

**A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED
TEACHING PROGRAMME ON MENARCHE AMONG
THE PRE ADOLESCENT GIRLS IN SELECTED
SCHOOLS AT NAGERCOIL, K.K. DIST
WITH A VIEW TO DEVELOP
A PAMPHLET**

**A DISSERTATION SUBMITTED TO THE TAMILNADU
DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI IN
PARTIAL FULFILLMENT OF REQUIREMENT
FOR THE DEGREE OF MASTER OF
SCIENCE IN NURSING
APRIL 2011**

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**Submitted in partial fulfillment of the requirement for the Degree
of Master of Science in Nursing to The Tamilnadu Dr.M.G.R Medical
University, Chennai, April 2011.**

Internal Examiner

External Examiner

April 2011

DECLARATION

The Investigator, II year M.Sc, Nursing Student of Christian College of Nursing, Neyyoor do here by declare that this thesis, *“A study to assess the effectiveness of structured teaching programme on menarche among the pre adolescent girls in selected schools at Nagercoil, K.K. Dist with a view to develop a pamphlet”* has not been submitted by me for the award of M.Sc (N), title or recognition before.

Neyyoor

Investigator

CERTIFICATE

Certified that this thesis “*A study to assess the effectiveness of structured teaching programme on menarche among the pre adolescent girls in selected schools at Nagercoil, K.K. Dist with a view to develop a pamphlet.*” Is a bonafide work done by P.R.G. Paul Reji, II year M.Sc., Nursing student of Christian College of Nursing Neyyoor submitted in partial fulfillment of requirement for the Master of Science in Nursing, under the Tamil Nadu Dr. M.G.R. Medical University, Chennai, April 2011.

Date:**Signature of Principal**

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ABSTRACT

A study to assess the effectiveness of structured teaching programme regarding menarche among preadolescent girls in selected Schools at Nagercoil, was conducted in partial fulfillment of the requirement for the Degree of Master of Science in Nursing, Christian College of Nursing, Neyyoor, which is affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai during the year April 2011.

OBJECTIVES

- To assess the level of knowledge regarding menarche before and after structured teaching programme among preadolescent girls.
- To evaluate the effectiveness of structured teaching programme regarding menarche among preadolescent girls.
- To associate the pretest knowledge score among preadolescent girls regarding menarche with selected demographic variables such as age, religion, education of mother, type of family, total family income.

The study was based on J.W. Kenny's open system model. The study was conducted in Stella's Matriculation School, Anjukrammam at Kanyakumari District. The study was to assess the effectiveness of structured teaching programme regarding menarche among pre adolescent girls. 60 pre adolescent girls were selected from Stella's Matriculation School at Kanyakumari District for the study.

The data collection tool was a structured knowledge questionnaire to assess the knowledge on menarche. The content validity of the tools was established by 5 experts in the field of Obstetric and Gynecology in Nursing. The reliability of the structured knowledge questionnaire was established by test retest method ($r = 0.993$). The instrument was found to be reliable. Pilot study was conducted to find out the feasibility of the study.

Data obtained were analyzed by both descriptive and inferential statistics.

FINDINGS OF THE STUDY

The significant findings of the study were:

- i. There was a significant difference in mean post test knowledge score regarding menarche ($t = 25.974 * \underline{df} 59, P < 0.01$).
- ii. There was a significant association between pretest knowledge score and education of the mother and there is no association between age, standard, religion, type of family and total family income.

RECOMMENDATIONS

Based on the findings of the study recommendations for future study were,

1. The study can be done with larger group of people.
2. Further studies can be conducted to develop menarche health education programme for all preadolescent girls in different schools in urban and in rural areas.
3. A comparative study can be carried out to ascertain the knowledge and attitude regarding menarche among preadolescent girls in rural and urban areas.
4. Comparative study can be done between effectiveness of self instructional module versus structured teaching programme.
5. A study can be made to compare the effectiveness of menarche health education programme with other methods of teaching (eg: films, video, tapes).
6. The structured teaching programme should be reviewed from time to time in order to incorporate the current trends in the field of menarche.

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CHAPTER I

INTRODUCTION

“Pre adolescence is perhaps the nature's way of preparing parents to welcome the empty nest” - Karen

In humans, menarche is the process of physical changes by which a child's body becomes an adult body which is capable of reproduction. Menarche is initiated by hormone signals from the brain to the gonads (the ovaries and testes). In response, the gonads produce a variety of hormones that stimulate the growth, function, or transformation of brain, bones, muscle, skin, breasts, and reproductive organs. Growth accelerates in the first half of menarche and stops at the completion of menarche. Before puberty, body differences between boys and girls are almost entirely restricted to the genitalia. During puberty, major differences of size, shape, composition, and function develop in many body structures and systems. The most obvious of these are referred to as secondary sex characteristics.

Adolescence is one of the most fascinating and complex transitions in the life span. Its breathtaking pace of growth and change is second only to that of infancy. Biological processes drive many aspects of this growth and development, with the onset of puberty marking the passage from childhood to adolescence. Puberty is a transitional period between childhood and adulthood, during which a growth spurt occurs, secondary sexual characteristics appear, fertility is achieved, and profound psychological changes take place.

In a strict sense, the term puberty (derived from the Latin word *puberatum* (age of maturity, manhood)) refers to the bodily changes of sexual maturation rather than the psychosocial and cultural aspects of adolescent development. Adolescence is the period of psychological and social transition between childhood and adulthood. Adolescence largely overlaps the period of puberty, but its boundaries are less precisely defined and it refers as much to the psychosocial and cultural characteristics of development during the teen years as to the physical changes of puberty.

Adolescence is regarded as a unique phase of human development. Among adolescent girls menarche is an important landmark in the process of growth and maturation. Though menstruation is a natural and normal physiological process for all healthy adult women, as ever it has been surrounded by secrecy and myths in many societies.

Puberty is basically the organic phenomenon of adolescence it is the period of rapid physical changes and personality growth when individuals achieve nearly their adult body structure . Herman giddens (1997),reports that a substantial portion of girls have pubertal changes at age 7 years, the changes occur earlier in black than in white girls. The average age of puberty is 12.5.much earlier than the normal is called early puberty . The time of onset of puberty among Indian girls is 8-10 years. According to Howkins, the onset of menarche can depend up on various factors like heredity, environment ,nutrition, stress, childhood, illness, exercises ,dieting and socio economic factors

The transition to adulthood is a critical stage of human development during which young people leave childhood behind and take on new roles and responsibilities. It is a period of social, psychological, economic and biological transitions and for many preadolescent girls it involves demanding emotional challenges. The process of growing up is a period of confusion and conflict. It is often difficult for young people to fully comprehend these changes as they are occurring.

The World Health Organization had defined adolescence in the age group of 10-19 years. This is a crucial and stressful, yet fascinating period in an individual's life. It is characterized by physical, psychological and social change, transformation and maturation from childhood to adulthood where intense readjustment to the self, family, school, work and social life has to be made. Since the demands on the adolescent are too many, Stanley Hall termed adolescence as a phase of "stress and storm". Puberty is the period in the growth and development of the child that encompasses the initiation and progression of sexual and physical maturation. The term menarche means the onset of menstruation and it is usually followed by a period of adolescent sterility till menstruation begins to occur at regular intervals. Menstruation is the monthly vaginal bleeding at an interval of about 28 days from the uterine endometrial. Menstrual flow is dark in color and contains 60 to 150 ml of fluid. It usually lasts for about four to five days.

Adolescence is a transitional stage of physical and mental human development that occurs between childhood and adulthood. This transition involves biological (i.e. pubertal), social, and psychological changes, though the biological or physiological ones are the easiest to measure objectively. Historically, puberty has been heavily associated

with teenagers the onset of adolescent development. In recent years, however, the start of puberty has had somewhat of an increase in preadolescence (particularly females, as seen with early and precocious puberty), and adolescence has had an occasional extension beyond the teenage years (typically males). These changes have made it more difficult to rigidly define the time frame in which adolescence occurs.

The end of adolescence and the beginning of adulthood varies by country and by function, and furthermore even within a single nation-state or culture there can be different ages at which an individual is considered to be (chronologically and legally) mature enough to be entrusted by society with certain tasks.

NEED FOR THE STUDY

Menarche is the time of change for every adolescent girls due to lack of knowledge regarding menarche, the adolescent girls through the physiological and emotional stresses and malpractices. In Indian society most of the girls do not get adequate knowledge about their own body's physiological changes and about menstruation. Providing accurate knowledge to the pre adolescent girls will be helpful for them at time of menarche.

The world adolescent population is rising faster than that of there age groups. Between 1960 and 1980, while the world population increased by 46% the population of adolescents increased by 66% Toda y, 84% of the world's adolescents live in the developing world, in our country, there is an estimation of 200 million adolescents, comprising one-fifth of the total population. Adolescent's knowledge regarding sexual

and reproductive health is limited. Most of the adolescent girls do not have adequate knowledge about puberty and menstruation knowledge in a developing country like India, where very little attention is being paid to the reproductive health of adolescent girls. Majority of the school going adolescent girls are not aware of the fundamental facts about menstruation and puberty. Negative perceptions and misinformation, which they gather from here and there often, continues through their reproductive years and acts as a barrier for healthy reproductive life. Unhygienic practices during menstruation endanger the reproductive health and well being of adolescent girls and expose them to RTIs/PIDs and their complications. Therefore, adolescence is often seen as a stage of both opportunity and risks, since their behavior, including sexual and reproductive health, have generational and intergenerational consequences.

Girls need to know about menstruation well before menarche” (the first menstrual period) occurs. Too many parents wait until a girl in a certain age, say twelve, to discuss the subject, not realizing that many normal girls may begin their menstrual periods as early as nine or ten years of age. And yet, a girl can be as old as sixteen and just starting menarche, ages vary. At the onset of puberty, there are signs such as breast development and pubic hair growth; girls have special needs and we have to be aware of them. They are excited, scared, and wondering about the first period. We need to get them ready and help them through this time in their lives.

According to a survey conducted by the Federation of Obstetrics and Gynecologists Society of Indian (FOGSI), the age of attaining sexual maturity among

girls in urban Indian has dropped from 13 to 11 years. So far we had accepted the global average (around 13 years). More than 80% of the girls in cities are reaching puberty around age 11 years.

In recent generations there has been a lot of shame around a girl's first experience of bleeding and these reactions are being passed down. The lack of adequate information, acceptance and support created an experience of anxiety and isolation. Menarche is the first significant rite of passage girls go through in their entry into womanhood. It affects their sexual, emotional and psychological maturation. The experience that girls have at this time and the reaction of their mothers and other adult women in their lives has a long term impact.

Adolescent girls constitute a vulnerable group, particularly in India where female child is neglected one. Menstruation is still regarded as something unclean or dirty in Indian society. The reaction to menstruation depends upon 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. Although menstruation is a natural process, it is linked with several misconceptions and practices, which sometimes result into adverse health outcomes.

Menarche is an important period of biological changes that children go through as they move toward becoming adults. These changes typically occur earlier in girls than in boys. In addition the changes in their body and emotional changes, menarche includes maturation of their cognitive and moral development, and how they view themselves and others. It is important to talk with children and prepare them for the changes that they are about to go through as they enter menarche.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of structured teaching programme on menarche among the pre adolescent girls in selected schools at Nagercoil, K.K. Dist with a view to develop a pamphlet.

OBJECTIVES

- ❖ To assess the level of knowledge regarding menarche before and after structured teaching programme among preadolescent girls.
- ❖ To evaluate the effectiveness of structured teaching programme regarding menarche among preadolescent girls.
- ❖ To associate the pretest knowledge score among preadolescent girls regarding menarche with selected demographic variables such as age, religion, education of mother, type of family and total family income.

HYPOTHESES

- ❖ There will be a significant increase in the level of knowledge after structure teaching programme at the level of significant 0.01.
- ❖ The will be an association between the knowledge regarding menarche and selected demographic variables.

OPERATIONAL DEFINITION

Knowledge

Awareness of pre adolescent girls about menarche as measured by the knowledge questionnaire.

Effectiveness

Effectiveness refers to gain in knowledge on physiological and emotional changes during menarche, menstrual cycle and menstrual hygiene.

