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## A pre experimental study to assess the effectiveness of computer assisted teaching on knowledge and attitude of parents on the influence of mobile gadgets and internet use on the development of their children

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### ABSTRACT

*In today's society, electronic media are thoroughly integrated into the fabric of life, with television, movies, videos, music, video games, and computers, central to both work and play. While these media outlets can provide education and entertainment to children, many pieces of research are concerned with the negative impact of electronic media on children. Media is used as a third parent or servant. A lot of aspects is important related to media exposure and child behaviour. Media exposure affects the neurodevelopment, nutrition and health and academic achievements of the child. Parent education plays an important role in the behaviour modification of the children. The magnitude of the problem --World scenario. According to the Common Sense media research Study,(2013), 1,463 parents were surveyed of 8-year-olds from May 20 to June 12, 2013 Half (50%) of all children ages 0 to 8 have used mobile apps, up from just 16% in 2011. Use of mobile media starts young: more than a third (38%) of all children under 2 have now used a mobile device for any media activity compared to 10% two years ago; among 2- to 4-year-olds, the rate has gone from 39% to 80%; and among 5- to 8-year-olds it has gone from 52% to 83%. This magnitude of the usage of the mobile gadgets daily by the children for hours together lead to many problems. This mobile gadgets usage by children are allowed by the parents to their children for their own good reasons who are Purposive cluster sampling technique was used to select the setting of the study. Unaware that this practice can lead to many health issues in the growing children. Therefore this study aims to study the effectiveness of computer-assisted teaching on knowledge and attitude of parents on the influence of mobile gadgets and internet use on the development of their children". 20 parents of the children aged 6-12 years were selected from urban area of Delhi by Purposive cluster sampling technique was used to select the setting of the study. . Research design adopted was Pre experimental one group pre-test post-test only design for the present study. Instruments used for data collection. A self-administered structured Questionnaire, to collect demographic data and knowledge and an attitude scale regarding the effect of mobile gadgets on children aged 6 to 12 years. The results show that shows the pre-test and post-test level of knowledge score among parents on the influence of mobile gadgets and the internet on the development of children. In the pre-test, 70% of them are having inadequate knowledge, 30% of them are having a moderate level of knowledge and none of them are having an adequate level of knowledge. In post-test, none of them are having inadequate knowledge, 40% of them are having the moderate level of knowledge and 60% of the parents have an adequate level of knowledge. In the pre-test, 55% of them are having Poor attitude, 30% of them are having a moderate level of attitude and none of them are having a good level of attitude. In post-test, none of them are having Poor attitude, 35% of them are having a moderate level of attitude and 65% of them are having a good level of attitude. Knowledge and attitude of the parents were positively correlated at  $p= 0.001$  level in the post-test which proves that the computer-assisted teaching was very effective in the improvement of knowledge and attitude of the parents regarding the effects of the mobile gadgets on the children aged 6-12 years.*

**Keywords**— Mobile gadgets, Computer assisted teaching, Development of children

### 1. A PRE EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF COMPUTER ASSISTED TEACHING ON KNOWLEDGE AND ATTITUDE OF PARENTS ON THE INFLUENCE OF MOBILE GADGETS AND INTERNET USE ON THE DEVELOPMENT OF THEIR CHILDREN

This study aims to study the parent's perception and knowledge of the effects of the mobile gadgets on their children. This study will also try to understand the current exposure of children to the mobile gadgets, the effect or outcome of the gadget use on their

behaviour and social activity. As the researchers suggest that today's children are getting much exposure to the mobile gadget's screen, there could be harmful effects attached to it and this study aims to educate the parents on safe using of the mobile gadgets with their children to cultivate healthy childhood habits and to have a safe future and development physically, socially and emotionally.

This study aims to safeguard our children from any harmful effects of long screen viewing and educating the parents about the harmful effects and cultivate the safe use of it so our children can have a healthy development.

## 2. OBJECTIVES

- To assess the pre and post-intervention level of knowledge and attitude of parents on the influence of mobile gadgets and the internet on the development of children.
- To compare the pre and post-intervention level of knowledge and attitude of parents on the influence of mobile gadgets and the internet on the development of children.
- To associate the mean difference of pre and post-intervention level of knowledge and attitude of parents on the influence of mobile gadgets and internet on the development of children with their selected demographic variable.
- To correlate knowledge with the attitude of parents on the influence of mobile gadgets and the internet on the development of children/with the demographic variables.

