



International Journal of Obstetrics and Gynaecological Nursing

E-ISSN: 2664-2301
P-ISSN: 2664-2298
IJOGN 2020; 2(2): 76-79
Received: 11-05-2020
Accepted: 15-06-2020

Dr. S Kala Barathi
Department of Obstetrics &
Gynecological Nursing,
Saveetha College of Nursing,
SIMATS, Thandalam,
Chennai, Tamilnadu, India

Jesintha Esther Rajathi A
Department of Obstetrics &
Gynecological Nursing,
Saveetha College of Nursing,
SIMATS, Thandalam,
Chennai, Tamilnadu, India

Joy Lovis
Department of Obstetrics &
Gynecological Nursing,
Saveetha College of Nursing,
SIMATS, Thandalam,
Chennai, Tamilnadu, India

Kalpna Devi V
Department of Obstetrics &
Gynecological Nursing,
Saveetha College of Nursing,
SIMATS, Thandalam,
Chennai, Tamilnadu, India

Corresponding Author:
Dr. S Kala Barathi
Department of Obstetrics &
Gynecological Nursing,
Saveetha College of Nursing,
SIMATS, Thandalam,
Chennai, Tamilnadu, India

A study to assess the effectiveness of structure teaching programme on knowledge regarding eating habits leads to early puberty among pre-adolescent girls residing at Koyembedu

Dr. S Kala Barathi, Jesintha Esther Rajathi A, Joy Lovis, Kalpna Devi V

Abstract

Adolescent is a transitional stage of physical and physiological development that usually occurs during the period from puberty to authorized adulthood usually connected with teenage years. Puberty is a subject that mesmerizes and ward off, a stage that all human progress through, puberty is both extremely personal and an up-to-date public issue. Most girls will commence puberty at some phase in their schooling. In recent times early puberty has arose as a major problem due to lifestyle modifications and eating habits. There is a deficient knowledge in the community regarding eating habits leading to early puberty. So it is important to impart knowledge regarding eating habits leads to early puberty to the adolescent girls and their family members. The present study aims to assess the effectiveness of structured teaching programme on knowledge regarding eating habits leads to early puberty among adolescent girls. A descriptive one group pretest posttest design was conducted among 100 adolescent girls. Convenient sampling technique was used to select the sample. Self-prepared knowledge questionnaire was used to assess the pretest knowledge and structured teaching programme was given. After 5 days posttest was done through the same self-prepared questionnaire. The study results shows that the 26(26%) had inadequate knowledge, 64(64%) had moderate knowledge and 10 have adequate knowledge in pretest. And out of 100 samples 80(80%) had adequate knowledge, 20(20%) had moderate knowledge and none of them had inadequate knowledge in posttest. The pretest mean percentage knowledge scores regarding eating habits leads to early puberty was found to be less than the posttest mean percentage knowledge scores. A study conducted on the effectiveness of structured teaching programme regarding eating habits leads to early puberty among adolescent girls showed a significant improvement in knowledge level of adolescent girls as well as their family members after the administration of a structured teaching programme.

Keywords: structured teaching programme, adolescent girls, eating habits, early puberty, knowledge regarding

Introduction

*“Puberty for a girl is like floating down
A broadening river into an open sea”.*

-Stanley hall.

Children are now beginning pubertal developmental much prior than 20 to 30 years before. Very early pubertal development is recognized as precocious puberty. Parents of these children must frequently be puzzled and left speculating how to deal with this phenomenon. Precocious puberty is a condition where pubertal changes occur at an age prior than predictable.

In girls, these changes mostly include the appearance of breast tissue, pubic hair and menstruation. The onset of puberty is usually started by pituitary, a pea sized gland situated near the base of the brain and the production of gonadotropin and sex hormones. Only in a minor percentage of cases is there a core medical condition such as pituitary tumor. The majority of this cases have no recognized causes. The period at which the puberty variations occur as declined worldwide over the last few decades. As a result of the alarming increasing incidence, Puerto rico is home to the only world registry for the study of premature sexual

development.

Nutrition, physical exercise and weight are factors associated with the declined in age of pubertal changes. In addition to a global declined in age over time, researches have absorbed specific patterns in certain population. Linear growth in girls during childhood and adolescent is influenced by many factors one of them is puberty. Puberty is a natural process of human development it is a period of hormonal changes that induces physical growth and sexual maturity. The first and the foremost indication of puberty are the breast enlargement which starts with inception of puberty. The second is the onset of menstruation or menarche which occurs one or one and half year after the initiation.

One of the pivotal stages for the growth and development of an individual is puberty. According to different studies menarchial age and beginning of puberty can affect the final height of an adult. Puberty in girls usually start between the age group of 8 and 14. The Onset of puberty could vary depending upon different factors including the genetic factors, family structure, environmental and socioeconomically factors general health and BMI. These factors influence the initiation of puberty throughout the world. Menstruation or Menarcheal onset indicates the appearance of puberty in girls. The beginning of menarche is an event of significant importance since it marks the functional ability of pituitary management of the ovarian cycle.