Menarche

It refers to the maturity of the girl child and the starting of menstrual cycle.

Pre-adolescent girls

It refers to the girls who have not attained menarche and in between the age group of 11-13 years.

ASSUMPTION:

It provides opportunity for learning and better understanding.

Pre adolescent girls undergoing structured teaching programme on puberty will gain knowledge.

LIMITATION

The study is limited to pre adolescent girl's studying in selected schools at Nagercoil.

Sample size limited to 60 pre adolescent girls

Prescribed data collection period is only 4 weeks.

PROJECTED OUT COME

The study will help to improve the pre adolescent girl's knowledge regarding menarche.

CHAPTER –II

REVIEW OF LITERATURE

A review of literature refers to the activities involved in identifying and searching for information on a topic and developing an understanding of the state of knowledge on that topic.

This chapter consists of two parts,

PART A REVIEW OF LITERATURE

In this study, the literatures were reviewed on the basis of three main aspects.

1. Studies related to menarche
2. Studies related to emotional changes
3. Studies related to structured teaching

STUDIES RELATED TO MENARCHE

Danker (2009) suggested that a plausible explanation could be ethnic differences, among other factors. The use of different criteria by different researchers to define the socioeconomic status makes it difficult to compare with these studies. Thus it is a high time that we should categorize the parents on the basis of their occupation rather than income to establish the socioeconomic status.

Aparajita (2008) reported that menstruation is a phenomenon unique to the females. The onset of menstruation is one of the most important changes occurring

among the girls during the adolescent years. The first menstruation (menarche) occurs between 11 and 15 years with a mean of 13 years.

Hygiene-related practices of women during menstruation are considerable as importance, as it has a healthy impact in terms of increased vulnerability to reproductive tract infections (RTI). The interplay of socio-economic status, menstrual hygiene practices and RTI are noticeable.

Preadolescent girls having better knowledge regarding menstrual hygiene and safe practices are less vulnerable to RTI 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 Preadolescent girls.

Paula (2008) suggested norms for "precocious" puberty should be established, with the proposal that would be defined as pubertal development before age 7 in whites and age 6 in African Americans. However, this is still considered controversial, and it should be noted that pathologic causes of precocious puberty can still occur in 6- to 7-year-old in the younger the signs of puberty occur, the more likely a pathologic cause will be found. Regardless, many scholars feel that these new guidelines present a practical, evidence-based approach.

Puberty refers to the physiological changes that an adolescent undergoes in order to reach sexual maturity. It is best characterized as the gradual onset of mature reproductive hormonal activity, triggered by the central nervous system, mainly the hypothalamus and pituitary gland. Most people look at puberty in three distinct stages railed the pre-pubescent, pubescent, and post pubescent. The prepubescent stage includes

the first evidence of sexual maturation - primary sexual characteristics - and terminates at the first appearance of pubic hair. Completion of both primary, sexual characteristics and fertility is possible.

Adolescent growth first centers on the extremities-the legs and arms during the early stages of adolescence. Changes also occur in the facial configurations of both sexes. The lower portion of the head begins to grow because the chin lengthens and the nose grows in width and/or length. Additional changes in proportion of the face is accredited to changes in tissue distribution. Even though both sexes undergo this change, within females a layer of subcutaneous fat develops which causes the rounding and softening of contours of the face and body. Whereas, the male subcutaneous fat development is much less pronounced, but the development of muscles and bones in the face is clearly seen. This gives the males a leaner and more angular face than the females.

Changes also occur on the surface of the body in both sexes. The most observable change is the growth in body hair, both pubic and axillary (armpit). The development of pubic hair is the first sign of a child ending the prepubescent stage and entering the pubescent stage. This process begins about the same time as the growth spurt begins, and is in the form of slightly coarse, straight hairs that grow at the base of the labia majora. The growth of pubic hair continues throughout adolescence, it spreads horizontally and then vertically until it surrounds the genital areas. Characteristically, pubic hair becomes longer, thicker, darker and kinkier as it spreads over the genital areas.

The menstrual cycle is controlled by the hypothalamus, which acts as a menstrual clock. The clock operates through the pituitary gland located at the base of the brain. The

pituitary gland cyclically secretes two hormones which directly stimulate the ovary, these hormones are follicle stimulating and luteinizing hormones.

As follicle stimulating and luteinizing hormones act on the follicle; its cells multiply; causing a large fluid - filled cavity to form; the growth and activity of the follicular cells result in the secretion of estrogen by the cells, and this hormone is found in the fluid of the follicle.

Luteinizing hormones cause the cells of the follicle to rupture and expel the ovum. Then the fluids and cells form a new structure called the corpus luteum. The corpus luteum is stimulated by the gonadotropins and initiate the production of the hormone, progesterone. Progesterone causes the lining of the uterus to change, thus getting it ready for the reception, embedding, and gestation of a fertilized ovum. The coordinated action of progesterone and estrogen makes the lining of the uterus.

Menstruation occurs approximately every three to four weeks. If the ovum is not fertilized, most of the lining of the uterus mixed with blood is expelled through the cervix into the vagina. This bloody discharge is referred as menstruation (menses) or a menstrual period. The entire cycle repeats itself with regularity throughout the reproductive life of the female. However, at its onset after puberty, menstruation may be irregular for a year or two. said by, **Joe Lewis (2007)**

Soeffer et al (2006) Reveled menstruation and menarche include matters related to the physiological aspects of human reproductive development, the hygienic

management of menstruation, as well as the emotional context of this developmental milestone.

Lynette (2004) in his study suggested that menarche in larger girls may be at risk for low perceptions of physical competence. Enhancing competence feelings among adolescent girls may be accomplished by emphasizing friendship and social interaction within physical activity.

Menarche, the first menstruation, is an important transition event in the female life cycle. It represents a concrete symbol of a shift from a girl to a woman. Unlike other gradual pubertal changes, such as breast development and pubic hair growth, menarche usually occurs suddenly and without precise predictability (**Golub, 2004**).

Mul et al (2003) suggested that the first sign of puberty in girls, which occurs at an average age of 10 1/2 years, is breast development. This begins with breast budding, or the formation of small lumps or nodules under one or both nipples. These lumps may be tender and they may be different sizes at first. This is usually the beginning of their growth spurt. Next, in about six months, pubic hair develops (adrenarche), although in some children, pubic hair is the first sign of puberty, and then axillary hair begins to grow. Over the next few years, breast size will continue to increase and there will be a progressive increase in development of pubic hair and the external genitalia, leading to the first period or menarche (occurring at an average age of 12 1/2 to 13 years), which usually occurs about two years after puberty begins and coincides with their peak in height velocity. Development continues and the whole process is completed in 3-4 years, eventually reaching adult breast and areolar size and an adult pattern of pubic hair, and also reached her final adult height about two years after menarche.

Also, this usually begins with an enlargement of the hands and feet and is later followed by growth in the arms, legs, trunk and chest. Other changes include a deepening of the voice, an increase in muscle mass.

According to social learning and feminist theories, teenage girl's expectations and reactions to menarche can be understood in terms of their gender-role socialization and perceptions relating to femininity and women's roles in the society. Indeed, studies have found that American teenage girls who are socialized with traditional cultural attitudes and stereotypes of the roles of women in their society tend to report more severe menarche-related symptoms noted by (Anson, 2002)

STUDIES RELATED TO EMOTIONAL CHANGES

Carol Dashiff (2006) this paper reviews research on the psychological impact of onset of menstruation (menarche). Menarche is an important event for all girls, yet there is relatively little research on this topic, and the existing research contains a number of conceptual and methodological problems. This paper, reviews an attitudes toward menarche and personality characteristics of pubertal girls. Overall, the studies indicate that menarche is a memorable and significant event for girls. Frequently the experience is perceived negatively, but there is also a positive, integrating result to menarche. Factors influencing the psychological impact of menarche include age at time of first period, social factors, amount of preparation, and cultural factors. The paper focuses on research problems and provides suggestions for future research.

Dannii (2006) Explored how psychosocial and cultural factors influenced expectations of menarche among 476 Chinese premenarcheal teenage girls. Results

showed that participants' expectations of menarche were largely negative and heavily influenced by cultural beliefs about menstruation. Findings of hierarchical regression analyses revealed that positive emotional expectations of menarche were best predicted by perceptions of menstruation as a natural event, possession of positive self-concept, and rejection of indigenous negative menstrual attitudes. Negative emotional expectations of menarche were best predicted by perceptions of menstruation as a negative event, by inadequate preparation for menarche, by endorsement of indigenous negative menstrual attitudes, and by older age.

Corina (2004) the main finding of this study is that the acute experience of menarche adversely affects adolescent girl's psychological well-being, most specifically in terms of depressive symptomatology. On the other hand, pubertal change in Mexican boys, as measured by voice-change, did not appear to adversely affect psychological well-being above and beyond a nonsignificant minimal and temporal readjustment and in fact had a positive effect on body-image. Results suggest that perceived maternal control, prior social-emotional adjustment, and menstrual attitudes may moderate the effect of pubertal changes.

Aggarwal (2006) Suggested that implications for nursing education, practice, administration and research. There is a need for the health personnel to take active part in preparing the pre-adolescent girls for menarche. Health education programmes on menstrual hygiene for adolescent girls help in maintaining healthy practices during menstruation.

STUDIES RELATED TO MENSTRUAL HYGIENE

Dasgupta (2007) suggested that menstrual hygiene, a very important risk factor for reproductive tract infections, is a vital aspect of health education for adolescent girls. Educational television programmes, trained school nurses/health personnel, motivated school teachers and knowledgeable parents can play a very important role in transmitting the vital message of correct menstrual hygiene to the adolescent girl's of today.

Jams (2006) in a study on menstrual hygiene, reported that adolescent schoolgirls generally not have adequate knowledge of menstrual hygiene. Thus the present study was undertaken to identify the learning needs of pre-adolescent girls with a view to develop and evaluate a planned teaching programme on menstrual hygiene. It will help them to improve their self-care ability and follow healthy and menstrual hygien.

Rakesh (2004) reported that parents, especially the mothers do not educate their daughters about various aspects of menstruation such as age of its onset, its duration and healthy practices during menstruation. The girls are not motivated to take the event lightly. So, the inadequate knowledge, misconception and wrong ideas lead to undue fear, anxiety and undesirable attitudes in the minds of adolescent girls. The studies recommend a planned educational programme to enlighten young adolescent girls for healthy practices on attaining menarche.

George (2003) conducted a study to asses the who were Preparing girls for menarche. This adequately educate girls about their own anatomy and physiology which has serious implications. These responses also support the need for the menstrual

education as a long term, continuous process, beginning well before menarche. If the girls are prepared even before menarche, they will develop a positive attitude to cope up with physical and psychological changes. Further, this will enable them to develop a healthy attitude towards menstruation and thus adopt hygienic practices during menstruation.

El-Gilany *et al* (2007), the different aspects of personal hygiene were generally found to be poor, such as not changing pads regularly or at night, and not bathing during menstruation with lack of privacy being an important problem. Different restrictions were practiced by most of the girls in the present study, possibly due to their ignorance and false perceptions regarding menstruation

Singh (2006) revealed evil-eyes and magic is strong in India. The piece of cloth/rag/pad used for menstrual bleeding is considered by rural Indian women as one of the most vulnerable object and a potent agent which might be used for casting evil eyes/magic on some one. There is a belief prevalent in the study area that women often throw their 'used' rag/pad at road crossing to cast evil eyes/magic on others. Anybody who steps over this thrown rag/pad is said to become the victim of evil eye/magic. This piece of cloth is considered a part and parcel of the secret world of women's lives...so, all attempts are made to hide/conceal the rag/pad... Thus, its disposal assumes a special significance in the daily lives of Indian women.

Khanna *et al* (2005) reported that nearly 70% believed that menstruation was not a natural process. It was very sad to observe in the present study that most of the girls did not know about the source of menstrual bleeding and more than half of the girls were ignorant about the use of sanitary pads during menstruation. The above observations

might be due to poor literacy level of mothers or absence of proper health education programmes in school, which should focus on menstrual hygiene among girls.

