

A Study to Assess the Effectiveness of Information Communication Technology (ICT)Based Teaching Programme on Knowledge and Attitude Regarding Pubertal Health among Girls of Prepubertal Age Group of 9–14 Years in Selected Schools at Puducherry

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ABSTRACT

Puberty is a period of rapid change in stature and body composition with female's sexual acceleration in linear growth velocity. The young girls are not improved psychologically to have the basic knowledge about the pubertal health. The objectives of the study were to assess the level of knowledge and attitude on pubertal health among girls of prepubertal age of 9–14 years, to evaluate the effectiveness of information communication technology (ICT) based teaching on pubertal health among girls of prepubertal age of 9–14 years and to find out the association between pre-test level of knowledge and attitude with selected demographic variables. The study was conducted in Government Higher Secondary School, Murungapakkam. 60 girls were selected through simple random sampling technique based on inclusion criteria. Demographic data was collected then a knowledge and attitude questionnaire was administered to all the samples, then the ICT-based teaching programme on pubertal health was given and after a week of interval post-test was conducted by the same questionnaire and analysis of the data was done. The result revealed that in post-test knowledge and attitude majority of the samples 50 (80.7%) had moderate knowledge and positive attitude towards pubertal health. In association, source of information had a significant association with knowledge at $p < 0.001$ level.

Keywords: puberty, demographic, pre pubertal, pubertal health

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adulthood. Every person's individual's timetable for puberty is influenced primarily by hereditary although environmental factors, such as diet, and exercise also exert some influence [1]. In females this periods of adolescence is marked with onset of menstruation [2].

Puberty is the time when a child's body starts changing into an adult's body. Girls

usually reach full physical development by ages 15–17 years. Girls attain reproductive maturity about 4 years after the first physical changes of puberty appear. It is period of social, psychological, economical and biological transition and for many young people, it involves demanding emotional challenges. It is a period of development of secondary sexual characteristics [3].

OBJECTIVES

- To assess the level of knowledge and attitude on pubertal health among girls of prepubertal age of 9–14 years.
- To evaluate the effectiveness of information communication technology (ICT) based teaching on pubertal health among girls of prepubertal age of 9–14 years.
- To find out the association between pre-test level of knowledge and attitude with selected demographic variables.

NEED FOR STUDY

In India more than 80% of the girls in cities are reaching puberty around age 11 years; it indicates the survey that is being carried out in 100 centers—both urban and rural—across four regions. According to physical changes in girls during puberty, girls start change in to women from the inside to the outside. In India, 10–14 years age group comprises 12% of the total population; this is different from the older age group as it is difficult for them to understand their problems—the consequences of their behavior and effects of their action. In the WHO (World Health Organization) collaborative study carried out in different countries, it was found that 12–29% (21% in India) of adolescent attending a primary health facility had some mental health problem.

A cohort study conducted in a Spanish slum showed, between 30% and 60% of preadolescence presented mental problems out of which anxiety and disruptive behavior were frequent. Most of problems derived from the widespread ignorance of the body changes and natural process which occur during puberty. It is important for prepubertal age group to understand themselves and the functions of their body [2, 4].

During preadolescent period, dramatic changes like growth spurts reproductive system development and appearance of

secondary sexual characteristics. It is also time of mental and psychological adjustment. Educating girls about pubertal changes among preadolescent is an important aspect [2, 5].

A study was conducted among 12–16 years old adolescent girls in Bangladesh to investigate the perception of adolescents. Data was collected by means of survey in depth. The attaining puberty among girls in urban in India has dropped from 13 year to 11 years. So for we had accepted the global average (13 years) more than 80% of the girls in cities are reaching puberty around age 11 years [4].

A survey was carried out in Kathmandu, Nepal, among the teenage students of two high schools, on the problems they were facing due to changes caused by puberty and their knowledge about the normal pubertal changes. 40 students were taken from two schools—one private and one government—20 students from each school based on Purposive sampling method. A semi structured questionnaire was used for the study. Result showed that 65% of the girls were of the opinion that prior information about the changes occurring at puberty would have made puberty easier for them. 35% of girls had been informed about on coming of menstruation or nocturnal emission. This study indicates the need of education on pubertal changes [5]. In present modern days, there are major changes in the lifestyle. The young girls attained menarche between the age group of 9–14 years without having adequate knowledge and attitude regarding pubertal health. So we felt to undertake the study to assess the knowledge and attitude on pubertal health among girls of prepubertal age group of 9–14 years.

METHODOLOGY

Research approach

- A quantitative research approach.

Research Design

- Quasi experimental research design was adopted.

