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

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Abstract
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 pre-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

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 [1].

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. Nutrition, physical exercise and weight are factors associated with the declined in age of pubertal changes. 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 [1].

One of the pivotal stages for the growth and development of an individual is puberty. 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 [1].

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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 [2].

Because of the eating habits due to early puberty, one of the major factor is obesity. Family stress and chemical exposure s in the environment may also play a role. 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 [2].

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 [3].

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 [4].

Manisha Rani *et al.* (2016) To compare the knowledge and attitude regarding pubertal changes among pre – adolescent girls before and after the pubertal preparedness program (PPP) in experimental and comparison group. A Quasi experimental (non- equivalent comparison group pretes tposttest) design was adopted with 104pre-adolescentgirls (52 in each experimental and comparison group) of age 12-14years, selected by purposive sampling from two different Government schools of Ambala District. Findings of unpaired 't' value of posttest knowledge and attitude scores of pre-adolescent girls (19.77), (17.17) respectively in experimental and comparison group were found significant at 0.05 level of significance, Thus knowledge and attitude of pre-adolescent girls were improved with PPP and FAQs session [5].

Talpade (2008) looked at the relationship between nutritional intake and body imaging on sexual maturation differences between 7 and 10 year old Hispanic American (HA) and African American (AA) girls. The results indicated that AA girls with secondary sexual characteristics consumed a diet higher in lipids (p=.025) and saturated fats (p=.048). Additionally, food consumption and race between the girls who experienced early sexual maturation (one minimum characteristics) found significant differences between the consumption of lipids (p=.04) being higher among AA and calcium (p=.04) being higher among HA. Higher intake of calcium among HA girls (p=.006) and lipids among AA girls (p=.049) showed significant

associations with increased breast development [6].

Villamor (2011) followed 242 girls whose mean age was 8.8+-1.6years for 2.5 years and studied their vitamin D nutrition in relation to the timing of menarche. The results indicated that vitamin D-deficient girls were 3.03 times more likely to reach menarche earlier than vitamin D – sufficient girls (95% CI: 1.58-5.83).After adjustments for age at baseline for BMI-for –age z-score (HR: 2.05, 95%CI: 1.03-4.07), the relationship was partially attenuated [7].

Buttke, et al. (2012) studied the association between the exposure of endocrine –disrupting hormones(EDC)and the age of menarche for girls aged 12 to 16 years old .they found that 2,5-dichlorophenol(2,5-DCP)alone and combination with 2,4-dichlorophenol(2,4 DCP)act as potential EDC"s and were inversely associated with an earlier age of menarche (hazard rations of 1.10;95% CI: 1.01. 1.10 and 1.09; 95%CI 1.01.1.19, respectively; p p=0.025). The phenol 2,5-DCP is a fumigant that is found in common household items such as mothballs, insect repellents, deodorized, and toilet disinfectants [8].

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 9-11 years of pre-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 and RRB 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.

The present study was supported by a similar cross sectional study conducted by Westen hoefer J -2006 in Germany among school students to assess their knowledge regarding anorexia nervosa. A self-administered questionnaire was used. The majority (78.2%) had no idea regarding anorexia nervosa. Only 20.3% have some knowledge regarding anorexia nervosa. The results of the study revealed inadequate knowledge on anorexia nervosa. So the Government and clinicians should combine efforts to provide accurate information on 6 anorexia nervosa during school health programmes.

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

Similarly a study was conducted by Praveena P.S 2013 to evaluate the effectiveness of planned teaching programme on knowledge of pre university students regarding anorexia-nervosa and its prevention at selected pre-university colleges, Bangalore. Purposive sampling technique was used. One group pre-test, post- test design with pre experimental approach was adopted. The data was collected from 50 respondents before and after administration of planned teaching programme. The pre - test median score was (20.1) and that of the post test was (40.5). Hence, the planned teaching programme was effective in improving the knowledge of pre-university students regarding 7 anorexia nervosa.

Table 1: Frequency and percentage distribution of the knowledge about eating habits leads to early puberty in pre-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)

A similar study was conducted in Coimbatore by Halmi KA 2009 to evaluate the effectiveness of structured teaching programme on early puberty. Fifty working women were involved in the study. The study results showed that post - test score (mean: 39.6 ± 2.57) was higher than that of pre-test score (mean: 13.23 ± 3.88) and t- value was 15.12. It was concluded that structured teaching programme was 8 effective in enhancing the knowledge regarding early puberty.

Table 2: Distribution of mean and standard deviation of level of knowledge among pre- 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*< 0.0001Df= degree of freedomt=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.

Similarly, a study was conducted on effectiveness of self -

instructional module on the knowledge regarding anorexia nervosa among adolescent girls in selected Schools in Australia, by approaching one group pre- test, post- test design. The sample consisted 50 adolescent girls selected by convenient sampling and data was collected by using structured knowledge questionnaire .The result showed the

significant difference suggesting that self-instructional module was effective in increasing the knowledge of adolescent girls (t=14.34). The mean posttest knowledge (x2=43.17) higher than the mean pre-test knowledge (x1=30.40). There was no association between the pre-test knowledge scores and the selected demographic variables like age, weight, place of residence, type of family and previous knowledge source, way of 9 perceiving body image.

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 pre-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 creating awareness on knowledge on eating habits leads to early puberty among adolescent girls.

References

1. Kaplowiz P. precious puberty: update on secular trends, definitions, diagnosis, and treatment. Advances in pediatrics 2004;51:37-62.
2. Ashraf Soliman, Vincenzo De Sanctis, Rania Elalaily. Nutrition and pubertal development. Indian J Endocrinol Metab 2014.
3. Mert Ciftdemir, Murat Kaya, Esref Selcuk, Erol Yalniz. Tumors of the spine. World J Orthop 2016;7(2):109-116.
4. Andrea S. Wiley Milk Intake and Total Dairy Consumption: Associations with Early Menarche in NHANES. PLoS One 2011.
5. Manisha Rani, Poonam Sheoran, Yogesh Kumar. Knowledge and attitude regarding pubertal changes among pre-adolescents - a descriptive survey study. International Journal of Current Research. June 2016;8(6):33697-33702.
6. Denise R. Tate. Literature Review of Early and Precocious Puberty in Girls. Southern Adventist University.
7. Anna Chew, Susan S Harris. Does vitamin D affect timing of menarche? Wiley Online Library.
8. Danielle E Buttke, Kanta Sircar, Colleen Martin. Exposures to Endocrine-Disrupting Chemicals and Age of Menarche in Adolescent Girls in NHANES. Environ Health Perspect 2012;120(11):1613-1618.