Three-fourth of the girls was using old cloths during their periods and only one-fifth were using readymade sanitary pads. It was observed that the usual practice was to wash the cloth with soap after use and keep it at some secret place till the next menstrual period. To keep the cloth away from prying eyes, these were sometimes hidden in unhygienic places. Privacy for washing, changing or cleaning purpose is something very important for proper menstrual hygiene, but in this study, lack of privacy was an important problem since more than half of the respondents did not possess a covered toilet. Regarding the method of disposal of the used material, most of the girls (73.75%) reused cloth pieces and 57.5% girls properly disposed the used material.

Abdel-Hady et al (2005) Reveled that high and middle social class and urban residence. Use of sanitary pads may be increasing, but not among girls from rural and poor families and other aspects of personal hygiene were generally found to be poor, such as not changing pads regularly or at night, and not bathing during menstruation. Lack of privacy was an important problem. Mass media were the main source of information about menstrual hygiene, followed by mothers, but majority of girls were saying that said they needed more information. Instruction in menstrual hygiene should be linked to an expanded programme of health education in schools. A supportive environment for menstrual hygiene has to be provided both at home and in school and sanitary pads made more affordable.

Joshi et al (2004) Suggested that majority of girls in the first episode of bleeding was a sense of fear/apprehension. Such fear needs to be tactfully dispelled from the mind of adolescent girls so that they develop a balanced and healthy outlook towards their prospective reproductive lives. Thus, there is a need to provide healthy family life education to the women of our study area... particularly the young girls. Appropriate educational package may be developed for school going girls. Non-school going girls may be educated through meetings held at Mahila Mandals/Anganwadi centres. Mass media may also be utilized to encourage menstrual hygiene among adolescents. These aspects should be kept in mind while planning any intervention, educational or otherwise, regarding reproductive health of women.

CONCEPTUAL FRAME WORK

The conceptual frame work for the study is based on J.W.kenny's open system model. In that, their continuous exchange of matters, exchange and information open system vary in degree of intention with the event. The system reviews input and gives feed back in the form of matters, energy and information.

This method of J.W. Kenny's open system is suitable for this study to determine the effectiveness of structured teaching programme on menarche among pre adolescent girls.

The main concepts of the system theory are

- a) Input
- b) Through put
- c) Out put
- d) Feed back

Input

Input refers to the resources taken from the external environment.

In this study, input refers to the pretest knowledge of the preadolescent girls.

Through put

Throughput refers to the structured teaching programme on menarche

Out put

Out put is the post test knowledge and practice by questionnaire.

Conclusion

Thus the aim is to assess the knowledge of 6th, 7th and 8th, standard preadolescent students regarding menarche and to educate the students by structured teaching programme on menarche to improve their knowledge and practice in future.

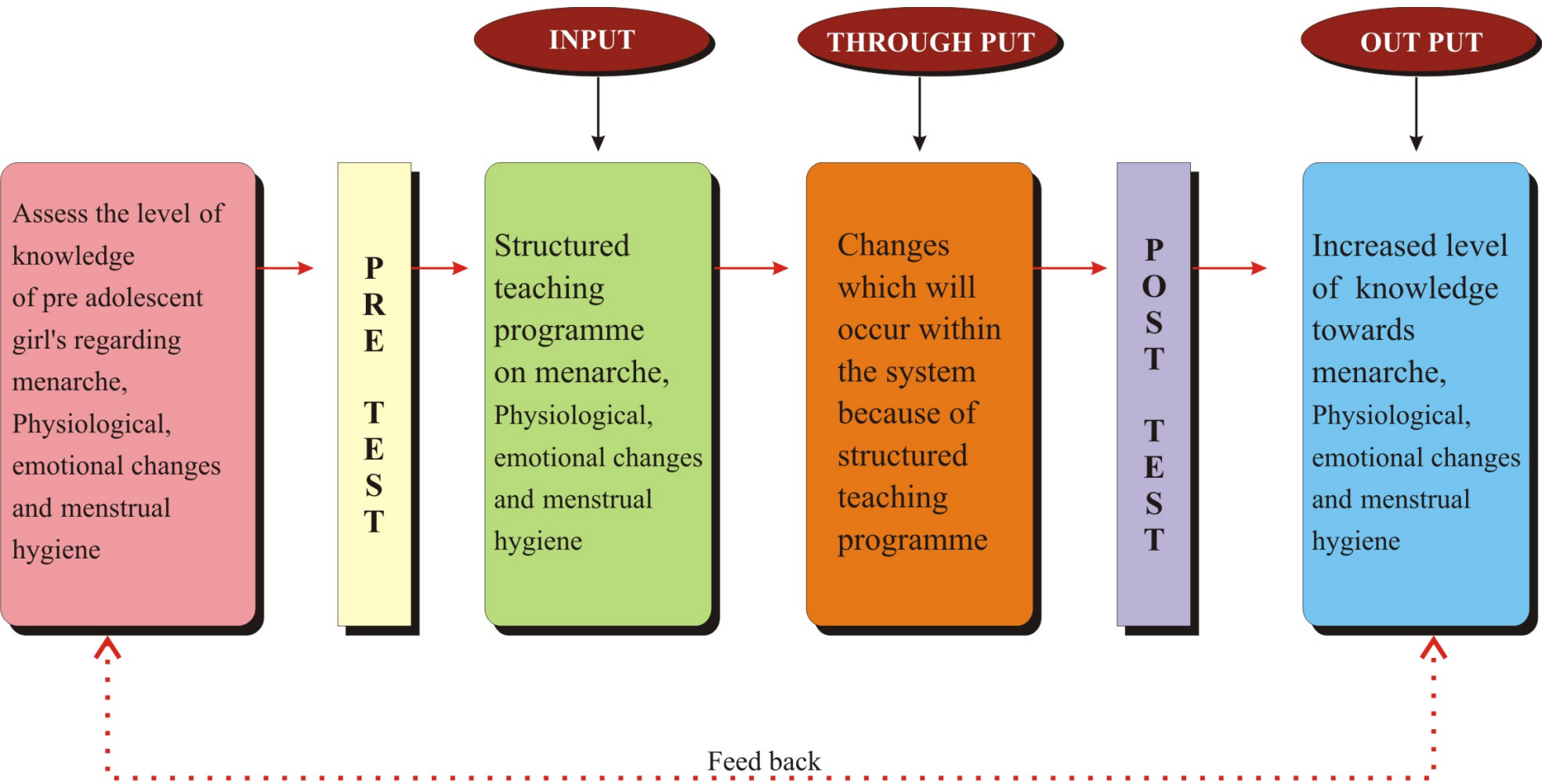


Figure-1: The conceptual frame J.W. Kenny's open system model. (2002)

CHAPTER-III

RESEARCH METHODOLOGY

Research methodology is the systematic way to solve the research problem (Kothari 1990). It consists of general and specific activities from, the identification of the problem to final interpretation and conclusion.

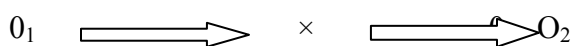
The study was aimed to educate the preadolescent girls regarding menarche. The study was conducted in Anjugramam at Kanyakumari District. It includes research approach, research design, variables, setting of the study, population, sample, sample size, technique of data collection and method of data analysis.

RESEARCH APPROACH:

Quantitative research approach was used in this study.

RESEARCH DESIGN:

The research design used for this study was quasi experimental with One group pre test, post test design



Key:

O1- Level of knowledge before the structured teaching programme

X – Intervention.

O2- Level of knowledge after the structured teaching programme

VARIABLES

Variables are often inherent characteristics of research subjects. The presumed cause is independent variable, the presumed effect is the dependent variable, in this study.

Dependent variable - Knowledge on Menarche

Independent variable - Structured teaching programme.

RESEARCH SETTING

The study was conducted in Stella's Matriculation School at Anjugramam. This school is situated 3 kilometers from Christian College of Nursing. The total strength of the school is 1012. The strength of the students of age 11 to 13 years are 167.

POPULATION

The target population selected was pre-adolescent girls in Stella's Matriculation School at Anjugramam.

SAMPLE:

Pre-adolescent girls those who fulfill the inclusion criteria of the study were the samples for this study.

SAMPLE SIZE:

The samples consisted of 60 pre-adolescent girls.

SAMPLING TECHNIQUE:

Convenience sampling technique was used in this study.

CRITERIA FOR SAMPLE SELECTION

Inclusion Criteria:

Preadolescent girls

Studying in 6th 7th standard in Matriculation School at Kanyakumari District.

Who are in the age group of 11-13 years.

Willing to participate in the study.

Who have not attained menarche.

Exclusion criteria:

Those who has absent on the day of data collection.

DESCRIPTION OF THE TOOL

The tool was organized in two sections.

Section I: Contains demographic data

Section II: Knowledge questionnaire

Section I

Included demographic variables it consisted of age, religion, education of the mother, type of family and total family income.

Section II

This comprised of a structured knowledge questionnaire. The knowledge question consisted of 20 items regarding, physiological changes, emotional changes, menstrual hygiene in the form of multiple choice question.

SCORING AND INTERPRETATION

A score of one was allotted for every correct answer and zero allotted for wrong answer. Total attainable score of knowledge item was 20, the score converted into percentage the resulting score was ranged as follows

Adequate knowledge	61% - 100%
Moderately adequate knowledge	41% - 60%
Inadequate knowledge	0% - 40%

TESTING THE TOOL

Validity:

The structured knowledge questionnaire was developed by the investigator based on review of literature and it was given to five experts in the field of obstetrics and gynecology for content validity.

Reliability:

In this study the reliability of the knowledge questionnaire was established by test re-test method. ($r = 0.993$).

DEVELOPMENT OF STRUCTURED TEACHING PROGRAMME:

A structured teaching programme was developed based on the review of literature and experts opinion. The structured teaching programme consisted of information on physiological, psychological changes during puberty, menstrual hygiene the method of teaching was lecture cum discussion.

PILOT STUDY

In order to test the feasibility, relevance and practicability of study, pilot study was conducted in Evans Matriculation School at Kanyakumari District, 6 preadolescent girls were selected. The pilot study revealed the study was feasible. Data were analyzed to find out suitability of statistics. Pilot study was conducted for one week.

DATA COLLECTION PROCEDURE

The data collection was done from six weeks (10/05/2010-12/06/2010) in Stella's Matriculation Higher Secondary School Anjukrammam, convenience sampling method was used for the study. Group of 60 preadolescent girls who are students from 6th, 7th standard were selected as samples. The data was collected in 2 steps.

Step 1

During this time the researcher introduced her and selected the group of participants and obtained their consent and assured to maintain confidentiality of the answer. The respondents were asked to respond to the questionnaire according to the instruction given in the tool, First pretest was conducted to assess the knowledge among pre adolescent girls regarding menarche. Then Structured teaching programme was given to preadolescent girls it lasted for 45 minutes the visual aids was liquid crystal display projector.

Step 2

Post test was administered after 5 days of structured teaching programme. Then pamphlet was issued to the preadolescent girls.

DATA ANALYSIS AND STATISTICAL METHOD

The data was organized, tabulated, summarized and analyzed using Descriptive and inferential statistics. The plan for data analysis was divided as follows.

Descriptive statistics,

Mean, standard deviation percentages were used for analyzing pretest, post test knowledge.

Inferential statistics:

Chi- square was used to determine the association between knowledge of menarche with demographic variables.

Paired 't' test was used to determine the difference between pretest and post test knowledge score and effectiveness of Structured Teaching Programme.

PROTECTION OF HUMAN RIGHTS

Study was conducted after the approval of the dissertation committee of Christian College of Nursing, Neyyoor. The oral consent was obtained from each study subject before starting the data collection .Assurance was given to study subjects that confidentiality of will be maintained.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

This Chapter deals with the analysis and interpretation of the data which is collected from 60 sample consisting of the pre adolescent girls in selected schools, Nagercoil.

Statistical analysis is a method of rendering quantitative information missing full and intelligible statistical procedure enables the researcher to reduce, summarize, organize, evaluate, interpret and communicate numeric information (Polit, D.2008)

STATISTICAL ANALYSIS

The knowledge regarding menarche among the pre adolescent girl's was assessed before and after teaching programme by per adolescent. The effectiveness of the teaching programme was evaluated and interpreted by standard deviation, paired t test. The association between the pre test knowledge with the select demographic variable was interpreted by the χ^2 (chi-square) test.

