate practice and more than half of the participants (63.3%) had an inadequate practice in the control group.

The present study finding is similar to study findings of Sreedhar (2013) Had done a Study on knowledge and practice of menstrual hygiene among urban adolescent girls in Hyderabad. The study finding revealed that in the post test majority 90% of adolescent girls had a poor practice scores, 10% had moderate practice in control group. This study finding supports the finding of the present study that, in the post test nearly half of the participants (33.3%) had a moderate practice and more than half of the participants (63.3%) had an inadequate practice in the control group.

Comparison of mean pre test and post test knowledge score of adolescent girls in experimental group.

Table 4 predicts that the mean post test knowledge score of the adolescent girls (12.13) is higher than their mean pre test knowledge score (5.8). The obtained 't' value at df (6.3) is (10.77) which is significant at 0.001 level. Since the obtained 't' value is higher than the table value, the researcher rejects the null hypothesis and accepts the research hypothesis. The finding shows that the video assisted teaching programme has a significant effect in increasing the level of knowledge of adolescent girls regarding menstrual health.

The present study finding is similar to study findings of Chithra Nagaraj (2013) Had conducted a study on effect of health education on knowledge, attitude, and practices regarding menstruation and menstrual hygiene among adolescent girls in rural areas in Karnataka. . Finding of this study revealed that there is statistically significant improvement ( $P < 0.05$ ) in their knowledge, attitude, and practices regarding menstruation and hygiene practices was observed following health education. This study supports the findings of the present study that the mean post test level of knowledge is higher than the mean pre test knowledge level, so the video assisted teaching was effective.

Comparison of mean pre test and post test knowledge score of adolescent girls in control group

Table 6 explains that the mean post test knowledge score of the adolescent girls (5.83) is higher than their mean pre test knowledge score (5.9). The obtained 't' value at df (0.06) is 0.149 which is not significant at 0.05 level. Since the obtained 't' value. It illustrates that there is no improvement in level of knowledge in control group regarding the menstrual health.

The present study finding is similar to study findings of Shanthi (2010) had conducted a study to assess the effectiveness of knowledge and practice regarding menstrual hygiene among adolescent girls. The study revealed that in control group 34 (68%) had adequate knowledge 16 (32%) had moderately adequate knowledge in the pre test, where as in the post test 32 (64%) had inadequate knowledge and 18 (36%) had moderately adequate knowledge. None of the sample had adequate knowledge both in pre test and post test.

Comparison of mean post test knowledge score of adolescent girls in experimental and control group.

Table 8 denotes that the mean posttest knowledge score of adolescent girls in experimental group (12.13) is higher their mean posttest knowledge score (5.83) in control group. The obtained 't' value at df (6.3) is 8.52 which is highly significant at level. Since the obtained 't' value is higher than the table value. The difference between the mean may be due to the effect of video assisted teaching programme on menstrual health.

The present study finding is similar to study findings of Shahrban Mehrabi (2014) Had done a quasi-experimental study on the Effect of Puberty Education on Knowledge, Attitudes, and Function of Female Students in Iran. . The study finding revealed that the post test score of experimental group (mean=8.70, SD=0.57), significantly higher than their post test score of control group (mean=4.75, SD=1.55). This study finding support the present study finding that the mean post test knowledge score of adolescent girls in experimental group (12.13) is higher their mean posttest knowledge score (5.83) in control group. The finding shows that the effectiveness of video assisted teaching programme has a significant effect in increasing the level of knowledge of adolescent girls regarding menstrual health in experimental group.

Comparison of mean pre test and post test practices score of adolescent girls in experimental group

Table 5 explains that the mean post test practice score of the adolescent girls (6.6) is higher than their mean pre test practice score (3.6). The obtained 't' value at df (3.0) is 8.25 which is highly significant at 0.001 level. Since the obtained 't' value is higher than the table value. The finding shows that the effectiveness of video assisted teaching programme has a significant effect in increasing the level of practice of adolescent girls regarding menstrual health.