According to female physiology, after puberty there is an acceleration of endochondral ossification in bones, so girls tends to gain maximum 5 to 7 cm of height afterwards. The average of their growth spurts last 24 to 36 months. For the past years there have been brought forward to the health provider and pediatric endocrinologist. It has been noted that the new generation of girls are having short height have their first signs of puberty at an early age than before.

For the past two decades scientist have been trying to unravel a mystery in young girls. Breast development, typical of 11 – year – olds a generation ago, is now occurring in more seven –year-olds and, rarely, even in three- years- olds. That precocious development, scientist, fear, may increase their risk for cancer or other illnesses later in life. More and more families are finding themselves in the strange position of juggling stuffed animals and puberty talks with their first and second graders.

Because of the eating habits due to early puberty, one of the major factor is obesity, obesity appears to be the major factor sending girls into these uncharted waters. The rate of obesity has more than doubled in children over the past 30 years. And whereas only 7% of children aged 6 to 11 were obese in 1980, nearly 18% were obese in 2012. The latest study, however, suggest that weight gain does not explain everything. Family stress and chemical exposure s in the environment may also play a role, but the data do not yet paint a very clear picture of their contribution. as for boys, the data are murkier, but one 2012 study did suggest that they, too, may be starting puberty earlier than before perhaps by as much as 6 month to 2 years.

Clinicians say that slightly early development of breasts is likely not physically harmful and so does not require medical or pharmaceutical therapy for most girls. (Among the few exception or pituitary disorders). The psychological effects, though, are another matter that warrants more attention from schools and parents; early puberty seems to

argument the risk of depression and to promote substance abuse and early initiation of sexual intercourse.

There are known several medical causes, albeit many of them are rare. Brain or spinal cord tumor or injury, hypothyroidism, congenital diseases of the ad –renal glands, brain or spinal cord have been reported as causes. Slyper bone genetic disease called McCune-Al-bright syndrome and radiation of the reports that the cause of early maturation could be due to hyperinsulinemia (high insulin levels in the blood) and insulin resistance.

Hormones in milk and meat various other theories to explain precocious puberty exists, but research has yet to pinpoint them or they have been discounted. One theory that early puberty was caused from added hormones in milk and meats has been unproven. in 1990's the artificial bovine growth hormone, rBGH, was thought by some to be a stimulating factor but this is a protein hormone produced in cattle and is destroyed in human digestion.

Childhood obesity of all the projected theories about the cause of precocious puberty, many researches are finding that child –hood obesity is highly related. A study assessing sexual maturity among children with normal and elevated body mass index found less than 5% accordance in children with normal BMI and non –Hispanic white. females percentage however, were higher in Mexican American girls and non-Hispanic black females. All suggested a relationship the twin increased BMI and body fat to early menarche, pubic hair, and breast development. Obesity in boys was linked to later pubertal development rather than early pubertal development. in another study, obesity was positively associated to early sexual development in girls but, in boys obesity was associated with negatively with sexual maturity. Puberty requires the body to have a certain weight and fat distribution. Hyperinsulinemia is the presence of higher than normal levels of insulin in the blood in order to control blood sugar. it occurs because of insulin resistance in which the pancreases produces more insulin to compensate and control blood sugar.

Materials and Methods

A descriptive research approach with one group pretest and posttest research design was used to conduct the study in koyembedu. 100 samples were collected by convenient sampling technique. Criteria for sampling selection: inclusion criteria are between age group 10-18 years of adolescent girls, willing to participate in the study, available during data collection. The exclusion criteria are not willing to participate in the study, not able to read and write. After obtaining permission from the chief medical officer to conduct the study and ethical clearance was obtained from the institution. The purpose of the study was explained to the samples and written informed consent was obtained from them. Each sample were interviewed using a structured interview guide for 25-30 minutes. Each day 20 samples were selected interview. A pretest was conducted by using structured interview schedule that consist of part I- demographic variable and part II- multiple choice question regarding eating habits leading to early puberty. After the pretest, they were gathered and investigator gave the instruction initially followed by a structured teaching programme for about 45 minutes using visual aids such as chart, power point presentation. At the end of teaching, 10-15 minutes were allocated for discussion to clear their doubts. The adolescent girls participated with full attention

and great interest. Post test was conducted using the same questionnaires. The same procedure was followed for all the adolescent girls. The collected data was tabulated and analyzed using frequency distribution and percentage distribution for the collected demographic variables, eating habits leading to early puberty. The statistical method used is descriptive statistics.