The data collected from the subjects were tabulated analyzed in the tables and interpreted under the following section based on the objectives and hypothesis of the study.

THE OBJECTIVES OF THE STUDY WERE

- ❖ To assess the level of knowledge regarding menarche before and after structured teaching programme among preadolescent girls.
- ❖ To evaluate the effectiveness of structured teaching programme regarding menarche among preadolescent girls.

- ❖ To associate the pretest knowledge score among preadolescent girls regarding menarche with selected demographic variables such as age, religion, education of mother, type of family, and total family income.

ORGANIZATION OF THE FINDINGS

In order to find out the relationship between the variable and also to find out the gain in knowledge, the data gathered were tabulated analyzed and interpreted by using both descriptive and inferential statistics the data are presented under the following headings.

- Frequency and percentage distribution of sample characteristics of the study.
- Findings related to frequency and distribution of knowledge score of participants regarding menarche.
- Findings related to effect of structured teaching programme regarding menarche.
 - Gain in knowledge as compared with pretest and post test knowledge score.
- Relationship between pretest knowledge scores with selected variable such as age, standard, Religion, education of mother, type of family and total family income.

FREQUENCY AND PERCENTAGE DISTRIBUTION OF SAMPLE CHARACTERIZATION OF THE STUDY

A sample of 60 pre adolescent girls was analyzed to their demographic characterization of age, standard, Religion, education of mother, type at family and total family income.

**TABLE-1: FREQUENCY AND PERCENTAGE DISTRIBUTION OF
SAMPLE IN THE SELECTED DEMOGRAPHIC VARIABLES**

	N=60	
Demographic variables	Frequency (f)	Percentage (%)
1. Age		
a. 11 yrs	25	41.7
b. 12 yrs	25	41.7
c. 13 yrs	10	16.6
2. Standard		
a. VI std	30	50.0
b. VII std	30	50.0
3. Religion		
a. Christian	36	60.0
b. Hindu	24	40.0
4. Education of mother's		
a. Graduation	30	50.0
b. Higher secondary	9	15.0
c. High school	21	35.0
5. Type of family		
a. Joint	43	71.7
b. Nuclear	17	28.3
6. Total family income		
a. <10000 Rs.	19	31.7
b. ≥10000	41	68.3

The data presented in Table-1 describe the pre adolescent girls. Regarding the age 25 (41.7%) girls were in the age of 11 yrs, age 25 (41.7%) girls were in the age of 12 years and 10 (16.6%) girls were in the age of 13 years. Among the 60 girls 30 (50%) were studying in the VI standard and the remaining 30 (50%) were studying in the VII standard. Regarding religion 36 (60%) were belongs to Christianity and 24 (40%) girls were belonging to Hinduism. Regarding mother's education (50%) girls mother's had acquired graduation, 9 (15%) girls, mother's had studied up to higher secondary level and 21 (35%) Girl's mother's had studied up to high school level. Majorities (71.7%) of girls were living in the joint family and 17 (28%) girls were living in nuclear family. The total family income of 19 (31.7%) girls were Rs. <10000 and 41 (68%) girls above Rs. 10000/- as their total family income.

FIGURE – 2: PERCENTAGE DISTRIBUTION OF AGE AMONG PREADOLESCENT GIRLS

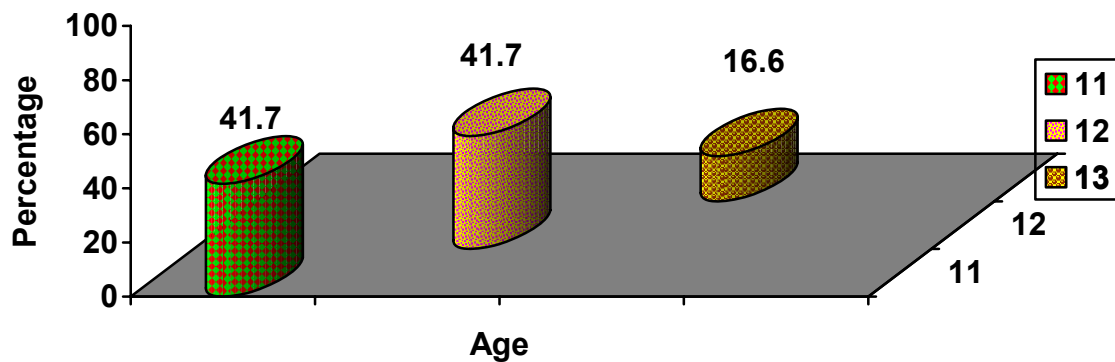


FIGURE - 3: PERCENTAGE DISTRIBUTION OF STANDARD AMONG PREADOLESCENT GIRLS

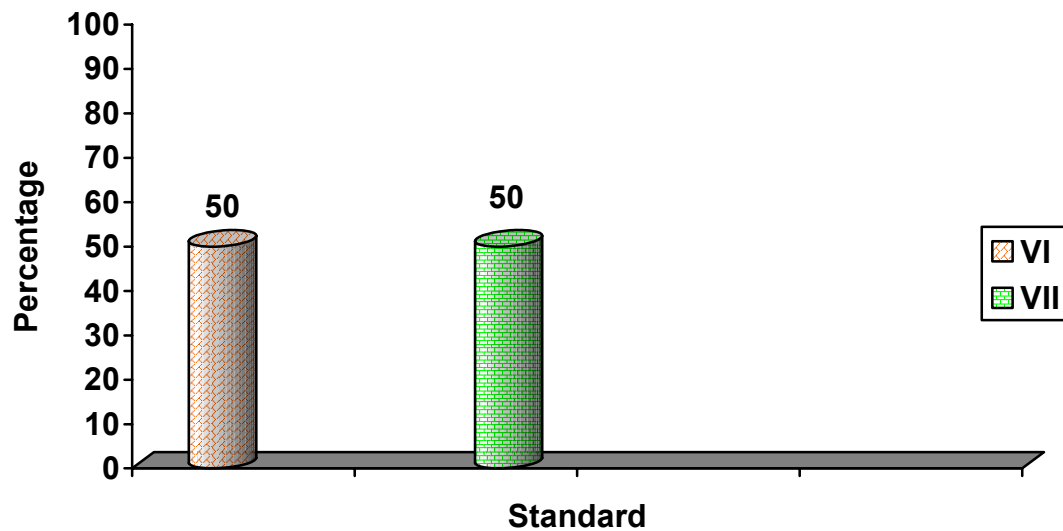


FIGURE – 4: PERCENTAGE DISTRIBUTION OF RELIGION AMONG PREADOLESCENT GIRLS

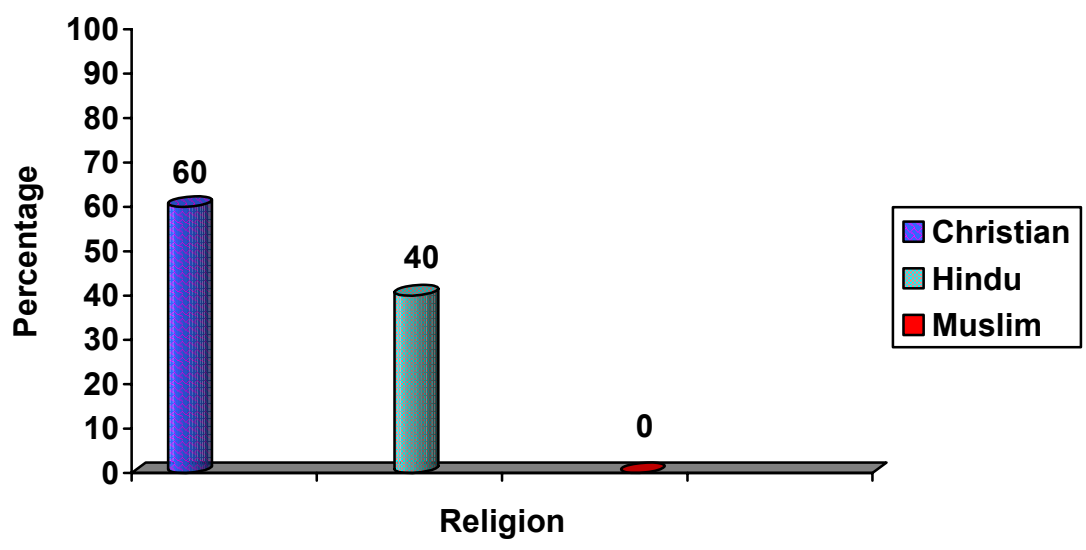


FIGURE - 5: PERCENTAGE DISTRIBUTION EDUCATION OF THE MOTHER AMONG PREADOLESCENT GIRLS

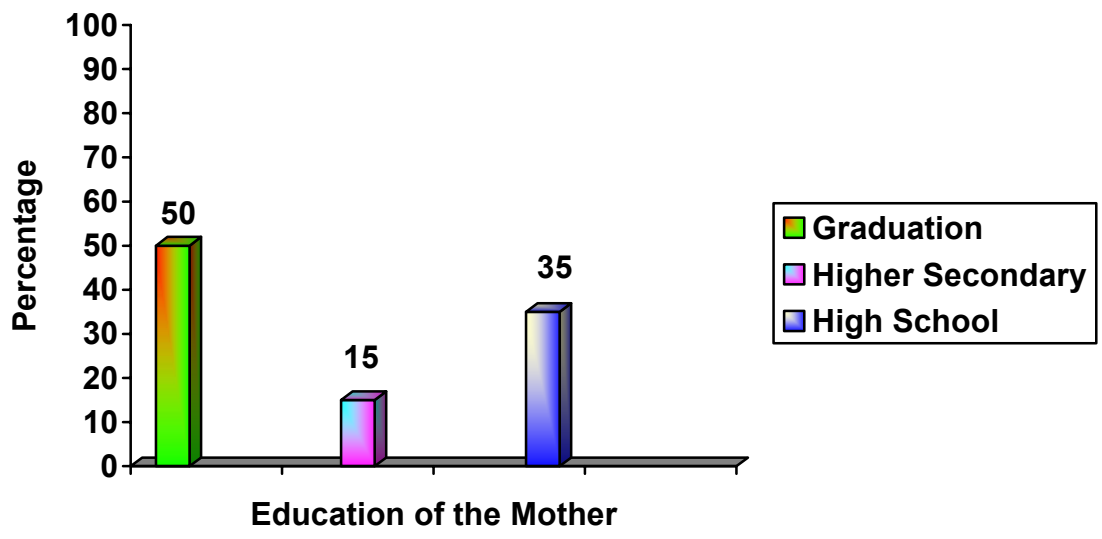


FIGURE – 6: PERCENTAGE DISTRIBUTION OF TYPE OF FAMILY AMONG PREADOLESCENT GIRLS

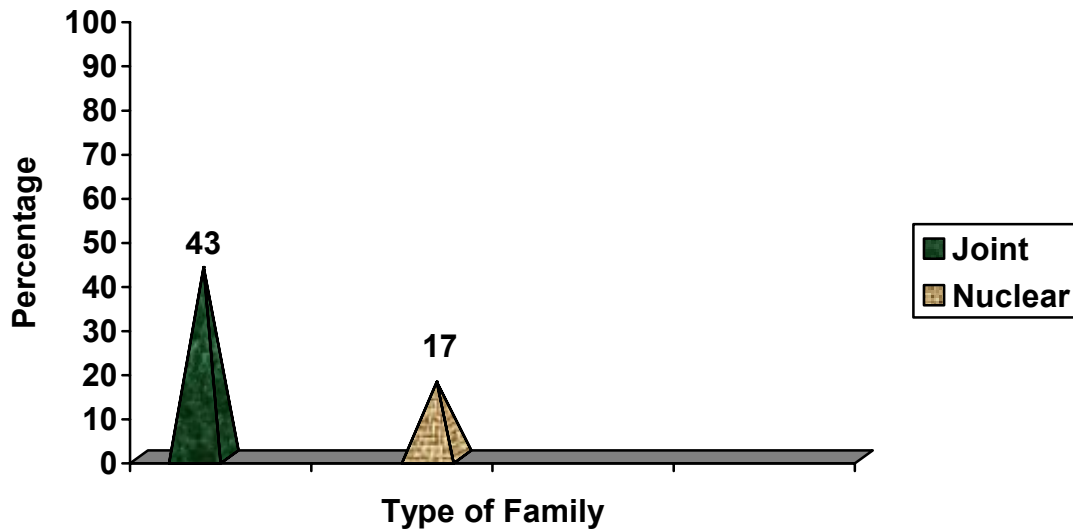
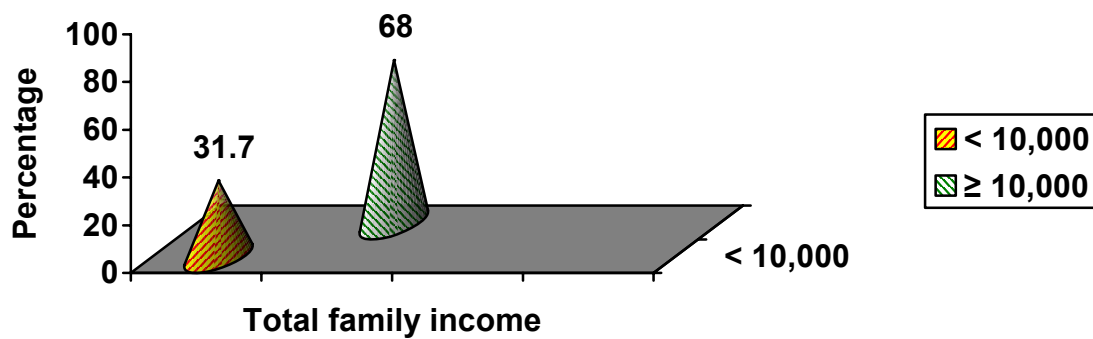