Variables

- Independent variable—ICT based teaching programme.
- Dependent variable—knowledge and attitude regarding pubertal health.

Setting of the Study

The study was conducted in Government Higher Secondary School, Murungapakkam, Puducherry. The distance from Mahatma Gandhi Medical College and Research Institute to Government Higher Secondary School, Murungapakkam, is about 11.4 km.

Population

The population of the study was the girls between the age group of 9–14 years in Government Higher Secondary School, Murungapakkam, Puducherry.

Sample Size

60 girls between the age group of 9–14 years were selected based on the inclusion criteria.

Sampling Technique

Simple random sampling technique was used to assess the knowledge and attitude.

Criteria for Sample Selection

Inclusion criteria

- Girls who were willing to participate.
- Girls who were studying from 5th standard to 8th standard.
- Girls who were not attain menarche.

Exclusion Criteria

- Girls who are absent during data collection.

Development and Description of Tool

The tool was developed based on review of literature, opinion from experts in the

field of obstetrics and gynecology. The tool consists of three parts.

Part I: Consists of demographic variables like age, educational status, religion, area of residence, diet pattern, and source of information regarding pubertal health.

Part II: Structured statement was used to assess the knowledge regarding pubertal health. It consists of 25 questions related to knowledge regarding prepubertal health; for each correct response, the score of one was given and for the wrong answers, the score of 0 was given. The maximum score was 25. The total score of each subject was converted into percentage.

Part III: Structured statement was used to assess the attitude regarding pubertal health among girls of prepubertal age group. It consists of 20 statement related to attitudes regarding pubertal health among girls of prepubertal age group. The positive statements are: 1,2,3,4,5,6,7,8,9,10 and negative statement are: 11,12,13,14,15,16,17,18,19,20. It includes the statement that graded on five point scale range from 5,4,3,2,1. The maximum score is 40 and minimum score is 12. High score indicates positive attitude.

Data Collection Procedure

A formal permission was obtained from the Principal of Government Higher Secondary School, Murungapakkam. Data collection period was one week. 60 girls were selected through simple random sampling technique based on inclusion criteria. The purpose of study was explained to all the samples. Demographic data was collected then a knowledge and attitude questionnaire was administered to all the samples, then the ICT-based teaching programme on pubertal health was given, and after a week of interval post-test was conducted by the same questionnaire and analysis of the data was done.

RESULT AND BACKGROUND

It shows the frequency and percentage distribution of the demographic variables of pubertal health among girls of prepubertal age group. With regard to age 34(56.7%) belongs to the age group of 11–12 years. In education most of the samples 21(35%) girls are studying 6th standard. With respect to religion, 54(90%) of them were Hindu. Out of 60 samples, 36(60%) residing in urban area. In type of family, majority of sample 40(66.7%) belongs to nuclear family. In diet pattern, majority of samples 44(73.3%) belongs to non-vegetarian. In source of information regarding pubertal health, 33(55%) girls not received any information regarding pubertal health.

Figure 1 depicts the pre-test and post-test level of knowledge on pubertal health among girls of prepubertal age group. In pre-test, out of 60 samples, 8 (13.3%) had

adequate knowledge, 45 (75.0%) had moderately adequate knowledge and 7 (11.7%) inadequate knowledge and in the post-test, 10 (16.7%) had adequate knowledge 50 (83.3%) had moderately adequate knowledge and no inadequate knowledge. In post-test, majority of the samples had moderate knowledge. There is no inadequate knowledge. It shows that ICT-based teaching was effective. Hence, stated hypothesis (H1) was accepted.

Table 1 depicts the frequency and percentage distribution of attitude on pubertal health among girls of prepubertal age. In pre-test attitude, 10(16.7%) girls had negative attitude, 50(83.3%) girls had positive attitude. In post-test, 6(10.0%) girls had negative attitude and 54(90%) girls had positive attitude. It reveals that the teaching help the students to have positive attitude towards pubertal health.