## 3. ASSUMPTIONS

- Excessive mobile and internet usage have an impact on a child's health and development.
- All parents whose children use mobile gadgets needs awareness regarding the positive and negative effects of the mobile and internet usage on children

## 4. HYPOTHESES

**H<sub>1</sub>:** There will be a significant difference between pre and post interventional knowledge and attitude score of parents regarding the effect of mobile usages on child's development at 0.05 level of significance.

**H<sub>2</sub>:** There will be a significant association between pre and post-interventional knowledge and attitude score of parents with their selected demographic variables at 0.05 level of significance.

**H<sub>3</sub>:** There will be a significant correlation of knowledge score with attitude score of parents about the effect of mobile usages on child's development at 0.05 level of significance.

## 5. OPERATIONAL DEFINITION

**Knowledge:** It is an understanding and the ability of the samples to answer the questions on the effect of child's development by using mobile gadgets and the internet. This will be measured by a structured questionnaire developed by the investigator.

**Attitude:** It is the personal view of the parents regarding mobile usage and internet on child's development. It will be measured by a rating scale developed by the researcher.

**Computer-assisted teaching:** It is an educational interventional programme using the computer as an audio-visual aid to impart knowledge on the effect of mobile usage on a child's development.

**Children:** A child with the age group between 6 to 12 years.

**Parents:** Mother or father of child aged between 6 to 12 years.

**Mobile gadgets:** Electronic devices like Ipad, mobile phones, computer used for education and entertainment purposes by children.

**Internet:** A global computer network providing a variety of information and communication facilities, consisting of interconnected networks using standardized communication protocols.

**Development:** It refers to the **Child maturation** in terms of the biological, psychological and emotional changes that occur in human beings between the age group of 6 to 12 years.

## 6. THEORETICAL FRAMEWORK

**Wiedenbach, 'Helping Art of Clinical Nursing Theory.** The study is based on the conceptual framework developed by Ernestine Wiedenbach, known as 'Helping Art of Clinical Nursing Theory' otherwise 'The Prescription theory.' Period of Pilot study

The Study was conducted from May 15 to June 15, 2016. The sample was total 20 in number.

## 7. ETHICAL CONSIDERATIONS

The study was approved by the ethical committee and other ethical considerations maintained were like getting the consent from the participants, regarding the information about the research study the benefits to them by participating in the research and motivating them to join the research voluntarily. The participant's anonymity and confidentiality of the data were maintained. During the study, no harm was done to the participants.

## 8. INSTRUMENTS USED FOR DATA COLLECTION

- A structured Questionnaire, to collect demographic data which the respondents answered by themselves after reading the questions. The Structured questionnaire comprised of demographic details.
- A questionnaire to collect knowledge.
- An attitude scale regarding the effect of mobile gadgets on children aged 6 to 12 years.

**9. METHOD OF DATA COLLECTION**

Prior to the data collection written permission was obtained from the concerned authority. Informed consent from the parents. The 20 samples were selected by simple random sampling for the pilot study. The ethical aspect of the study was kept in mind. It took about 15-20 minutes for answering the questions and 45 minutes for the intervention. The pre-test was done on Sunday, after the pre-test, the intervention was given and after 7 days the post-test was taken from the participants.

**10. FINDINGS**

**Objective 1: To assess the pre and post-intervention level of knowledge and attitude of parents on the influence of mobile gadgets and the internet on the development of children**

**Table 1: Shows the percentage distribution of pre and post-interventional level of knowledge of parents on the influence of mobile gadgets and internet on the development of children,**

	Inadequate		Moderate		Adequate		Total
	n	%	n	%	n	%	
<b>Pre-test</b>	14	70.0%	6	30.0%	0	0.0%	20
<b>Post-test</b>	0	0.0%	8	40.0%	12	60.0%	20

Table 1 shows the pre-test and post-test level of knowledge score among parents on the influence of mobile gadgets and the internet on the development of children. In the pretest, 70% of them are having inadequate knowledge, 30% of them are having a moderate level of knowledge and none of them are having an adequate level of knowledge. In post-test, none of them are having inadequate knowledge, 40% of them are having a moderate level of knowledge and 60% of them are having an adequate level of knowledge

**Table 2: Shows the percentage distribution of pre and post-interventional level of the attitude of parents on the influence of mobile gadgets and internet on the development of children**

	Poor		Moderate		Good		Total
	n	%	n	%	n	%	
<b>Pre-test</b>	11	55.0%	9	45.0%	0	0.0%	20
<b>Post-test</b>	0	0.0%	7	35.0%	13	65.0%	20