FIGURE – 7: PERCENTAGE DISTRIBUTION OF MONTHLY INCOME AMONG PREADOLESCENT GIRLS



FINDING RELATED TO FREQUENCY OF PERCENTAGE DISTRIBUTION OF KNOWLEDGE SCORES OF PRE ADOLESCENT GIRLS REGARDING MENARCHE

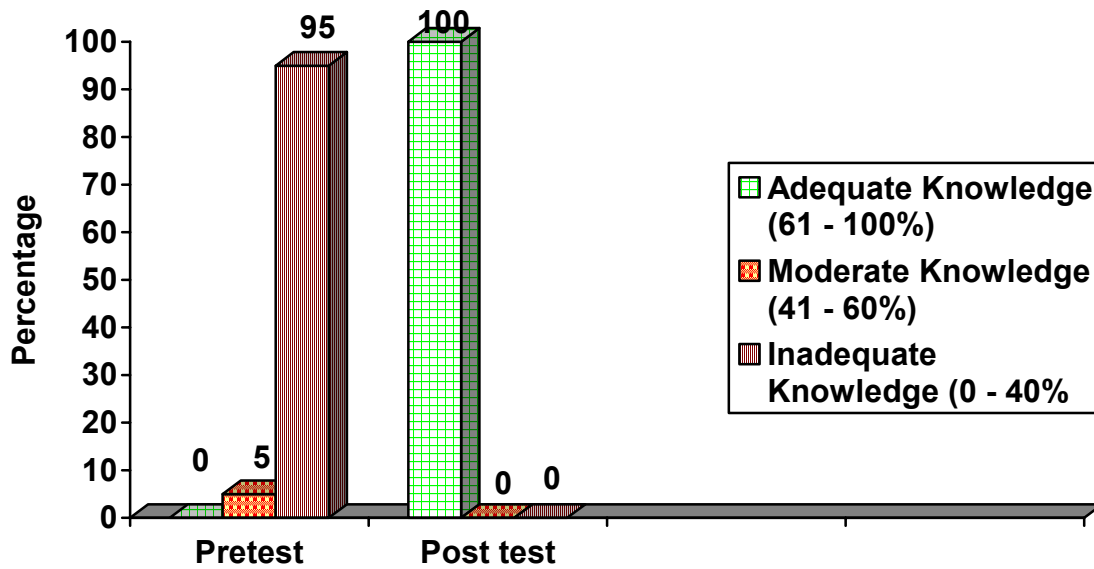
TABLE - 2: ASSESSMENT OF KNOWLEDGE BEFORE AND AFTER STRUCTURED TEACHING PROGRAMME

N=60

Level of Knowledge	Pretest		Post test	
	Frequency	Percentage	Frequency	Percentage
Adequate Knowledge (61 – 100%)	0	0	60	100
Moderate Knowledge (41 – 60%)	3	5.0	0	0
Inadequate Knowledge (0 – 40%)	57	95.0	0	0

The above table-2 illustrates the level of knowledge of preadolescent girls before as well as after structured teaching programme. Before including of the structured teaching programme only 3 (5%) girls had moderate knowledge on puberty and the remaining 57 (95%) girls had inadequate knowledge. After the structured teaching programme, (100%) of girl's attained adequate knowledge.

FIGURE - 7: ASSESSMENT OF KNOWLEDGE BEFORE AND AFTER STRUCTURED TEACHING PROGRAMME



FINDINGS RELATED TO RANGE, MEAN, MEDIAN, STANDARD DEVIATION OF PRE TEST AND POST TEST KNOWLEDGE SCORE OF PRE ADOLESCENT GIRLS REGARDING MENARCHE

TABLE-3: PRE TEST AND POST TEST KNOWLEDGE SCORE OF PRE ADOLESCENT GIRLS REGARDING MENARCHE

N=60				
Knowledge	Range	Mean	Median	Standard Deviation
Pre test	0-12	5.2	5.5	2.8
Post test	14-19	16.2	16	1.4

Note: the maximum possible score =20

The score range obtain in the pre test varied from 0 and in the post test from 14.it is an evident from table 3 that the post test mean 16.2 is higher than the pre test mean 5.2, also post test median 16 is higher than pre test median 5.5.the findings also reveals that the pre test scores are more dispersed, then the post test.

TABLE-4: EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME

Scores	Pretest		Post test	
	Frequency	Percentage	Frequency	Percentage
0-5	21	35.0	0	0.0
5-10	34	56.7	0	0.0
10-15	5	8.3	9	15.0
15-20	0	100.0	60	100.0
Medium (Range)	5.5 (0-12)		16 (14-19)	
Mean \pm S.D	5.2 \pm 2.8		16.2 \pm 1.4	
t (df)	25.974 (df=59)			
Significance	P<0.001			

The Effectiveness of structured teaching programme result shown in the above table-4revealed that the median score of the study participants before introduction of teaching programme was 5.5 (0-12) and after introduction of the structured teaching programme was 16 (14-19). The mean score of the pre test was 5.2 \pm 2.8 and of the post test was 16.2 \pm 1.4. The difference of mean knowledge scores between the pre test and post test was statistically significant (t=25. 974 df=59 and p<0.001).

TABLE - 5: MEAN, MEAN DIFFERENCE, STANDARD DEVIATION OF MEAN DIFFERENCE, STANDARD ERROR OF MEAN DIFFERENCE AND t VALUE OF PRE TEST AND POST TEST KNOWLEDGE SCORE OF PRE ADOLESCENT GIRLS REGARDING MENARCHE.

Knowledge	Mean	MD	SDMD	SEMD	t value
Pre test	5.2				
		11	1.4	0.18	25.974
Post test	16.2				

This data presented in the table 5 shows the mean knowledge score is higher in the post test (16.2) than the pre test (5.2), $t=25.974$, the value of P lies between 3.5 and 3.4 and hence it is less than calculated value of 25.974.

The above finding supports the research hypothesis H1 and the null hypotheses H01 was rejected. Hence the structured teaching programme had an influence in improving the knowledge of pre adolescent girls regarding menarche.

**THE RELATIONSHIP BETWEEN PRE TEST KNOWLEDGE
SCORES AND DEMOGRAPHIC VARIABLES**

**TABLE - 6: THE RELATIONSHIP BETWEEN PRE TEST KNOWLEDGE
SCORES AND DEMOGRAPHIC VARIABLES.**

Category	Below Mean	Above Mean	Total N=60	χ^2	P value
Age in Years					
a. 11	11	14	25		
b. 12	14	11	25	0.720	>0.05#
c. 13	5	5	10		
Standard					
a. VI	16	20	26	0.267	>0.05#
b. VII	14	10	24		
Religion					
a. Christian	16	20	26	1.111	>0.05#
b. Hindu	14	10	24		
Education of Mother					
a. Graduation	11	19	30		
b. Higher					
Secondary	2	7	9	12.959	<0.01*
c. High School	17	4	21		
Type of family					
a. Joint	20	23	43	0.739	>0.05#
b. Nuclear	10	7	17		
Monthly income					
a. <10,000	10	9	19	0.077	>0.05#
b. \geq 10,000	20	21	41		

* Significant at 0.01 level.

Not significant at 0.05 level

Data on table 6 shows the relationship of knowledge scores regarding menarche with selected variable and chi-square test was computed.

The findings reveal that there was significance association between pre test knowledge score and education of mother ($\chi^2=12.959, \underline{df}=2$). But there is no association between pre test knowledge score and age ($\chi^2 =0.720, \underline{df}=2$), standard ($\chi^2 =0.267, \underline{df}=1$), religion ($\chi^2=1.111, \underline{df}=1$), type of family ($\chi^2=0.739, \underline{df}=1$) and total family income ($\chi^2=0.077, \underline{df}=1$).

CHAPTER – V

DISCUSSIONS

This study evaluated the effect of structured teaching programme on menarche. The study findings are discussed in this chapter with reference to the hypothesis.

CHARACTERISTICS OF THE PRE ADOLESCENT GIRLS

1. The majority of participants 25(41.7%) were falling in the age group of 11 yrs, 25(41.7%) were falling in the age group of 12yrs and 10 (16.6%) were 13 yrs.
2. Most of the students 26(60%) were 6th standards, 24(40%) were 7th standards.
3. Regarding religion most of the students 26(60%) are Christians and 24(40%) were Hindus.
4. Regarding the mothers education the majority of the mothers were 30 (50%) were graduated 9(15%) had higher secondary education and 21(35%) were high school.
5. Majority of the students 43(71.6%) were joint family and 17(28.3%) were nuclear family.
6. Regarding total family income most of the students 41 (68.3%) Rs. \geq 10,000 19 (31.6%) students family income was $<$ 10,000.

2) KNOWLEDGE OF STUDENTS REGARDING MENARCHE AMONG PRE ADOLESCENT GIRLS.

I. Comparison of pre test and post test knowledge score

In pre test 57(97%) of the pre adolescent girls had inadequate knowledge and only 3(5%) had moderate knowledge whereas in post test 60(100%) of the pre adolescent girls had adequate knowledge. The result shows that there was a marked difference in the pre test and posttest level of knowledge of pre adolescent girls.

II. Comparison of range, mean, median, standard deviation of pretest and post test knowledge score of pre adolescent girls regarding menarche.

The score range obtained in the pre test varied from(0-12) and in the post test from 14-19.It was evident that from table 3 was the post test mean(5.2) and the findings also revealed that the pre test scores were less dispersed, pretest SD \pm 2.8 and post test SD \pm 1.4. The median for pre test was (5.5) and the post test was (16).

3. EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING MENARCHE AMONG PRE ADOLACENT GIRLS

I) Comparison of mean pre test with mean post test knowledge score of pre adolescent girls.

The mean post test knowledge score was (16.2) was higher than the mean pre test knowledge score (5 .2) and the mean difference was 11. The obtained't' value

($t=25.974, df=59$) was significant. There was a significant difference in pre test and post test score which indicate effectiveness of structured teaching programme.

II) Comparison of mean, mean difference, standard deviation of mean difference, standard error of mean difference and 't' value of pre test and post test knowledge scores regarding menarche among pre adolescent girls.

The mean post test knowledge scores at pre adolescent girls (16.2) was higher than the mean pretest knowledge scores (5.2) and the mean difference was 11. The obtained t value ($t=25.974, df 5.9$) was significant at 0.01 level. It indicates that the structured teaching programme has played a significant role in improving the knowledge of pre adolescent girls.

