



Assess the dietary pattern on early puberty among adolescent girls at selected school

Mrs.Beautily^{*1}, Ms. A.Arul mozhi², Ms.S.Divya³, Ms.G.Barathi⁴

¹Assistant professor of Saveetha College of Nursing, SIMATS, Chennai 602105.

²B.Sc (Nursing) IVth Year, Saveetha College of Nursing, SIMATS, Chennai 602105.

*Corresponding Author: Mrs.Beautily

Email id: beautily85@gmail.com

ABSTRACT

Background

Precocious puberty is a condition where pubertal changes occur at an age earlier than expected. In girls, these changes generally include the appearance of breast tissue, pubic hair, and menstruation. The onset of puberty is usually triggered by the pituitary, a pea-sized gland located near the base of the brain, and the production of gonadotropins and sex hormones.

Aim of the study

Assess the eating habits leads to early puberty among adolescent girls at selected school.

Methods

Quantitative approach descriptive research design were adopted to conduct this study.

60 adolescent girls were selected in Nasarath petai secondary government school by using convenience sampling technique.

Result

Among 60 adolescents girls 57(95%) of them were in the age group of 13-14 years and majority of them were 60(100%) veg and non- vegetarian with regards to most them were 60(100%) and family economic status is 60(100%) belongs to education. The mean value are the median values are and the standard deviations.

Conclusion

Majority of the adolescent girls are regular type of food veg and non- vegetarian most them are limited property they are occur in early puberty.

Keywords: Eating habits, Early puberty, Adolescent girls.

INTRODUCTION

Puberty is one of the main pivotal stages for the growth and development of an individual. During puberty many transitional phases take place, which consist of a succession of many biological

processes. The developmental changes during puberty affect the final height of an adult. Puberty in girls usually starts 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 socio

economical factors, general health and BMI. These factors influence the initiation of puberty throughout the world.

Puberty refers to increased rate of growth and development exhibited by remarkable changes in the body shape, size and composition. It was estimated that puberty occurs between the ages of 9 to 13 years in females. It is important to notify that there has been a rapid shift in the menarcheal ages observed around the globe owing to many contributing elements. The most important factors include dietary quality and amount of consumption that might be responsible for genetic and hormonal changes [1-3]. The decrease in the menarcheal ages among females is observed consistently over the past 100 years. This issue has created an alarming situation among the medical researchers and the exploration of probable causes of early menarche is still under process. It is suggested that excess of fat in the body and high consumption of meat are the possible contributing factors to the declining age of puberty [4].

Abdulmoein E. Al-Agha Rothaina J Saeedi and Bara'ah O Tatwany conducted a cross-sectional study in Jeddah to assess the relationship between early puberty and the intake of various types of protein (chicken, beef and fish), fruits, vegetables, dairy products, caffeine and soft drinks.. The sample included are 568, and relevant data were collected through a questionnaire. Data was analyzed using the Pearson's correlation coefficient; we assumed that the data followed a normal distribution based on the large sample size of 568 girls. In this study Early breast and pubic hair development was significantly correlated with the diet such as meat, fast food, French fries, and soft drink consumption and also observed that the age at menarche was significantly correlated with chicken consumption.

While analyzing the different predictors of early menarcheal age, it shows the body mass index (BMI), socio economic status, unfavorable psychological experiences and nutritional status are the major underlying factors [5,6]. Maximum our daily protein intake comes from concentrated animal feeding operations (CAFOs). CAFOs fatten up their animals quickly, using growth hormones and steroids. [1]. many studies have reported that the frequent consumption of soft drinks also causes a decrease in the menarcheal age because of its relationship with obesity. In fact, most of the

teenagers do not consume even one vegetable per day. Instead, they consume fast food, which consists more fat and calories, and low in nutrients leads to associated increase in overweight in children and teens can lead to precocious puberty [2, 3]. In contrast, a higher fiber intake during childhood is associated with late menarche and other health benefits [4, 7]. Early puberty is a causative agent for variety of disease in later life. The factors affecting the age at menarche of girls in Saudi Arabia are inadequate diet, socioeconomic status, lack of physical activity and hereditary factors. The environmental factors are known to play a vital role in the development of early puberty among girls in Saudi Arabia. The intake of unhealthy food and lack of physical activity among girls corresponds to highbody mass index and the development of puberty among girls

Consider the statistics provided by German researchers. They found that in 1860, the average age of the onset of puberty in girls was 16.6 years. In 1920, it was 14.6; in 1950, 13.1; 1980, 12.5; and in 2010, it had dropped to 10.5.

Currently Children are starting pubertal development much earlier than 20 to 30 years ago. Very early pubertal development is identified as precocious puberty. Parents of these children must often be stress and left wondering how to cope with this phenomenon. In girls, these changes includes the appearance of breast tissue, pubic hair, and menstruation. The onset of puberty is usually triggered by the pituitary, a pea-sized gland located near the base of the brain, and the production of gonadotropins and sex hormone.

