

**EFFECTIVENESS OF EDUCATION THROUGH VIRTUAL MEDIA ON  
PUBERTAL CHANGES AMONG PRE PUBERTAL GIRLS IN SELECTED  
SCHOOLS**

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**ABSTRACT**

**BACKGROUND:** The word Puberty is derived from the Latin word “Pubertal”, which means ‘age of manhood’. It refers to the physical rather than behavioural changes which occur when the individual becomes sexually mature and is capable of producing off springs. It is an important period of biological changes in which rapid growth occurs. It helps to know about the changes that puberty causes before they happen. It's also important to remember that everybody goes through these changes.

**AIM OF STUDY:** The main aim of the study is to assess the effectiveness of education through virtual media on pubertal changes among pre pubertal girls in selected schools.

**MATERIAL AND METHOD:** The study involved one group pre-test and post test using pre experimental design, with non probability purposive sampling technique was used to draw the samples. The size of sample was 100 pre-pubertal girls and selection of the sample was done according to inclusion and exclusion criteria. The pre-pubertal girls completed the self structured administered questionnaire in the pre test followed by implementation of virtual media on the same day. Post test was conducted 5 days after, using the same self structured knowledge questionnaire to find out the effectiveness. The results were analyzed by using both descriptive and inferential statistics.

**RESULTS:** In the study Knowledge of the mean percentage of the Pre-test was 38.3% and SD was 9.3 whereas, the mean knowledge of post test was 79.8% and SD was 4.7 respectively. Further the enhancement of mean knowledge found to be 41.6 % from the pre test to post test. The statistical Paired ‘t’ test was found to be 44.26\* that reflects significant

enhancement of knowledge score from pre test to post test at  $P < 0.05$  revealing the effectiveness of virtual education on pubertal changes.

**KEYWORDS:** Assess, effectiveness, education, virtual media, knowledge, pubertal changes, pre pubertal girls

## **INTRODUCTION**

The journey from childhood to adolescence is very challenging. Between the ages of 10 and 17 years, there are major changes in physical, cognitive, social and moral development occurs. Armed with this information, parents can better prepare themselves to help their children cope with these inevitable and sometimes intimidating transformations.<sup>[1]</sup> The word Puberty is derived from the Latin word "Pubertal", which means 'age of manhood'. Puberty is that time when the child turns sexual and the mind struggles to catch up. The pubescent period may be considered a pause of 2 or 3 years between childhood and adolescence. Puberty starts between ages 8 and 13 in girls and ages 9 and 15 in boys. When your body is ready to begin puberty, your pituitary gland releases special hormones. In girls, these hormones target the two ovaries which contain eggs that have been in the girl's body since she was born. Together, these hormones prepare a girl's body to start her periods and be able to become pregnant someday. Boys and girls both begin to grow hair under their arms and their pubic areas.<sup>[2]</sup> In India, 10 to 14 year age group comprises 12 % of the total population. This group is different from the older age group, as it is difficult for them to understand their problems, In a WHO collaborative study carried out in different countries, it was found that 12 to 29 % (21% in India) of adolescents attending a primary health care facility, had some mental health problem. A cohort study conducted in a Spanish slum showed, between 30% and 60% of pre adolescents presented mental problems, out of which anxiety and disruptive behaviour were frequent.<sup>[3]</sup>

It is important to first define what exactly puberty is before going on to discuss the effects of puberty on youth. While these changes are primarily physical in nature, profound mental, emotional and social changes also occur as youth adapt to their maturing bodies.<sup>[4]</sup> Generally, girls will experience puberty between ages 10 and 14 years. Boys' puberty begins slightly later than girls'. On average, boys experience puberty between the ages of 11 and 15 years, but they may experience it anywhere between the ages of 9 and 17 years. The process and experience

of puberty is different for boys than it is for girls. These differences will be explored in separate sections of this document. <sup>[5]</sup>

During puberty growth is rapid, disorganized and confusing, compared to the relatively stable earlier period of childhood. According to the statute of the World Health Organization, health is considered as a personal and social value and in view of different nations. Studies have shown that most of parents, educators and adolescents are not aware of health issue during puberty <sup>[6]</sup> The major change is that this period which is so important and is considered as the turning point of adolescents, it is puberty. many girls feel moodiness at times, especially right before their periods. Once your period starts, the PMS symptoms usually disappear. Some girls have a decrease in self-esteem and body satisfaction if they hit puberty earlier than their friends. Other girls feel different if they enter puberty later than their friends do. That's why it's important to understand what's happening to your body, and realize that every girl goes through the same changes some sooner, some later. <sup>[7]</sup> There is a need on Pubertal changes to impart scientific information to the pre-pubertal girls so that they will be able to understand and accepts the physiological and psychological changes. <sup>[8]</sup>