ASSOCIATION BETWEEN PRE TESTS KNOWLEDGE SCORE AND SELECTED DEMOGRAPHIC VARIABLES:

The data on table 6 shows that there was a significant association between knowledge and education of mother the obtained χ^2 value for Education 12.95 at $df=2$ was significant at 0.01 level. Also it shows that there is no significant association between knowledge and age, standard, religion, type of family and total monthly family income. The obtained χ^2 for Age ($\chi^2=0.120, df=2$), Standard ($\chi^2=0.267, df=1$) Religion ($\chi^2=0.720, df=1$), Type of family ($\chi^2=0.739, df=1$) and total family income ($\chi^2=0.077, df=1$) was not significant 0.05 levels .

CHAPTER-VI

SUMMARY AND RECOMMENDATIONS

This chapter deals with the summary of the study and the conclusion drawn. It clarifies the limitation of the study and the implications. The recommendations for different areas like nursing education, public education, nursing administration and nursing research.

SUMMARY

This study was undertaken to determine the knowledge of pre adolescent girls regarding menarche.

THE OBJECTIVES OF THE STUDY

- ❖ To assess the level of knowledge regarding menarche before and after structured teaching programme among preadolescent girls
- ❖ To evaluate the effectiveness of structured teaching programme regarding menarche among preadolescent girls.
- ❖ To associate the pretest knowledge score among preadolescent girls regarding menarche with selected demographic variables, Such as age, religion, education of mother, type of family and total family income.

Justification for undertaking this study was to develop a structured teaching programme regarding menarche among pre adolescent girls to determine its effect, so that the structured teaching programme will enable them to improve their knowledge regarding menarche.

Preparing a structured teaching programme on menarche will be of importance in educating the pre adolescent girls to increase their knowledge and help to prevent complication to lead a normal healthy life.

Reliability of the tool was found by using test retest method ($r=0.993$). The tool was validated by five experts in obstetric and gynecological nursing. Pilot study was conducted on six adolescent girls to find out the feasibility of the study. Pretest was conducted for the experimental group and their knowledge was assessed regarding menarche. After the pre test structured teaching programme was given to pre adolescent girls in the experiment group after 5 days. Post test was done with the same tool. Data was analyzed using descriptive and inferential statistics.

FINDINGS OF THE STUDY

1. CHARACTERISTICS OF THE PRE ADOLESCENT GIRLS

- i. The majority of pre adolescent girls 41.7 %(25) were in the age group of 11 years 41.7% (25) were years and 16.6 %(10) were 13 years.
- ii. Regarding the standards the majority of pre adolescent girls 60 %(36) VI standards, and 40 %(24) were VII standards.
- iii. Majority of the students 60 %(36) were Christians and 40% (24) were Hindus.

- iv. Regarding the mother's education the majority of the mothers 50 % (30) were graduated, 15 % (9) had secondary education and 35 % (21) had high school education.
- v. Majority of the students 71.6% (43) belongs to Joint family and 28.3% (17) belongs to nuclear family
- vi. Regarding total family income, most of the students total family income was 68.3% (19) above Rs. \geq 10,000, and 31.6 % (41) was $<$ 10,000.

2. KNOWLEDGE OF STUDENTS REGARDING MENARCHE

i. Comparison pretest and post test knowledge scores.

In the pretest 95% of the preadolescent girls had inadequate knowledge and 5% had moderately adequate knowledge where as in post test 100% of the student had adequate knowledge. The result shows that there is marked difference in the pre test and post test knowledge scores of pre adolescent girls regarding menarche.

ii. Comparison Range, mean, median standard deviation of pre test and post test knowledge scores of pre adolescent girls regarding menarche

The score range obtained in the pre test varied from 0-12 and in the post test from 14-19. It was evident from table 3 that the post test mean (16.2) was

higher than pre test mean (5.2). The standard deviation for pre test is 2.8 and for post test is 1.4. The median of pre test is 5.5 and for post test is 16.

3. EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING MENARCHE

i. Comparison of mean pre test with mean post test knowledge score of pre adolescent girls:-

The mean post test knowledge score (16.2) was higher than the mean pre test knowledge score (5.2) and the mean difference is 11. The obtained 't' value ('t' = 25.975, df 59) was significant at 0.01 level. It implies that structured teaching programme has significant effect in increasing the knowledge and there is a significant difference in the group with regard to the knowledge before and after structured teaching programme

ii. Comparison of mean difference standard deviation of mean Difference and 't' value of post test knowledge score regarding menarche.

The Mean post-test knowledge score of Adolescent girls (16.2) was higher than the mean pretest knowledge score of the control group (5.2). The mean difference is (11). The obtained t value ($t = 25.974$, df = 59) was significant at 0.01

level. It indicates that the structured teaching programme has played a significant role in improving the knowledge of experimental group.

4. ASSOCIATION BETWEEN PRE TEST KNOWLEDGE SCORE AND SELECTED DEMOGRAPHIC VARIABLES:-

There was a significant association between knowledge score and education of mother. But there was no association between the knowledge score and other demographic variables such as Age, Standard, Religion, Type of family and Family monthly income.

IMPLICATIONS

Menarche is one of the natural processes among the female children, Hence the need to know regarding menarche is more important. The implications which have been made in the study are of vital concern for health planners, education planners, and nurse educators.

IMPLICATION FOR NURSING PRACTICE

The finding of the study clearly enlighten the fact structured teaching programme regarding menarche had significantly improved the knowledge of the preadolescent girls and it will help them to lead a healthy living.

- i. Nursing persons are in best position to impart knowledge regarding menarche to the preadolescent girls in the schools, hospital and communities.
- ii. The nurse educator needs to prepare self instructional materials such as learning package which can be placed in schools and all the community.
- iii. The nurse educator needs to prepare a chart related to menarche which can be placed in the schools and community.
- iv. Health education on menarche and menstrual hygiene can be conducted in these schools yearly among the pre adolescent girls in school or community.

IMPLICATIONS FOR NURSING EDUCATION

- i. The nurse should be equipped with up to date knowledge on menarche, so that they can be able to impart appropriate knowledge.
- ii. The nursing students must be encouraged to actively participate in education of pre adolescent girls regarding menarche by using appropriate adequate visual aids.
- iii. There should be more emphasis on menarche, menstrual hygiene and need to be included in curriculum.

IMPLICATIONS FOR PUBLIC EDUCATION

Carefully prepared menarche health education programme as part of mass educations, will be used in creating awareness among the general public and mothers who have pre adolescent girls regarding menarche for the maintenance of healthy life style. Awareness should be created from school itself. Nurses are the vital source of educating the public through such programme.

IMPLICATIONS FOR NURSING ADMINISTRATION

- i. Nursing personnel working on various settings should be given in -service education to update their knowledge and abilities in identifying learning needs of the preadolescent girls with menarche and plan for appropriate intervention.
- ii. The administrators should emphasis and encourage the nurses to conduct periodic menarche and menstrual hygiene programmes.
- iii. Nurse administrators should encourage nursing students to prepare and utilize effective audio visual aids on menarche.

IMPLICATIONS OF NURSING RESEARCH

- i. It is essential to identify the present level of knowledge regarding menarche among preadolescent girls to know what the required information is.

- ii. Extensive research must be conducted in this area to identify more effective methods of educating the preadolescent girls on this issue.
- iii. This study also brings about the fact that more studies need to be done at different settings which is culturally acceptable with better teaching strategies of education.
- iv. This study can be a base line for the future studies to build upon.

LIMITATIONS

The limitations of the study are as follows,

The study was conducted among pre adolescent girls from selected school Nagercoil at kanyakumari District. So generalization can be done with caution.

RECOMMENDATIONS

Based on the findings of the study recommendations for future study are,

- i. The study can be done with larger group of people.
- ii. Further studies can be conducted to develop menarche health education programme for preadolescent girls in different schools in urban and in rural areas.
- iii. A comparative study can be carried out to ascertain the knowledge and attitude regarding menarche among preadolescent girls in rural and urban areas.

- iv. Comparative study can be done between effectiveness of self instructional module versus structured teaching programme.
- v. A study can be made to compare the effectiveness of menarche health education programme with other methods of teaching (eg: films, video, tapes).
- vi. The structured teaching programme should be reviewed from time to time in order to incorporate the current trends in the field of menarche.

RECOMMENDATION BASED ON THE SUGGESTIONS OF THE STUDY SUBJECTS

- i. Menarche health education programmes should be conducted by professionally trained personnel.
- ii. Mass media should be effective for conducting programme of menarche health education.
- iii. Menarche health education for preadolescent girls should be culturally oriented.

CONCLUSIONS

The following conclusions were drawn from the study,

1. There was a significant difference in mean post test knowledge score and mean pre test knowledge score regarding menarche ($t= 25.974$, $df = 59$).
2. There was a significant association between pre test knowledge score and education of mother. But there was no association between age, standard, religion, Type of family and monthly income of the family.
3. The study was done on a small sample 60 students. Hence generalization is possible for the selected participants.

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APPENDIX – I A

COPY OF LETTER SEEKING PERMISSION TO CONDUCT RESEARCH STUDY



CHRISTIAN COLLEGE OF NURSING

C.S.I. KANYAKUMARI DIOCESE

(Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai)

Approved by Indian Nursing Council New Delhi and Tamil Nadu Nurses and Midwives Council, Chennai

NEYYOOR - 629 802

KANYAKUMARI DISTRICT, TAMIL NADU, INDIA.

Principal

Prof. (Mrs.) SANTI APPAVU, M.Sc.(N), M.Phil.
Phone : Per : 04651-221599, Off : 04651-221411

Fax : 04651-224382

E-mail : ccn.neyyoor@yahoo.com

Web : www.ccnneyyoor.org

Date :26.04.2010.....

71M.Sc(N)2010

To

The correspondent

Stella's Matriculation School

Anjugramam, Kanyakumari District.

Respected Madam,

Sub : Requisition for getting permission to do research study to assess the effectiveness of structured teaching programme on menarche among the pre adolescent girls in selected schools at Nagercoil, K.K. Dist with a view to develop a pamphlet.

This is to introduce Mrs. P.R.G.Paul Reji, II year M.Sc. Nursing student of this College. She is to conduct a research project which is to be submitted to the Tamil Nadu Dr. M.G.R. Medical University, Chennai in partial fulfillment of University requirements for the award of M.Sc. degree in Nursing.

Topic:

A study to assess the effectiveness of structured teaching programme on menarche among the pre adolescent girls in selected schools at Nagercoil, K.K. Dist with a view to develop a pamphlet.

This student is in need of your esteemed help and co-ordination as she is interested in conducting her research study in your well esteemed institution.

This is to request you to kindly extend necessary facilities to her work on her proposed study during the month of May 2010.



Yours Faithfully,

PRINCIPAL
CHRISTIAN COLLEGE OF NURSING
NEYYOOR - 629802
K.K.DIST., TAMILNADU

APPENDIX – I B
LETTER SEEKING EXPERTS OPINION FOR
VALIDITY OF TOOL

From

Mrs. P.R.G.Paul Reji
M.Sc(Nursing) II year,
Christian College of Nursing,
Neyyoor.

To

Respected Madam,

I am doing II year M.Sc Nursing in Christian College of Nursing, Neyyoor. As a partial fulfillment of the course, I have chosen a topic of my interest **A study to assess the effectiveness of structured teaching programme on menarche among the pre adolescent girls in selected schools at Nagercoil, K.K. Dist with a view to develop a pamphlet.**

As an initial step, I have prepared a tool and structured teaching programme content to assess the knowledge among pre adolescent girls regarding menarche.

I hereby kindly request you to evaluate the tool based on the evaluation criteria. Your opinion and suggestions will help me to the successful completion of my study.