OBJECTIVES OF THE STUDY

1. Assess the eating habits among adolescent girls at selected school.
2. To associate the eating habits leads to early puberty with selected demographic variables

MATERIALS AND METHODS

Quantitative approach descriptive research design were adopted to conduct this study. 60 adolescent girls were selected in in Nasarath petai secondary government school by using convenience sampling technique. The inclusion criteria are adolescent girl who between the age 13-15 years of old attained menarche, who willing to participate in

the study, adolescent girl who can able to read and write Tamil and available during the time of data collection. The exclusion criteria are those who below 12 years not attain puberty Data was collected using tools consists of two sections demographic variables, check list assess the knowledge on dysmenorrhoeal and check list to assess the eating habits leads to early puberty among adolescent girls at selected school.

Ethical consideration

The project has been approved by the ethics committee of the institution. Informed consent was obtained from the participants before initiating the study.

Section 2

The mean median and standard deviation of eating habits leads to early puberty among adolescent girls.

Eating habits leads to early puberty among adolescent girls	MEAN	MEDIAN	STANDARD DEVIATION
	27.23	25.5	7.20

The table shows the eating habits leads to early puberty among adolescent girls the mean value are 27.23 the median values are 25.5 and the standard deviations are 7.20.

Section 3

Association of demographic variables with eating habits leads to early puberty. The Study found that there is a significant difference between eating habits leads to early puberty with demographic data of education of parents and socio economic status at p=0.05 level. So the change of eating habits can leads to early puberty.

DISCUSSION

It is found that from a number of studies that the menarche is more rapid in girls and is observed at a much earlier age in many countries of the world. The average menarche age in girls in US was found to be 14.2 years in 1900. Later in 1920s, it decreased to 13.3 years and it further reduced to 12.3 years in 2002. Likewise, the menarche ages reported in Ireland was 13.5 years in 1986 and was decreased to 12.5 years in 2006. An observational study in Italy reported that the menarche ages in girls have decreased at a rate of 3 months earlier as compared to their mothers [2,3]. In the present study, we found a difference of almost 1.5 years

RESULTS

Section 1

Frequency and percentage of distribution of demographic variables of adolescent age group. Among 60 adolescents girls 57(95%) of them were in the age group of 13-14 years ,regarding type of food regular intake of vegetarian and non-vegetarian with regards to most them were 60(100%).All the 60 samples were coming under middle class family,85% samples were coming from rural area and 96% of samples were attained menarche in the age of 11-13.

between the menarche ages in young girls and that of their mothers. The mean menarcheal age in girls was found to be 11.5 years compared with 12.9 years for their mothers.

In the last few years, a number of studies have been conducted for identifying the factors contributing to early menarche, and the most significant factor is nutrition [2, 3, 7, 8]. It was from various research studies that the increased consumption of meat intake is a major nutritional factor associated with the early attainment of menarche. Correlation between the consumption of meat by young women and the early onset of menstruation has been reported. A high intake of animal protein between the ages of 3 and 7 years results in a greater likelihood of menarche before the age of 12 years [1,9]. A British study also demonstrated that a high intake of animal protein in childhood is associated with earlier menarcheal age [10-12].

In an Italian study, the nutritional factors triggering puberty at a younger age were determined. Study was conducted on school meals containing beef and poultry products to find the effects on school children. These food products leads to possess residues of steroid hormones, which were suggested as a potential reason for breast enlargement in girls at a very young age [13]. In addition, multiple studies were conducted

on girls in the American population, first in 1970 and later in 1987. It was evident from the study findings that vegetarian dietary habits has contributed significantly in delaying the process of menarche in girls and a higher vegetable intake between the ages of 3 and 6 years in girls was leads to delay puberty and the start of menarche. It helps in delaying the process of growth and stagnates the body hormones from achieving peak high velocity in girls [7].

Many observational studies associated early puberty with the dietary habits of children. It is suggested that high vegetable intake delays the maturation process in girls up to 7 months, whereas, the high use of meat protein increase the process causing hormonal maturation 7 months before. It is highly observed that increase amount of isoflavone intake in girls causes early breast development and other hormonal changes [14]. The study findings are consistent with the fact that there is a significant relationship between the increased consumption of animal protein (chicken and beef) and early development of pubertal signs. In contrast, fruit and vegetable intake was inversely correlated with the age at menarche, highlighting that a high fiber intake might delay menarche.

The present study demonstrated that there is a significant difference the between eating habits and early puberty with demographic data of education of parents and socio economic status at $p=0.05$

level. So the change of eating habits can leads to early puberty.

Among 60 adolescents girls 57(95%) of them were in the age group of 13-14 years, regarding type of food regular intake of vegetarian and non- vegetarian with regards to most them were 60(100%). All the 60 samples were coming under middle class family, 85% samples were coming from rural area and 96% of samples were attained menarche in the age of 11-13.

The mean valve are 27.23 the median valves are 25.5 and the standard deviations are 7.20 for the eating habits leads to early puberty among adolescent girls in a selected school.