The present study finding is similar to study findings of Emdadul H. Syed et al (2013) had done a study on evaluation of a school based menstrual hygiene educational intervention among adolescent girls in Bangladesh. Sample size are 416 adolescent female students (grades 6-8) from three rural schools. The finding of the study revealed that during the pre-intervention phase, only 28.8% of adolescents had good hygiene practices. In the post-intervention phase, there was a significant improvement in good menstrual practices (60.1%). With regards to absorbent used during menstruation, significant improvement was observed ( $P < 0.001$ ). This study finding support the present study finding that, the mean post test practice score of the adolescent girls (6.6) is higher than their mean pre test practice score (3.6). which is highly significant at 0.001 level. The finding shows that the effectiveness of video assisted teaching programme has a significant effect in increasing the level of practice of adolescent girls regarding menstrual health.

Comparison of mean pre test and post test practices score of adolescent girls in control group.

Table 7 explains that the mean post test practice score of the adolescent girls (3.6) is higher than their mean pre test knowledge score (3.2). The obtained 't' value at df (0.4) is 0.93 which is not significant at 0.05 level. Since the obtained 't' value is higher than the table value. This illustrates that there is no changes in the level of self practices on menstrual health in control group.

The present study finding is similar to study findings of Shanthi (2010) had conducted a study to assess the effectiveness of knowledge and practice regarding menstrual hygiene among adolescent girls. The study revealed that in control group 1 (2%) had satisfactory practice and 30 (70%) had unsatisfactory practice in the pre test, where as in the post test 1 (2%) had satisfactory practice and 15 (30%) had moderately satisfactory practice. Whereas 34 (68%) had unsatisfactory practice.

Correlation between the mean post test level of knowledge and practice score of the adolescents girls of experimental group regarding menstrual health.

Table 10 shows that there is a positive relationship between post test knowledge score and the post test practice score of the adolescents girls in the experimental group. The obtained  $r = 0.54$  is moderately significant at 0.05 level. It implies that there was a significant moderate positive relationship between the post test knowledge score and the post test practice score. Since the obtained 'r' value is higher than the table value.

Present study findings is supported by Shailendra Kumar Mishra (2016) Had done a study to understand the relationship of socioeconomic characteristics, menstrual hygiene practices and gynaecological problems among adolescent girls in Eastern India. The study finding revealed that rural and urban girls have better menstrual hygiene practices ( $\beta=0.343$ ,  $p<0.01$ ) than rural girls. The results of path analysis also indicate that girls of higher socioeconomic status have better menstrual hygiene practices which subsequently reduce the prevalence of gynaecological problems among them. This study finding support the present study finding that the obtained  $r = 0.54$  is moderately significant at 0.05 level. It implies that there is a significant moderate positive relationship between the post test knowledge score and the post test practice score.

Association between pre test level of knowledge of adolescent girls and their selected demographic variables.

In order to identify the association between the pre test level of knowledge and the selected demographic variables of adolescent girls who were participated in the study, chi-square test was computed.

There was no significant association between the pre test level of knowledge and demographic variables such as age in years, age of menarche, educational status of the student, educational status of the parents, occupation of parents, type of family, family monthly income, religion, any prior information regarding menstruation. And it was found that there was an association between the pre test knowledge level and student educational status.

Present study findings is supported by Anushree et al (2013) had done a descriptive survey approach study on menstrual hygiene among adolescent girls in mangalore. The finding of the study revealed that there was significant association between the level of knowledge in religion ( $p < 0.05$ ) and the mother occupation ( $p < 0.05$ ). There was no significant association between the level of knowledge related to menstrual hygiene in age, education, family type, occupation of the father, family income, age at first menstruation, pre existing knowledge and source of information ( $p > 0.05$ ). This study support the finding of the present study. There was no significant association between the pre test level of knowledge and demographic variables such as age in years, age of menarche, educational status of the student, educational status of the parents, occupation of parents, type of family, family monthly income, religion, any prior information regarding menstruation except educational status of the student.

### **XIII. Summary, Conclusion, Implications And Recommendations**

This chapter deals with the summary of the study and the conclusion drawn. It also deals with the limitation of the study, the implications and recommendations given for different areas of nursing and health care delivery system.

#### **Summary Of The Study**

The present study was undertaken to assess the effectiveness of the video assisted teaching programme on knowledge and practice related to menstrual health among adolescent girls in selected schools, Udaipur, Rajasthan.