Thanking You,

Yours Truly,

(P.R.G.Paul Reji)

APPENDIX – II A

LIST OF EXPERTS WHO HAVE VALIDATED THE TOOL

- **Dr. Reena Rajesh, M.B.B.S., M.D., D.G.O.,**
Head of the Department,
Obstetrical and Gynecology,
Kanyakumari Medical Mission C.S.I. Hospital, Neyyoor,
South India.
- **Mrs. Henita, M.Sc(N),**
Asst. Prof. in Obstetrics and Gynecological Nursing,
Dr. SMCSI College of Nursing,
Karakonam,
Trivandrum, South India.
- **Mrs .Shanthi Latha ,M.Sc(N),**
Reader in Obstetrics and Gynecological Nursing,
Sri Mookambika College of Nursing
Kulasekaram.
- **Mrs.Anitta, M.Sc(N),**
Asst. Prof. in Obstetrics and Gynecological Nursing,
St Xavier Catholic College of Nursing,
Chunkankadai,
Nagercoil.
- **Mrs. Violine Sheeba, M.Sc(N),**
Reader in Paediatrics Nursing
Sri Mookambika College of Nursing
Kulasekaram.
- **Mrs.G.Feby ,M.Sc(N),**
Reader in Community Nursing
Sri Mookambika College of Nursing
Kulasekaram.
- **Mrs.Suguna ,M.Sc(N),**
Vice Principal
Obstetrics and Gynecological Nursing,
Nehru Nursing College
Vallioor.

APPENDIX – II B

EVALUATION CRITERIA CHECK LIST FOR TOOL VALIDATION

Instruction

The expert is requested to go through the following criteria for evaluation of check list. Three columns are given for response and a column for remarks. Kindly place a tick mark in the appropriate column and give remarks.

Interpretation of columns

- Column I - Meets the Criteria
 Column II - Partly meets the Criteria
 Column III - Does not meet the criteria

S.No	Criteria	I	II	III	Remarks
1.	Scoring <ul style="list-style-type: none"> • Adequacy • Clarity • Simplicity 				
2	Content <ul style="list-style-type: none"> • Logical sequence • Adequacy • Relevance 				
3	Language <ul style="list-style-type: none"> • Appropriate • Clarity • Simplicity 				
4	Practicability <ul style="list-style-type: none"> • It is easy to score • Does it precisely • Utility 				

Any other suggestions -----

Signature :

Name :

Designation :

Address :

APPENDIX – III A

Instruction

These questions are related to knowledge regarding menarche; it will be used only for research purpose. Select the correct answer from the given option.

In this section A and B is present. Each question has 3 options. The correct answer has a score of 1.the wrong answers have a score of 0.

Tick the appropriate answer in the box provided.

Section - A

Demographic Data

1) Age in years

a) 11 years

b) 12 years

c) 13 years

2) Standard

a) 6th

b) 7th

c) 8th

3) Religion

a) Hindu

b) Christian

c) Muslim

4) Education of the mother

a) Graduation

- b) Higher secondary
 - c) High School
- 5) Type of family
- a) Joint
 - b) Nuclear
- 6) Total – family income
- a) $< 10,000$
 - p) $\geq 10,000$

Section - B

Questionnaire to assess the student's knowledge related to menarche

- 1) The female reproductive organ that produce hormones at puberty is
- a) Uterus
 - b) Ovary
 - c) Fallopian tubes
- 2) At puberty the amount of oil secreted by the glands will be
- a) Increased
 - b) Decreased
 - c) No change
- 3) The hormones produced by the ovaries are
- a) Thyroid hormone
 - b) Estrogen, progesterone
 - c) Progesterone

4) The Number of ovaries present in our body

a) 1

b) 2

c) 3

5) The period at which the internal reproductive organ reaches maturity is called

a) Puberty

b) Menstruation

c) Menopause

6) The bloody discharge that trickles out of the body through vagina occurs during

a) Menstruation

b) Fertilization

c) Menopause

7) The release of ovum from ovary is called

a) Fertilization

b) Menstruation

c) Ovulation

8) The changes that occur in the face at the time of puberty

a) Pimple

b) Odour

c) Hair

9) One of the early changes in puberty

a) Fresh blood

b) Whitish discharge

c) Blood clots

10) The menstrual cycle occurs once in a period of

a) 5 days

b) 15 days

c) 30 days

11) The period of menstruation occurs for a maximum of

a) 5-7 days

b) 7 -9 days

c) 9-11 days

12) The menarche is attained between

a) 12-13 years

b) 13-14 years

c) 14-15 years

13) The ovum is released into uterus with in

a) 5to7 days

b) 12to14 days

c) 20to22 days

14) During menstruation one might have/be

a) Happy

b) Mood change

c) Proud

15) Menstruation is a

a) Normal changes

b) Sickness

c) Daily Process

16) The average blood loss during the menstrual cycle is

a) 50 - 100 ml

b) 100-150 ml

c) 150-200 ml

17) The safe method to absorb menstrual flow is

a) Sanitary pads

b) Cloth

c) Sponge

18) Pads must be changed once in every

a) 4-6 hours

b) 7-8 hours

c) 9-11 hours

19) Disposal of pads should be done in

a) Toilet

b) Open field

c) Waste basket

20) To prevent infection always wipe the perineum from

a) Front to back

b) Back to front

c) Side to side

APPENDIX – 1V
STRUCTURED TEACHING PROGRAM ON MENARCHE AMONG
PREADOLESCENT GIRLS

Topic	:	Menarche
Group	:	Pre adolescent girls
Place	:	Stella's Matriculation School
Time	:	45 minutes
Name of the teacher	:	P.R.G.Paul Reji
Method of teaching	:	Lecture cum discussion
Teaching aids	:	liquid crystal display projector,Pamphlet
General Objectives	:	Pre adolescent girls acquire adequate knowledge regarding menarche and apply skill in maintaining healthy life.
Specific Objectives	:	<ul style="list-style-type: none">➤ definition of menarche.➤ definition of puberty.➤ explain the female reproductive organ.➤ describe the sexual development.➤ mention the changes in reproductive organs at menarche.➤ explain the menstrual hygiene.

APPENDIX – V

STRUCTURED TEACHING PROGRAMME ON MENARCHE

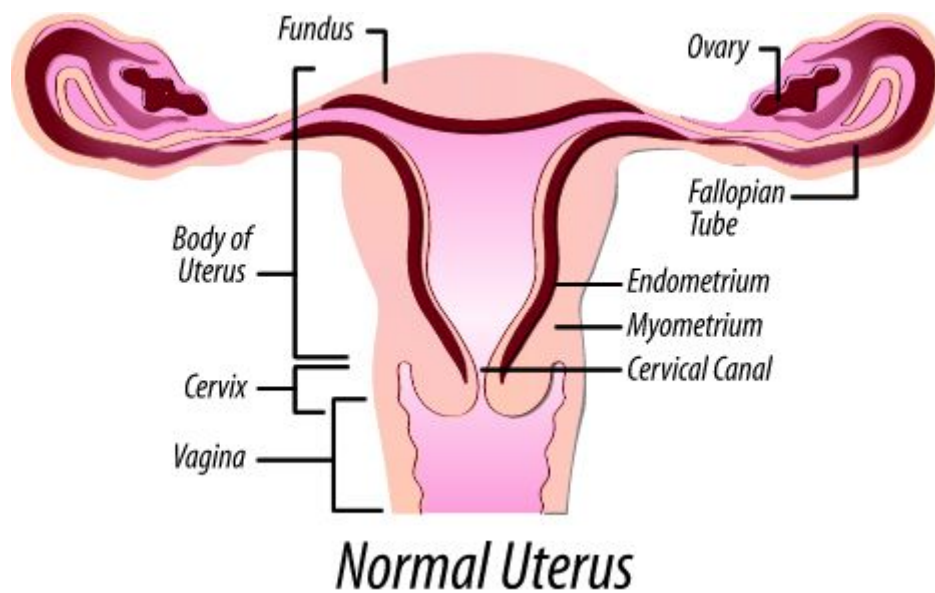
DEFINITION OF MENARCHE

Puberty is the change at which the internal reproductive organs reach maturity this is called menarche.

DEFINITION OF PUBERTY

The first menstrual period, usually occurring during puberty.

FEMALE REPRODUCTIVE ORGAN



External Genitals

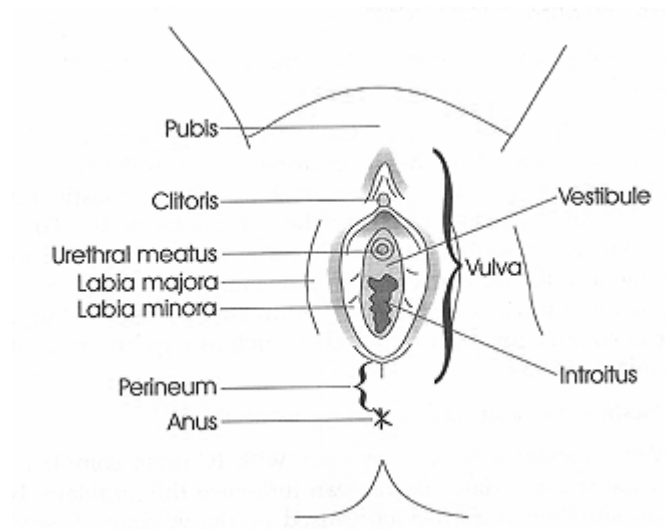
The reproductive organs external to the body.

Vulva

- Consists of labia majora and labia minora (outer and inner folds of skin)

Clitoris

- Small, sensitive organ located above the opening to the vagina



Three openings

- Urethra, vagina, anus

The internal reproductive organ:

The reproductive organs within the body.

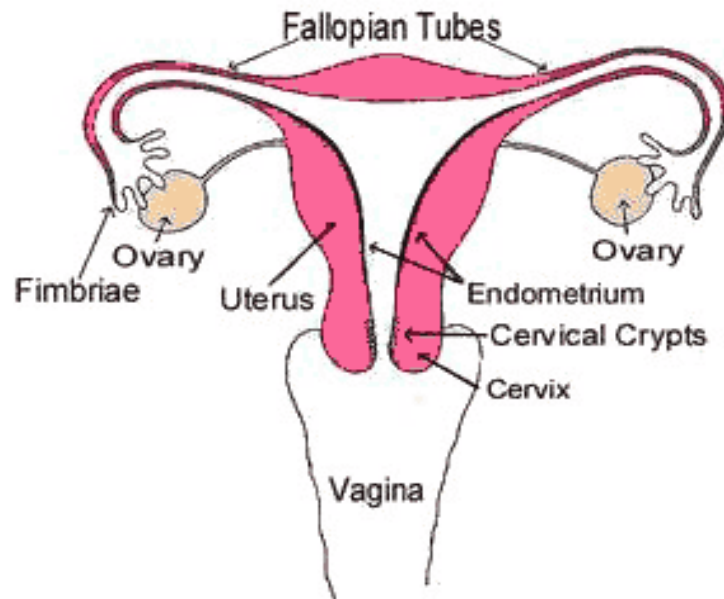
Vagina

- Leads to the other internal reproductive organs.
- Used for menstruation, childbirth.
- Not used for urination – opening just above vagina, called the urethra, is used for this purpose (side view diagram explains this concept best)
- A thin membrane (the hymen) surrounds the vaginal opening.