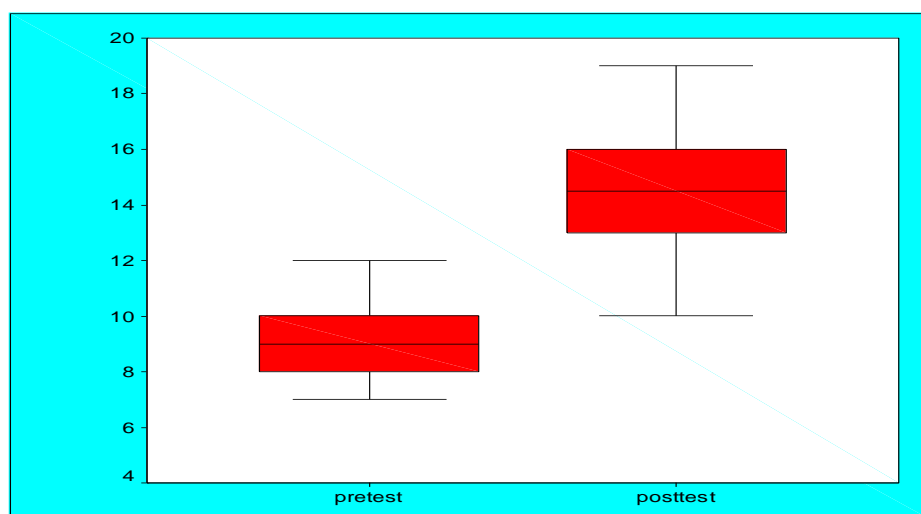
Table 2 shows the pre-test and post-test level of attitude score among parents on the influence of mobile gadgets and the internet on the development of children.

In the pretest, 55% of them are having a poor attitude, 30% of them are having a moderate level of attitude and none of them are having a good level of attitude. In post-test, none of them are having a poor attitude, 35% of them are having a moderate level of attitude and 65% of them are having a Good level of attitude.

**Table 3: Shows the overall comparison effectiveness of computer-assisted teaching on knowledge**

	Maximum score	Mean ±SD	Knowledge gain score	% of Knowledge gain score
<b>Pre-test</b>	20	9.20±2.61	5.40	27.0%
<b>Post-test</b>	20	14.60±2.04		

Table 3 shows the comparison of overall knowledge score between pre Intervention and post-intervention. On an average, 27% of knowledge gain score after computer-assisted teaching

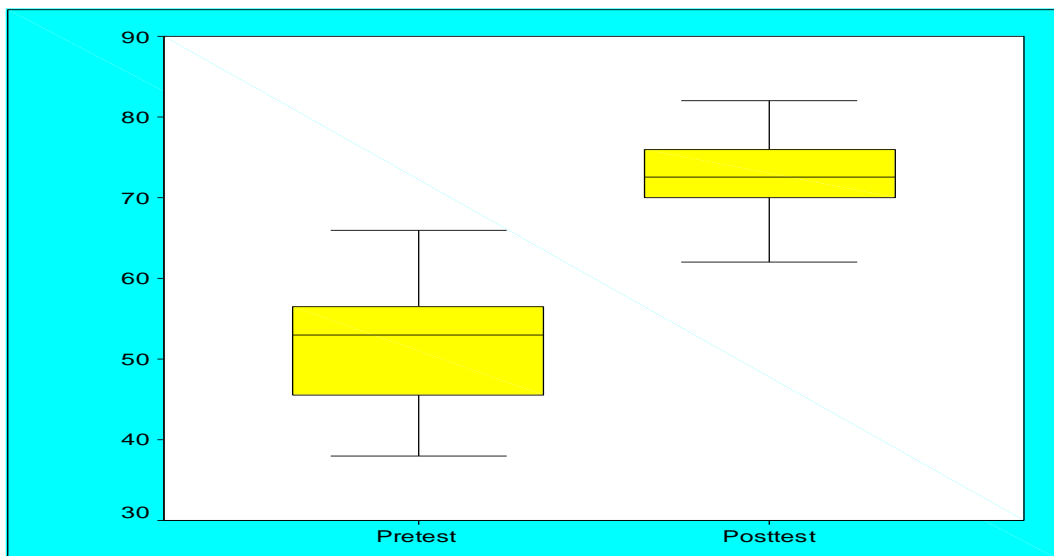


**Fig. 1: Pre-intervention and post-intervention knowledge score of parents on the influence of mobile gadgets and internet use on the development of their children. The pre-intervention and post-intervention attitude on parents on the influence of mobile gadgets and internet on the development of children statistically there is a significant difference between pre and post attitude score at p=0.001\*\*\*level of significance. It was calculated using the nonparametric Wilcoxon signed rank test.**