#### **Objectives:**

- ☐ To assess the pre test and post test level of knowledge and practice regarding menstrual health among adolescent girls in experimental group.
- ☐ To assess the pre test and post test level of knowledge and practice regarding menstrual health among adolescent girls in control group.
- ☐ To evaluate the effectiveness of video assisted teaching programme on the knowledge regarding menstrual health among adolescent girls in experimental group.
- ☐ To evaluate the effectiveness of video assisted teaching programme on the practice regarding menstrual health among adolescent girls in experimental group.
- ☐ To find out the relationship between level of knowledge and practice regarding menstrual health among adolescence girls experimental group.
- ☐ To associate the pre test level of knowledge & practice regarding menstrual health among adolescent girls with their demographic variables such as age, age at menarche, educational status of the student, educational status of the parent, occupation of the parents, family monthly income, type of family, religion, any prior information regarding menstruation.

#### **Hypothesis:**

Hypothesis were tested at 0.05 level of significant level.

H1:

Mean post test knowledge score on menstrual health of adolescent girls in the experimental group will be significantly higher than their mean pre test knowledge score on menstrual hygiene.

H2:

Mean post test knowledge score on menstrual health of adolescent girl in the experimental group will be significantly higher than the mean post test knowledge score on the control group.

H3:

Mean post test practice score on menstrual health of adolescent girls in the experimental group will be significantly higher than their mean pre test practice score. H4:

Mean post test practice score on menstrual health of adolescent girls in the experimental group will be significantly higher than the mean post test practice score on adolescent girls in the control group.

H5:

There will be a significant positive relationship between knowledge and practice regarding menstrual health among adolescent girls in the experimental group.

H6:

There will be a significant association between pre test level of knowledge related to menstrual health among adolescent girls and their selected demographic variables such as age, age of menarche, educational status of the student, educational status of a parent, occupation of parents, family monthly income, types of family, religion, prior information regarding menarche.

H7:

There will be a significant association between pre test level of practice related to menstrual health among adolescent girls and their selected demographic variables such as age, age of menarche, educational status of the student, educational status of a parent, occupation of parents, family monthly income, types of family, religion, prior information regarding menarche.

The present study has adopted conceptual framework based on J.W.Kenny's Open System Model. Non-equivalent Pre-test post-test control group quasi experimental research design was adopted.

Independent Variables: Video assisted teaching programme on menstrual health.

Dependent Variables: Knowledge & practice regarding menstrual health. The tool used for data collection was structured knowledge and practice

Questionnaire regarding menstrual health:

The sampling technique adopted for the study was simple random sampling technique. The sample size of the study was 60 among which 30 samples were in experimental group, 30 samples were in control group.

Descriptive statistics ( frequency, percentage and mean were used for the analysis of pre test and post test) and inferential statistics (paired "t" test, independent "t", karlpearson co-efficient, chi square test) was used to analyse and to test the hypothesis.

#### **XIV. Major Findings Of The Study**

Frequency and percentage of adolescent girls based on their demographic variables both in experimental and control group.

The age in years of 93.3% of adolescent girls in experimental group and 93.3% of adolescent girls in control group were between 12-13 years.

The age at menarche of the adolescent girls depicted that 76.7% in experimental group and 53.3% of adolescent girls in control group were between 10- 12 years.

With regards to the educational status majority of adolescent girls that is 53.3% in experimental group and 40% in control group had studied in 8th and 9th std.

Regarding educational status of the parents 46.7% in experimental group, 36.7% of the parents in control group had illiterate.

86.7% parents in experimental group 90% parents in control group were coolies.

70% adolescent girls in the experimental group 63.3% in the control group was nuclear family.

70% adolescent girls family monthly income in experimental group and 63.3% adolescent girls family monthly income in control group were being below 8000. Most of them that is 65% had belongs to Hindu religion.

Any prior information regarding menarche of the adolescent girls depicted that 80% in experimental group and 83.3% of adolescent girls in control group were not aware about prior information regarding menarche.

Distribution of adolescent girls according to the pre test level of knowledge in experimental and control group.

Table-2 revealed that in the pre test only a less number of participants (20%) had moderately adequate knowledge and majority (80%) had inadequate knowledge in experimental group.