Uterus

- Also called the womb
- Special place in woman's body where baby grows
- Very low in abdomen, nowhere near the stomach, about the size of a fist

Fallopian tubes



- Two tubes on either side of the uterus
- Passageway from the uterus to ovary

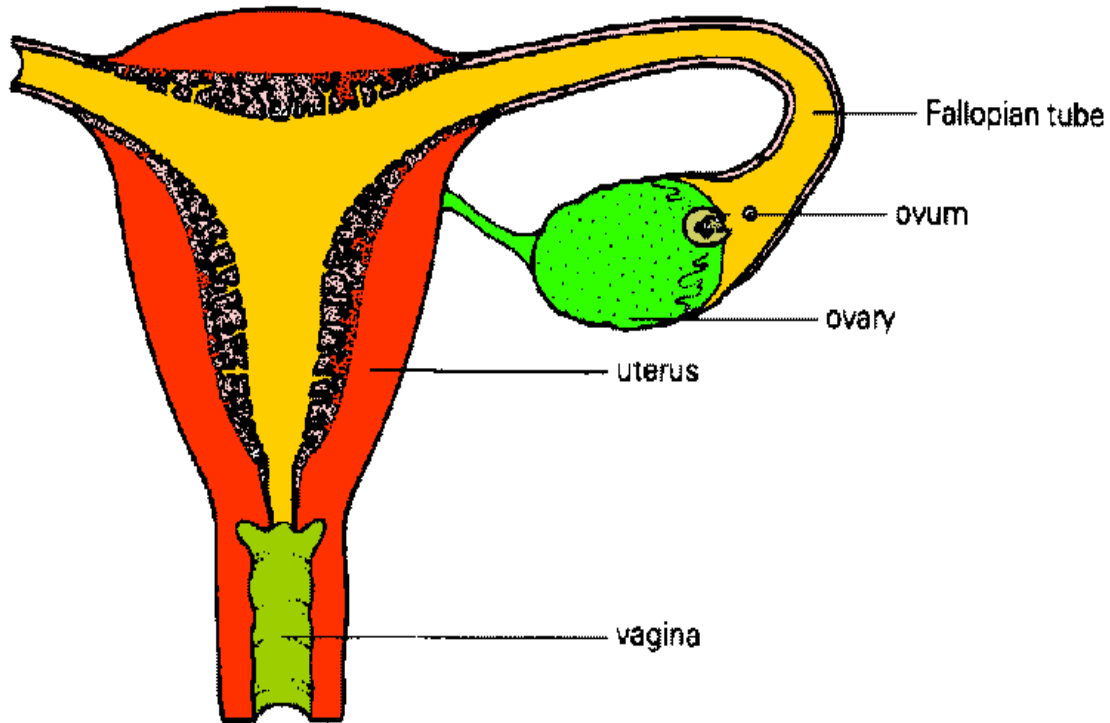
Ovaries

- Females have 1-2 ovaries
- Start producing hormones at puberty like estrogen and progesterone.

Hormone: A chemical substance produced in the body that controls and regulates the activity of certain cells or organs.

Ovum

Ovum: An egg in the ovary of the female. This egg is called the female "gamete"



The ovum. The ovum travels through the Fallopian tube to the uterus.

- Also called egg cell
- All girls are born with their reproductive organs but they do not start to develop and function until puberty.

SECONDARY SEXUAL DEVELOPMENT

1. Anatomical changes In Menarche:

- The uterus, the uterine tubes and the ovaries develop maturity.
- The menstrual cycle and ovulation begin.

- The breast develops and enlarges.
- Pubic and auxiliary hair begins to grow.
- There is an increase in the rate of growth in height and widening of the pelvis.
- There is an increase amount of fat deposited in the subcutaneous tissue especially at the hips and breast.

The vocal cords are not activated by hormones and voices of girls remain almost similar to their pre-adolescent voice.

2. Physical Changes in Menarche:

1. Skin

a)Face

- At puberty during adolescence, glands secrete an increased amount of oil.
- Increased hormones are responsible for this change.
- Pores get clogged with oil and dirt.
- The blocked area can form a pimple.
- Everyone will get a few pimples.

Some people may require treatment by a doctor.

Prevention

- ❖ Wash face with unscented soap and water daily.
- ❖ Do not squeeze or pick pimples, as this can cause infection.
- ❖ Avoid creams and cosmetics that contain oil, and make sure all cosmetics are removed before going to bed.
- ❖ Drink plenty of water.

- ❖ Rest.
- ❖ Wash hair regularly and keep back from face.

b) Perspiration

- At puberty, perspiration (sweating) increases.
- In combination with bacteria on the skin, an odour can result—sometimes called “body odour.”
- People perspire all the time – not just during physical activity.
- Underarms, groin area, palms of hands, and soles of feet tend to perspire more.

To combat perspiration, people can

- Bathe or shower regularly (or wash underarms, genitals, hands and feet)
- Use deodorants or antiperspirants
- Wear clean clothes.

CHANGES IN REPRODUCTIVE ORGANS AT MENARCHE

Discharge

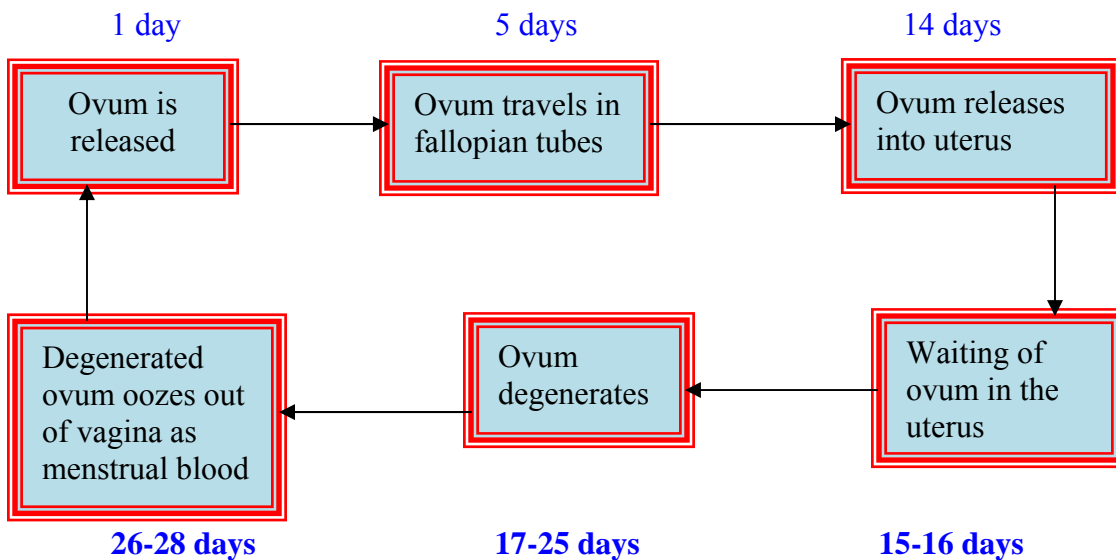
- Keeps vagina clean and healthy
- One of the early changes in menarche. A girl may notice some discharge on her underwear. It varies from whitish and pasty to clear and slippery. This means a girl’s body is starting to mature and her period will be starting.
- If bad odour, itchy or unusual, may be an infection

Ovulation

- Once ovaries start producing estrogen and progesterone hormones, the message is given to ovary to start releasing.
- One ovum, once a month from one ovary
- Usually a girl cannot feel this happening
- If egg is not fertilized in a day or so, it dissolves

Menstruation

Menstrual cycle



Degenerate: to lose function due to change in the function of a cell, tissue or organ

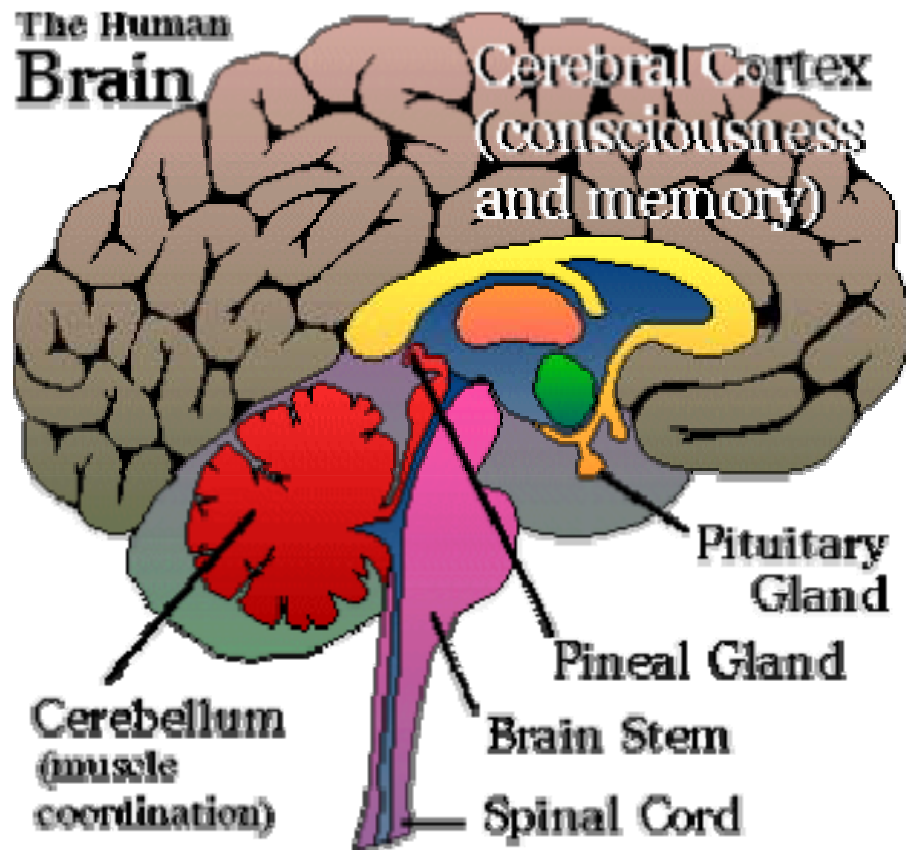
- The menarche occurs at the age of 12-13 years much earlier than the normal is called early puberty.
- The menstrual cycle occurs in most women every 28- 30 days .in some women menstrual cycle varies.
- The average duration of menstrual flow is 5-7 days and the average blood loss is 50-100 ml but these vary greatly.
- This is a normal change of puberty – something to be proud of – not
- Something dirty or bad
- Some women experience menstrual cramps.

3. Emotional changes in Menarche:

- May feel confused.
- May develop very strong emotions.
- May feel sad.
- Might have frequent mood changes.
- Might be over sensitive.
- Might get angry and lose your temper more easily.
- Might experience a sense of not belonging to your family, friends etc.
- Might experience problems at school.
- May ask yourself is it normal to feel what you are feeling.

HOW DOES MENARCHE HAPPEN

PITUITARY GLAND:



- Master gland is situated in the centre of the brain
- Sends out chemical messages to all parts of the body through the blood stream
- “Messages” are in the form of substances called hormones
- Puberty begins because the pituitary gland sends out hormone messages to certain parts of the body to tell them to change.
- These hormone messages go to two special glands:
- In girls – ovaries

MENSTRUAL HYGIENE:

- Menstruation is a normal change of puberty. It is not a sickness – usually can continue to participate in regular daily activities (e.g. physical education classes, gymnastics, swimming, etc.)
- Personal hygiene (i.e. bathing) even more important at this time as oil secretion from hair and skin may increase and menstrual blood may get dried in pubic hair
- Sanitary pads are used to absorb menstrual fluid
- Always wipe from front to back to help prevent infection
- 3 meals a day; drinking plenty of water
- Breakfast every day
- Adequate sleep

Pads

- Various sizes of pads available, as the flow varies
- Pads have adhesive strip which sticks to underwear
- Necessary to wear protection 24 hours a day
- Must change pads frequently, approximately every 3-4 hours
- Dispose of pads in wastebasket rather than toilet (wrap in toilet paper first)
- Scented pads may irritate some people's skin

Summary

As a whole we have discussed about menarche, female reproductive organ, changes in reproductive organs at menarche, menstrual hygiene

APPENDIX- V**SCORE KEYS**

Knowledge related to menarche, physical and emotional changes and menstrual hygiene

QUESTION NO	ANSWERS
1	b
2	a
3	b
4	b
5	a
6	a
7	c
8	a
9	b
10	c
11	a
12	a
13	b
14	b
15	a
16	a
17	a
18	a
19	c
20	a

APPENDIX- VI

SCORE OBTAINED BY THE PRE ADOLESCENT GIRLS

SAMPLE NO	PRETEST	POST TEST
1	6	16
2	4	17
3	6	17
4	6	14
5	7	16
6	5	15
7	6	15
8	10	14
9	5	16
10	0	16
11	6	17
12	4	14
13	6	18
14	9	17
15	3	19
16	7	15
17	3	14
18	4	16
19	5	16
20	6	17
21	6	15
22	3	18
23	6	15
24	3	16
25	9	17
26	3	18
27	1	18
28	5	16
29	1	16
30	3	14
31	5	18
32	1	19
33	8	17
34	4	18
35	4	18
36	5	16
37	7	17
38	7	17

SAMPLE NO	PRETEST	POST TEST
39	6	17
40	5	18
41	5	15
42	6	14
43	0	15
44	6	15
45	10	16
46	7	17
47	1	17
48	11	14
49	12	18
50	11	14
51	6	17
52	2	15
53	0	15
54	2	16
55	6	15
56	7	14
57	1	16
58	8	17
59	5	17
60	7	18