#### **MATERIAL AND METHODS:**

The study design was pre experimental one group pre test post test design with 100 samples were 10-13 years of school girls in selected school. Sample selected by using non-probability convenient sampling technique. Self structured knowledge questionnaire was used to collect the data, in which there were 20 questions to choose the right option assess the knowledge of the pre-pubertal girls regarding pubertal changes. The total score was calculated by summing up the answers given to the questions and categorised as inadequate, moderate & adequate knowledge. However after obtaining formal administrative approval from concerning authorities, informed consent was taken from the samples. Where the investigator personally collects the data and after that data collection, it is explained in 3 domains:

- Domain I : Pre-test was conducted to assess the level of knowledge Aspect consist of general information related to pubertal changes.
- Domain II: Aspect consists of knowledge related to physiological and psychological changes during pubertal period.
- Domain III: Aspect consist of problems and Management of pubertal changes.

## **FINDINGS**

### **Description of Frequency and Percentage Distribution of Demographic Characteristics of Respondents**

This Result indicated that out of 100 students, majority 53% were found in the age group of 10-11 years followed by 31% in the age group of 11-12 years.16% in the age group 12-13. Residence area shows in urban 51% and in rural area shows that 49%.In the study shows that there is 100% is from Hindu religion. In educational status of sample, majority 45% pre pubertal girls are in 5<sup>th</sup> standard and 27% is in 6<sup>th</sup> standard and 17% is in 7<sup>th</sup> standard and 11% is in 8<sup>th</sup> standard. In the study majority sample, 55% students do not have any siblings, followed by 33% who have one sibling and 12% who have two siblings. In the study sample 52% belongs to nuclear family and 34% belongs to joint family and 14% is in extended family. In the study 76% is vegetarian and 24% is mixed dietary pattern. Educational level of father shows that majority 45% have primary level and 32% have higher secondary level and other 23% have graduate level and educational level of mother shows that majority 77% have primary level and 23% have higher secondary level. Occupation of father shows that majority 53% is government employee and 38% is private employee and other 9% is unemployed and Occupation of mother shows that 53% is housewife and 47% is government employee.

### **Aspect wise Pre Test Mean Knowledge Scores on Pubertal Changes among Pre Pubertal Girls**

Result showed the aspect wise pre test mean knowledge of pre- pubertal girls. The result indicates that pre pubertal girls had highest mean knowledge score of 34% in the aspect of General information on Pubertal changes followed by mean knowledge score of 42.1% in the aspect of Problems & Management of Pubertal changes and a mean knowledge score of 34.8% in the aspect of Physiological & Psychological changes. However, the overall pre test mean knowledge score was found to be 38.3% with SD as 9.3.

### **Aspect wise Post test Mean Knowledge scores on pubertal changes among pre pubertal girls**

Result showed the aspect wise post test mean knowledge of pre pubertal girls. It findings indicates that highest mean knowledge score 81% was found in the aspect of General Information on Pubertal changes , followed by 79.5% mean knowledge score was in the aspect of Physiological & Psychological changes .Further ,the mean knowledge score of 79.2% were seen in the aspect of knowledge on Problems & Management of pubertal

changes. However, the overall post test means knowledge score was found to be 79.8% with SD as 4.7.

**Over all Pre test and Post test Mean Knowledge on Pubertal changes among pre pubertal girl**  
**N=100**

Aspects	Max. Score	Respondents Knowledge				Paired 't' Test
		Mean	SD	Mean (%)	SD (%)	
Pre test	20	7.65	1.9	38.3	9.3	44.26*
Post test	20	15.96	0.9	79.8	4.7	
Enhancement	20	8.31	1.9	41.6	9.4	

\* Significant at 5% level,  $t(0.05,99df) = 1.96$

**Classification of Pre test and Post test Knowledge level on Pubertal changes among pre pubertal girls**

Finding reveals that 80 (80%) of the pre pubertal girls had inadequate knowledge level in pre test as compared to none found to be with inadequate knowledge level in the post test, followed by 20 (20%) the pre pubertal girls had moderate knowledge level in pre test as compared to 24 (24%) of moderate knowledge level in the post test. Further, none of the pre pubertal girls had adequate knowledge level in pre test as compared to 76 (76%) of adequate knowledge level in the post test on pubertal changes. The data suggested for the chi-square test reveals that the knowledge level from pre test to post test found significant among pre pubertal girls on pubertal changes ( $\chi^2 = 153.36^*$ ,  $P < 0.05$ ).