Table-2 revealed that in the pre test only a less number of participant (26.7%) had moderately adequate knowledge and nearly all participants (73.3%) had inadequate knowledge in the control group.

Distribution of adolescent girls according to the post test level of knowledge and in experimental group and control group.

Table-2 predicts that in the post test (30%) participants had adequate knowledge, more than half (56.7%) had moderate knowledge and less number of participants (13.3%) had inadequate knowledge in experimental group.

Table-2 predicts that in the post test nearly half (26.7%) had moderately adequate knowledge and majority (73.3%) inadequate knowledge in the control group Distribution of adolescent girls according to the pre test level of practice in experimental and control group.

Table-3 predicts that in the pre testless number of (26.6%) participants had moderate practice and majority of the participants (66.6%) had a poor practice in the experimental group.

Table-3 revealed that in the pre test nearly half (26.6%) had a moderate practice and moderate practice and more than half (73.3%) had a poor practice in the control group.

Distribution of adolescent girls according to the post test level of practice in experimental and control group.

Table-3 predicts that in the post test (33.3%) participants had a good practice, half of the participants (50%) had a moderate practice in the experimental group.

Table-3 predicts that in the post test nearly half of the participants (33.3%) had a moderate practice and more than half of the participants (63.3%) had an inadequate practice in the control group.

Comparison of mean pre test and post test knowledge score of adolescent girls in experimental group.

Table 4 predicts that the mean post test knowledge score of the adolescent girls (12.13) was higher than their mean pre test knowledge score (5.8). The obtained 't' value at df (6.3) was (10.77) which is significant at 0.001 level. Since the obtained 't' value was higher than the table value, the researcher rejects the null hypothesis and accepts the research hypothesis. The finding shows that the video assisted teaching programme has a significant effect in increasing the level of knowledge of adolescent girls regarding menstrual health.

Comparison of mean pre test and post test knowledge score of adolescent girls in control group

Table 6 explains that the mean post test knowledge score of the adolescent girls (5.83) is higher than their mean pre test knowledge score (5.9). The obtained 't' value at df (0.06) is 0.149 which is not significant at 0.05 level. Since the obtained 't' value. It illustrates that there is no improvement in level of knowledge in control group regarding the menstrual health.

Comparison of mean post test knowledge score of adolescent girls in experimental and control group.

Table 8 denotes that the mean post-test knowledge score of adolescent girls in experimental group (12.13) was higher their mean post-test knowledge score (5.83) in control group. The obtained 't' value at df (6.3) was 8.52 which was highly significant at 0.001 level. Since the obtained 't' value was higher than the table value. The difference between the mean may be due to the effect of video assisted teaching programme on menstrual health.

Comparison of mean pre test and post test practices score of adolescent girls in experimental group

Table 5 explains that the mean post test practice score of the adolescent girls (6.6) was higher than their mean pre test practice score (3.6). The obtained 't' value at df (3.0) was 8.25 which is highly significant at 0.001 level. Since the obtained 't' value was higher than the table value. The finding shows that the effectiveness of video assisted teaching programme has a significant effect in increasing the level of practice of adolescent girls regarding menstrual health.

Comparison of mean pre test and post test practices score of adolescent girls in control group.

Table 7 explains that the mean post test practice score of the adolescent girls (3.6) was higher than their mean pre test knowledge score (3.2). The obtained 't' value at df (0.4) was 0.93 which was not significant at 0.05 level. Since the obtained 't' value was higher than the table value. This illustrates that there is no changes in the level of self practices on menstrual health in control group.

Correlation between the mean post test level of knowledge and practice score of the adolescents girls of experimental group regarding menstrual health.

There is a positive relationship between post test knowledge score and the post test practice score of the adolescents girls in the experimental group. The obtained  $r = 0.54$  was moderately significant at 0.05 level. It implies that there was a significant moderate positive relationship between the post test knowledge score and the post test practice score. Since the obtained 'r' value is higher than the table value. Association between pre test level of knowledge of adolescent girls and their selected demographic variables.

In order to identify the association between the pre test level of knowledge and the selected demographic variables of adolescent girls who were participated in the study, chi-square test was computed.