So the change of eating habits can leads to early puberty.

CONCLUSION

Majority of the adolescent girls are had regular eating of veg and non- veg foods. .But adolescents are more interested in eating non veg than veg foods. So the change of eating habits can leads to early puberty.

It was concluded that unbalanced nutrition has been a major cause of early maturation in the young girls. It is therefore highly recommended to take healthy nutrition with lower quantities of meat. Public health measures are required to improve the issue of malnutrition among females and to increase awareness about healthy dietary habits.

REFERENCES

- [1]. Rogers IS, Northstone K, Dunger DB, Cooper AR, Ness AR, et al. Diet throughout childhood and age at menarche in a contemporary cohort of British girls. *Public Health Nutr* 13, 2010, 2052-2063.
- [2]. Biro FM, Galvez MP, Greenspan LC Pubertal Assessment Method and Baseline Characteristics in a Mixed Longitudinal Study of Girls. *Pediatrics* 2010.
- [3]. Biro FM, Khoury P, Morrison JA Influence of obesity on timing of puberty. *Int J Androl* 29, 2006, 272-277.
- [4]. Tanner JM Trend toward earlier menarche in London, Oslo, Copenhagen, the Netherlands and Hungary. *Nature* 243, 1973, 75-76.
- [5]. van den Berg SM, Boomsma DI The familial clustering of age at menarche in extended twin families. *Behav Genet* 37, 2007, 661-667.
- [6]. Towne B, Czerwinski SA, Demerath EW, Blangero J, Roche AF, et al. Heritability of age at menarche in girls from the Fels Longitudinal Study. *Am J Phys Anthropol* 128, 2005, 210-219.
- [7]. Gao Y-T, Shu X-O, Dai Q Associations of menstrual and reproductive factors with breast cancer risk: results from the Shanghai Breast Cancer Study. *Int J Cancer* 87, 2000, 295-300.
- [8]. Hsieh CC, Trichopoulos D, Katsouyanni K, Yuasa S Age at menarche, age at menopause, height and obesity as risk factors for breast cancer: associations and interactions in an international case-control study. *Int J Cancer* 46, 1990, 796-800.
- [9]. Maisonet M, Christensen KY, Rubin C, Holmes A, Flanders WD, et al. Role of prenatal characteristics and early growth on pubertal attainment of British girls. *Pediatrics* 126, 2010, e591-600.

- [10]. Tavani A, Gallus S, La Vecchia C, Negri E, Montella M, et al. Risk factors for breast cancer in women under 40 years. *Eur J Cancer* 35, 1999, 1361-1367.
- [11]. Vandelloo MJ, Bruckers LM, Janssens JP Effects of lifestyle on the onset of puberty as determinant for breast cancer. *Eur J Cancer Prev* 16, 2007, 17-25.
- [12]. Kvale G, Heuch I Menstrual factors and breast cancer risk. *Cancer* 62, 1988, 1625-1631.
- [13]. Rogers IS, Northstone K, Dunger DB, Cooper AR, Ness AR, et al. Diet throughout childhood and age at menarche in a contemporary cohort of British girls. *Public Health Nutr* 13, 2010, 2052-2063.
- [14]. Cheng G, Buyken AE, Shi L, Karaolis-Danckert N, Kroke A, et al. Beyond overweight: nutrition as an important lifestyle factor influencing timing of puberty. *Nutr Rev* 70, 2012, 133-152.
- [15]. Davison, K., Birch, L. and Susman, E. Percent body fat at age 5 predicts earlier pubertal development among girls at age 9. *Pediatrics*, **111**, 2003, 815-821. <http://dx.doi.org/10.1542/peds.111.4.815>
- [16]. Kaplowitz, P. Precocious puberty in girls and the risk of a central nervous system abnormality: The elusive search for diagnostic certainty. *Pediatrics*, **109**, 2002, 139-141. <http://www.pediatrics.org/cgi/content/full/109/1/139>.
- [17]. Kaplowitz, P. Clinical characteristics of 104 children referred for evaluation of precocious puberty. *The Journal of Clinical Endocrinology & Metabolism*, **89**, 2004, 3644-3650. <http://dx.doi.org/10.1210/jc.2003-031532>
- [18]. Kaplowitz, P. Precocious puberty: Update on secular trends, definitions, diagnosis, and treatment. *Advances in Pediatrics*, **51**, 2004, 37-62.
- [19]. Marshall, W. and Tanner, J. Variations in pattern of pubertal changes in girls. *Archives of Disease in Childhood*, **44**, 291-303. <http://dx.doi.org/10.1136/adc.44.235.291>

How to cite this article: Mrs.Beautily, Ms. A.Arul mozhi, Ms.S.Divya, Ms.G.Barathi. W Assess the dietary pattern on early puberty among adolescent girls at selected school. *Int J of Allied Med Sci and Clin Res* 2019; 7(3): 993-997.

Source of Support: Nil. **Conflict of Interest:** None declared.