**DISCUSSION**

The present study was conducted on effectiveness of education through virtual media on Pubertal changes among pre pubertal girls in selected schools. Result of the study indicated that Out of 100 pre pubertal girls, 80% of the Pre Pubertal girls had inadequate knowledge, 20% of Pre Pubertal girls had moderate knowledge and none of the Pre Pubertal girls had adequate knowledge. After the intervention Out of 100 pre-pubertal girls, 76(76%) of the pre-pubertal girls had adequate knowledge, 24 pre-pubertal girl had moderate knowledge and none of the pre-pubertal had inadequate knowledge.

There are various researches which supports the present study, the study of J Pediatric

Endocrinal Metab.e (2002) in urban Iranian girls about assess normal development in Iranian girls to define the growth and maturation associated with marked physiological and psychological changes result shows that the mean age at breast bud stage (B2) was 10.15 ,pubic hair stage ( PH2) was 10.48 and menarche was at 14.54years.<sup>9</sup> The article published by Stein James (1999) in Chicago about pubertal changes and first ejaculation shows that all of the boys in the group had sex education in the school, yet many felt unprepared for their first ejaculation.<sup>10</sup>

## **CONCLUSION**

The knowledge of pre-pubertal girls regarding the pubertal changes among the pre-pubertal girls was inadequate before the administration of Slide show. The Slide show was effective in all knowledge aspects in the post test. However, this study reveals that the Slide show on knowledge regarding pubertal changes among pre-pubertal girls was effective. Thus the analysis reveals that there is a significant difference between pre test and post test knowledge score of pre-pubertal girls on pubertal changes. Hence the stated Research hypothesis “There is a significant difference between pre-test and post test knowledge scores regarding pubertal changes among pre-pubertal girls” has been accepted.

## **Ethical approval**

Since the study involved human subjects, a formal ethical approval received from institutional ethical committee.

## **Conflict of Interest**

The authors declare no conflict of interest.

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## **REFERENCES:**

1. Marcell AV. Adolescence. In: Kliegman RM, et-al. Nelson Textbook of Pediatrics. 18th ed. Philadelphia, Pa: Saunders Elsevier; 2007:chap 12.
2. Marlow Dorothy.R,Redding.Barbara.A; “Textbook of Pediatric Nursing”, 6<sup>th</sup> edition,W.B.Saunders company,Philadelphia,2006,page 1115.

3. Ezpelectea Lourdes, etal “Prevalence of mental disorders in children and adolescents from a Spanish slum”, Science Direct, Social and Science Medicine, Vol:64, February 2007
4. Ahuja Abha, Tewary Saritha, “Awareness of pubertal changes among adolescent girls”, The Journal of Family Welfare, Volume 41, No:1, March 1995, Page 46-50.
5. Joshy B N, etal, “Reproductive Health Problems and Help Seeking Behaviour among adolescents in urban India”, Indian Journal of Pediatrics, Vol:73, January2006
6. 1st ed. Tehran: TablighatShahr, Department of Health Deputy in Semnan University of Medical Sciences; under the guidance and supervision of Malek Afzali.
7. 1st ed. Tehran: Ministry of Health and Medical Education, Department of Health (Bureau of Family Health); 1997. Ministry of Health and Medical Education; Adolescent Health: Guide for Parents and Teachers.
8. [Article.wn.com/.../Adolescents\\_form\\_over\\_18\\_of\\_karnatakas\\_population](http://Article.wn.com/.../Adolescents_form_over_18_of_karnatakas_population)
9. Rabbani A, Khodai S, Mohammad K, Sotoudeh A, Karbakhsh M, Nouri K, Salavati A. et al. Pubertal development in a random sampl J pediater Endocrinal Metab. Children Research Center. 2008 Jul; 21(7):681-7 Tehran, Iran. rabania@sina.tums.ac.ir.
10. Stein James. H, Reiser Whisnant Lynn, “A study of white Middle Class adolescent boys responses to semenarche”, Journal of Adolescence, 1996