There was no significant association between the pre test level of knowledge and demographic variables such as age in years, age of menarche, educational status of the student, educational status of the parents, occupation of parents, type of family, family monthly income, religion, any prior information regarding menstruation. And it was found that there was an association between the pre test knowledge level except student educational status.

## XV. Conclusion

The following conclusion were drawn from the study.

- ☐ The study proved that video assisted teaching programme had an effect in improving the knowledge of adolescent girls on menstrual health.
- ☐ The study proved that video assisted teaching programme had an effect in improving the practice of adolescent girls on menstrual health.
- ☐ The study proved that there was a positive relationship between knowledge and practice. That indicates that increase in knowledge can increase the self reported practices related to menstrual health.
- ☐ There was an association between pre test knowledge and practices of adolescent girls who participated in the present study.

## Implications

Menstrual problems constitute one of the major reproductive health problems among women. This includes dysmenorrhoea and abnormal menstrual bleeding, skin problems related to protection used and problems related to unhygienic management of this cyclic process. Endogenous infections, a category of reproductive tract infections arise from overgrowth of organisms, bacterial and fungal, that normally found in the genital tract. These infections are related to inadequate personal, menstrual and sexual hygiene practices. In fact it is believed that in resource poor environments around the world, reproductive tract infections in particular are extremely common, with frequent and potentially devastating consequences for the health and social well being of the women and children. Moreover rural women are typically the most vulnerable group in developing nations as the lack of access to basic resources like water and privacy. Understanding the menstrual hygiene practices and barriers associated with its maintenance has implications for women's reproductive health. It helps the health planners and policy makers to decide upon interventions, which have far reaching effect on reproductive health of women.

### Implications for nursing practice

- ☐ School health services are an essential competent of community health. Community health nurse has the vital role in Health educating the adolescent girls through school health programme there is a need to develop educational programmes for parents and teachers. So parents should be persuaded to provide anticipatory guidance to their daughters who are about to attain puberty.
- ☐ Nursing personnel are in the best position and accountable to impart health education to the adolescent girls and young females in the hospital and community area regarding the menstrual health & menstrual hygiene.
- ☐ The nursing personnel working in various health care settings should be given in service education to update their knowledge, practice and abilities in identifying the learning needs of adolescent girls on menstrual hygiene and planning for appropriate intervention.
- ☐ The study findings signify the importance of formulating and implementing video assisted teaching programme by nursing personnel at the community level.

### Implications for nursing education

- ☐ Nursing curriculum should emphasize on menstrual health & menstrual hygiene as a current emerging problem among adolescent girls.
- ☐ The study proved that improved knowledge related to menstrual health could change their practices. To impart the knowledge about menstrual hygiene among adolescent girls and women in reproductive age group in the community the nursing students need to be educated well about menstrual health.

- Health education module should be prepared especially in the area of menstrual hygiene, the nursing personnel should be imparted with current knowledge and practice regarding menstruation and menstrual hygiene to the adolescent girls.

### Implications for nursing administration

- Nursing administration should arrange in service education programme for the teachers for preparing them to function effectively as a counsellor for adolescent girls.
- Cost effective production of adolescent reproductive health educational materials by the nursing staff should be encouraged. Necessary administrative support to be provided to conduct such activities.
- The administrators should emphasize and encourage the nurses to conduct periodic school health programmes.

### Implications for nursing research

- It is essential to develop evidence based strategies for reproductive tract infection related to improper menstrual hygiene.
- This study also brings about the facts that more studies are needed to be done in different setting using other prevention strategies.

### Limitations

- The data collection period was limited to 5 weeks.
- The study was conducted among adolescent girls from a selected rural government schools in Udaipur.

### Recommendation

Based on the findings of the study the recommendations for the future studies follow

- Similar study can be conducted for longer samples for a longer period
- Similar study can be done in varies settings.
- Study can be done in female with different age group.
- School health education programmes has to be strengthened and education with respect to menstruation should be a major component of health education for girls in the upper classes.
- A study that incorporates clinical examination and laboratory investigations will have to be undertaken to establish the causal relationship between the menstrual hygiene and reproductive tract infections beyond reasonable doubts.
- Study can be done in participant's perception about menstruation, including the perception of boys in the school.
- Hygiene of menstruation should be included in the teachers training programme, so that they are equipped with adequate knowledge to guide their students.

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