**Table 4: Overall comparison of the effectiveness of computer assisted teaching on attitude**

	Maximum score	Mean ±SD	Attitude gain score	% of Attitude gain score
<b>Pre intervention</b>	100	52.10±8.21	5.40	20.5%
<b>Post-intervention</b>	100	72.60±5.62		

Table 4 shows the comparison of overall attitude score between pre-intervention and post-intervention. The mean score in the Pre-intervention is 52.10 whereas the post-interventional attitude score was 72.60. On an average, 20.5% of attitude gain score after computer-assisted teaching.



**Fig. 2: Pre-test and post-test attitude score of parents on the influence of mobile gadgets and internet use on the development of their children**

**Objective 3: To associate the mean difference of pre and post-intervention level of knowledge and attitude of parents on the influence of mobile gadgets and internet on the development of children with their selected demographic variable**

Results show that the association of knowledge gain score and demographic variables. Elder father, elderly mother, more educated father, more educated mothers are having more knowledge score than others. It was confirmed using nonparametric Kruskalwallis H-test and Mann-Whitney U-test. The association of Attitude gain score and demographic variables. Elder father, elderly mother, more income father, health professionals are having more attitude score than others. It was confirmed using nonparametric Kruskalwallis H-test and Mann-Whitney U-test.

**Objective 4: Correlate knowledge with the attitude of Parents on the influence of mobile gadgets and the internet on the development of children/with the demographic variables.**

**Table 5: Correlation of knowledge with Attitude**

		Mean ± SD	Spearman rank correlation coefficient	Interpretation
<b>Pre-intervention</b>	Knowledge	17.69±3.85	r=0.16p=0.23 not significant	There is a not significant, positive poor correlation between knowledge and attitude score. It means knowledge increases their attitude also increases poorly.
	Attitude	6.11±3.36		
<b>Post-intervention</b>	Knowledge	34.51±4.65	r=0.56 p=0.001*** significant	There is a significant, positive moderate correlation between knowledge and attitude. It means knowledge increases their attitude also increases moderately.
	Attitude	13.26±2.74		

\* Significant at P≤0.05 \*\* highly significant at P≤0.01 \*\*\* very high significant at P≤0.001

**10.1 Interpretation for r-value**

Pearson correlation coefficient is denoted by “ρ”

“ρ” always lies between -1 to +1.

0.0- 0.2: Poor correlation

0.2- 0.4: Fair correlation

0.4- 0.6: Moderate correlation

0.6- 0.8: Substantial correlation

0.8- 1.0 strong correlation

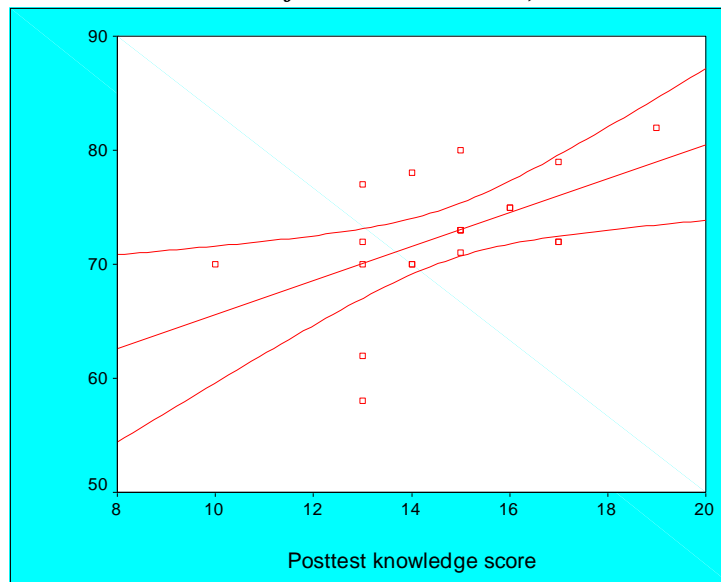


Fig. 3. Scatter diagram showing correlation of knowledge with an attitude

## 11. CONCLUSION

The study reveals that the parents are not having a significant knowledge about the effects of the mobile gadgets on the development of the children aged between 6-12 years-which are many like affecting the physical, psychological, social development of the children.

Therefore the computer-assisted teaching intervention helped the parents to gain knowledge and develop a positive attitude about the mobile gadgets on children and they learned the ways to prevent these effects on the children who are the future of the nation.

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