Results and Discussion

Section A: Sample characteristics

Out of 100 samples 27(27%) samples were come under age group of 10-13 years, 38(38%) were under the age group of 13-15 years, 35(35%) were under the age group of 15-18 years. Regarding age of puberty attainment out of 100 samples 40(40%) were attained puberty at 19-13 years, 28(28%) were attained puberty at 13-15 years, 22(22%) were attained puberty at 15-18 years, 10(10%) were not yet attained puberty. Regarding place of residence out of 100 sample 36(36%) were residing in rural, 64(64%) were residing at urban. Regarding religion out of 100 samples 68(68%) were Hindu, 20(20%) were Christian, 12(12%) were Muslim. Regarding type of family out of 100 samples 80(80%) were living as nuclear family, 20(20%) were living as a joint family. Regarding ordinal position out of 100 samples 20(20%) had no siblings, 38(38%) were elder one, 19(19%) were middle, 23(23%) were youngest of the family. Regarding mothers education out of 100 sample 53(53%) mothers have no formal education, 33(33%) mothers were primary education, 12(12%) were higher secondary, 2(2%) were college education. Regarding family income out of 100 samples 45(45%) were under the income of less or Rs.5000, 26(26%) were under the income of Rs.5001-Rs.10000, 14(14%) were under the income of Rs.10001-15000, 15(15%) were under the income of more than 15000.

Section B: level of knowledge about eating habits leads to early puberty in adolescent girls before and after structured teaching programme.

Out of 100 samples 26(26%) had inadequate knowledge, 64(64%) had moderate knowledge and 10 have adequate knowledge in pretest.

Out of 100 samples 80(80%) had adequate knowledge, 20(20%) had moderate knowledge and none of them had inadequate knowledge in posttest.

Table 1: Frequency and percentage distribution of the knowledge about eating habits leads to early puberty in adolescent girls before and after structured teaching programme.

Level of knowledge	Pre test		Post test	
	frequency	percentage	Frequency	percentage
Inadequate knowledge	26	26%	-	-
Moderate knowledge	64	64%	20	20%
Adequate knowledge	10	10%	80	80%

Section 3: effectiveness of STP on knowledge among adolescent girls on eating habits leads to early puberty.

The mean and standard deviation of level of knowledge of adolescent girls regarding eating habits leads to early puberty in pretest and posttest. In pretest the mean score for

inadequate (12.913), moderate (19.2955) and adequate (23) and standard deviation score for inadequate (1.8358), moderate (1.3907) and adequate (0.6667). In posttest the mean score for inadequate (0), moderate (19.95) and adequate (26.0375) and the standard deviation score for inadequate (0), moderate (1.2344) and adequate (2.1373)

Table 2: Distribution of mean and standard deviation of level of knowledge among adolescent girls regarding eating habits leading to early puberty in pretest and posttest.

Level of Knowledge	Pre Test		Post Test	
	Mean	Standard Deviation	Mean	Standard Deviation
Inadequate	12.913	1.8358	0	0
Moderate	19.2955	1.3907	19.95	1.2344
Adequate	23	0.6667	26.0375	2.1373

The mean, standard deviation, mean difference paired t test value of pre and posttest. In pretest the mean value is 16.73 and standard deviation is 4.01. and in posttest the mean value is 24.84 and the standard deviation is 3.15. The mean difference between pre and posttest is 8.11. Through the knowledge on eating habits showed significant improvement in mean and standard deviation in posttest than pretest. The paired t test value is 31.2730 and is highly significant.

Table 3: Distribution of mean and standard deviation of level of knowledge among adolescent girls in pretest and posttest

Level of knowledge	Mean	S.D	Mean difference	Paired t value
Pre test	16.73	4.01	8.11	P<0.0001
Posttest	24.84	3.15	8.11	t=31.2730 Df=99 S***

S.D = Standard Deviation

P< 0.0001

Df= degree of freedom

t=paired t test

S= significant

The findings of the study revealed that there was significant difference between pretest and posttest knowledge scores. The pretest mean percentage knowledge scores regarding eating habits leads to early puberty was found to be less than the posttest mean percentage knowledge scores.

A study conducted on the effectiveness of structured teaching programme regarding eating habits leads to early puberty among adolescent girls showed a significant improvement in knowledge level of adolescent girls as well as their family members after the administration of a structured teaching programme.

Conclusion

Structured teaching programme is the effective and easy method to improve the knowledge regarding eating habits leads to early puberty. From the result of the study it is concluded that the structured teaching programme helps to improve knowledge regarding eating habits leads to early puberty among adolescent girls. The nurse should encourage to create awareness on knowledge on eating habits leads to early puberty among adolescent girls. The nurse should develop their profession identify by displaying the instructional model. The model may be planned by the nurse

for the individual increasing their knowledge. Nursing education need to be strengthened to enable nursing students to know about current knowledge regarding difficulties in early puberty. Nursing curriculum should include clinical experience in conducting various methods of health teaching about early puberty. Nurse administer can organize the in-service education for the knowledge of eating habits leading to early puberty. The nurse administer should arrange for seminar, awareness program about teaching and give counselling, nurse administrators can prepare written policies and protocols.

Acknowledgement

We would like to extend our gratitude to the authorities of Saveetha College of Nursing, and Thiruvallur District Head Quarter Government Hospital.

Authors Contribution

All the authors actively participated in the work of the study. All authors read and approved the final manuscript.

Conflicts of Interest

The authors declare no conflicts of interest.

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