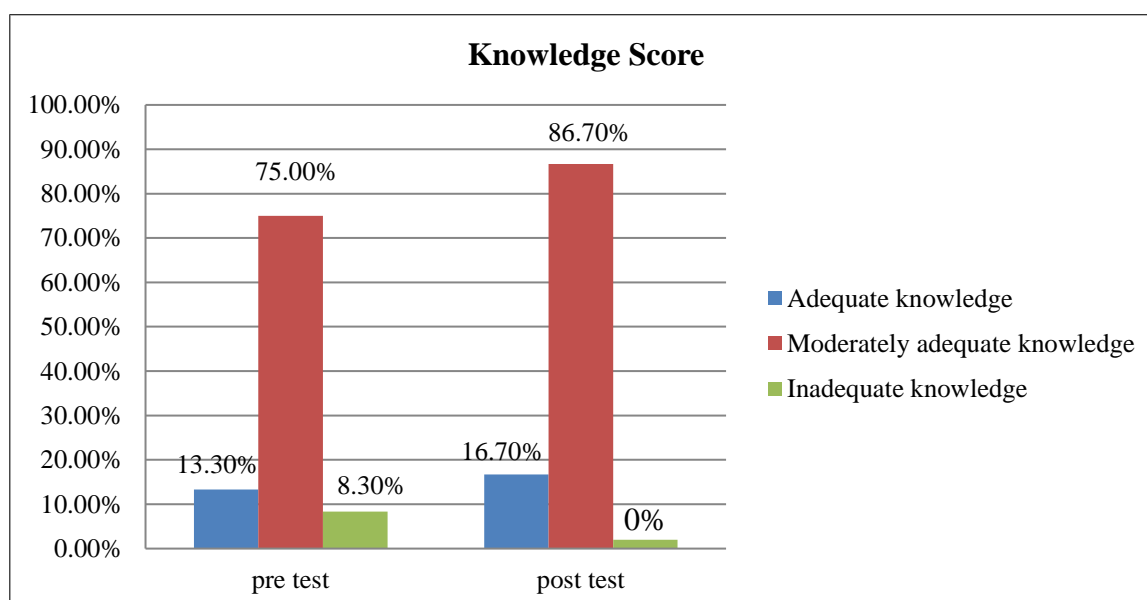


Fig. 1. Assess the level of knowledge regarding pubertal health among girls of prepubertal age group.

Table 1. Frequency and percentage distribution of attitude on pubertal health among girls of prepubertal age(n = 60).

Attitude	Pre-test		Post-test	
	Frequency (n)	(%)	Frequency(n)	(%)
Negative	10	16.7%	6	10.0%
Positive	50	83.3%	54	90%
Total	60	100.0%	60	100.0%

Association

The finding shows the association between the knowledge with selected demographic variables. Hence, it is evident that the demographic variables, like source of information had a significant association with knowledge. *Hence, the stated hypothesis (H2) was accepted.* It was statistically significant at $p < 0.001$ level. The other demographic variables like age, education, religion, area, diet, family type were not significantly associated with knowledge.

DISCUSSION

The first objective of the present study was to assess the level of knowledge and attitude on pubertal health among girls of prepubertal age of 9–14 years. It depicts the pre-test and post-test level of knowledge regarding pubertal health among girls of prepubertal age group. In pre-test, out of 60 samples 8(13.3%) had adequate knowledge, 45(75.0%) had moderately adequate knowledge and 7(11.7%) had inadequate knowledge, and in the post-test, 10(16.7%) had adequate knowledge 50(83.3%) had moderately adequate knowledge. It shows that ICT-based teaching was effective. pre-test attitude 10(16.7%) girls had negative attitude, 50(83.3%) girls had positive attitude. In post-test, 6(10.0%) girls had negative attitude and 54(90%) girls had positive attitude. It reveals that the teaching help the students to have positive attitude towards pubertal health.

The second objective of the present study was to evaluate effectiveness of ICT-based teaching on pubertal health among girls of prepubertal age of 9–14 years. During pre-test, mean score knowledge level of the pubertal health among prepubertal age group was 15.0167 with the standard deviation of 2.5478 whereas after implementation of ICT-based teaching programme, the post-test knowledge was increased about 21.2500 with the standard

deviation of 2.3479. The improvement of knowledge statistically tested by paired t-test which was found to be highly statistically significant at $p < 0.001$ level. *Hence, the stated hypothesis (H1) was accepted.* It indicates that information communication technology based teaching programme was effective in improving the knowledge regarding pubertal health among prepubertal age group.

The third objective of the present study was to find out the association between pre-test level of knowledge and attitude with selected demographic variables. Finding shows the association between the knowledge and attitude with selected demographic variables. Hence, it is evident that the demographic variables, like source of information had a significant association with knowledge and attitude. *Hence, stated hypothesis (H2) was accepted.* It was statistically significant at $p < 0.001$ level. The other demographic variables like age, education, religion, area, diet, family type were not significantly associated with knowledge and attitude.

CONCLUSION

The main conclusion of the present study shows that the majority of girls had moderately adequate knowledge and had positive attitude towards pubertal health. It reveals that the information communication technology based teaching was effective to improve the knowledge and attitude level of school children's.

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