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EFFECTIVENESS OF VIDEO ASSISTED TEACHING ON KNOWLEDGE REGARDING ILL EFFECTS OF SMARTPHONE ADDICTION AMONG STUDENTS IN ELANGO CORPORATION HIGHER SECONDARY SCHOOL AT MADURAI.

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Abstract:

Background: Smartphone addiction among students is an emerging public health concern, impacting their mental, physical, and social well-being. Awareness about the ill effects of smartphone overuse remains inadequate among adolescents. **Aim:** To evaluate the effectiveness of a video-assisted teaching program on knowledge regarding the ill effects of smartphone addiction among students in Elango Corporation Higher Secondary School, Madurai. **Methods**: A quantitative quasi-experimental one-group pretest-posttest design was adopted. A total of 200 students aged 14–17 years were selected using probability simple random sampling. Data were collected through a structured knowledge questionnaire before and after the intervention. Descriptive and inferential statistics, including paired t-test and chi-square test, were used for analysis. **Results:** In the pretest, 59% of students had poor or very poor knowledge, with a mean score of 48.73±19.4. After the video-assisted teaching, 93% of students attained excellent knowledge, with a mean posttest score of 87.30±9.10. The improvement was statistically significant ($t=31.15$, $p\leq0.001$). Mother's education and occupation showed a significant association with posttest knowledge. **Conclusion:** Video-assisted teaching was effective in significantly improving students' knowledge about the ill effects of smartphone addiction. Early educational interventions can help foster healthier smartphone use habits among adolescents.

Keywords: smartphone addiction, students, video-assisted teaching, knowledge.

INTRODUCTION

Children are the world's most valuable resource and our best hope for the future. As Roosevelt said, "We may not prepare the future for our children, but we can prepare our children for the future." Today, children see magic in the world and are drawn to smartphones and games, making it rare to find an urban child without one. While smartphones offer the world at our fingertips, they also bring the risk of addiction.

Smartphones have become more than gadgets. They feel like extensions of ourselves, offering instant gratification through information, entertainment, and social media. Yet, excessive use has turned them into digital drugs, creating compulsive behaviors now called nomophobia which means fear of being without a mobile phone. This addiction, especially in students, leads to neglect of studies, impaired self-esteem, poor performance, and reduced social interaction.

While smartphones improve communication, productivity, and learning, overuse harms mental and physical health. Research shows heavy screen time increases depression, anxiety, sleep problems, memory loss, and even brain fog. Addiction may also cause musculoskeletal pain, eye strain, headaches, hyperactivity, and behavioral issues. The brain's craving for dopamine drives people to constantly check their phones, often at the cost of sleep and focus.

Despite these risks, smartphones remain indispensable, especially during the pandemic when they became vital for online education. They also connect people globally and offer affordable access to learning and entertainment. However, excessive exposure to screens, blue light, and inappropriate content can harm young minds, foster cybercrimes, and reduce real-world interactions.

In addition, phones emit non-ionizing radiation which some studies link to changes in brain activity, reaction time, and sleep patterns. Phones can also interfere with medical devices when used too close to them. To address these problems, video-assisted teaching has emerged as an effective method. It helps educate students about the harmful effects of smartphone addiction including physical, mental, and social consequences, along with ways to prevent them. Preventive measures like regular eye checkups, limiting screen time, and protecting against glare can help minimize damage.

NEED FOR THE STUDY

In 2024, global smartphone users reached 4.74 billion, a 2.2% annual rise. China leads with 974.69 million users, India follows with 659 million, and Pakistan has 72.99 million. Chennai's smartphone ownership is 66.1%. China also tops smartphone addiction rates, with a score of 36.18, followed by Saudi Arabia and Malaysia. India ranks 17th, with 34% of users addicted and 66% feeling anxious without their phones. In Tamil Nadu, 27.6% of youth show addiction, slightly higher in boys than girls. In Madurai, 42% of children under 12 spend 2–4 hours daily on screens.

In the US, 47% of students are addicted, checking their phones up to 96 times a day. In India, 44% of students show addiction symptoms. Smartphones, while valuable tools, harm mental and physical health when overused, leading to anxiety, depression, poor sleep, memory loss, and behavioral issues. Addiction in youth is often driven by peer pressure and social approval.

Parents are increasingly concerned. Surveys show 95% worry about screen addiction, while 80% fear gaming addiction and 70% adult content exposure. Problematic smartphone use disrupts daily life, cognitive skills, and sleep. Excessive use in young children also hampers emotional, social, and cognitive development. During the pandemic, smartphones became essential for online learning, but doctors observed rising behavioral problems in children. Educating students about the risks early, through tools like video-assisted teaching, can reduce harm and foster healthier habits. This study focused on assessing the effectiveness of video-assisted teaching in raising awareness about the ill effects of smartphone addiction among students in Madurai.

AIM OF THE STUDY:

The aim of the study to evaluate the effectiveness of video assisted teaching on knowledge regarding ill effects of smartphone addiction among students in Elango Corporation Higher Secondary School at Madurai.

MATERIALS AND METHODS

Study design and participants:

This study adopted a quantitative evaluative approach using a quasi-experimental one-group pretest-posttest design. The study was conducted at Elango Corporation Higher Secondary School, Madurai, among students aged 14–17 years. A total of 200 students were selected as the sample using probability simple random sampling (lottery method).

Inclusion and exclusion criteria:

Inclusion criteria were students aged 14–17, of both genders, who understood Tamil or English and consented to participate. Students who were on long leave, sick, or unwilling to participate were excluded.

Tools:

The research tool consisted of two sections. Section A collected socio-demographic details, and Section B was a structured knowledge questionnaire containing 20 questions, each carrying 5 marks. Scores ranged from 0–100, categorized into very poor (0–25), poor (26–50), good (51–75), and excellent (76–100) knowledge levels.

Ethical clearance:

Ethical clearance was obtained from the Institutional Ethical Committee of Madurai Medical College. Permissions were secured from the school and hospital authorities. Informed written and verbal consent was obtained from parents and students, ensuring anonymity, confidentiality, and the right to withdraw at any stage.

Data Collection Procedure:

Formal written permissions were obtained from the Institutional Ethical Committee, Madurai Medical College, the Principal of the College of Nursing, and the Dean and Director of the Paediatric Department at Madurai. Data collection was carried out from 03 June 2024 to 06 July 2024. Each session began with self-introduction, establishing rapport, and explaining the purpose and nature of the study. Students were selected using probability simple random sampling (lottery method), and both verbal and written informed consent were obtained. A total of 200 students, meeting the inclusion criteria, were enrolled over 10 days at a rate of 20 students per day. On the first day, socio-demographic data were collected and a pretest was administered using the structured knowledge questionnaire. Video-assisted teaching began the same day and continued for five consecutive days. The posttest was conducted on the sixth day using the same questionnaire. There were no dropouts, and confidentiality was maintained throughout the study.

Data analysis:

For data analysis, descriptive and inferential statistics were employed. Frequencies and percentages described socio-demographics. Means and standard deviations compared pretest and posttest scores. The paired t-test assessed the effectiveness of the intervention, and the Chi-square test analyzed associations between posttest knowledge and socio-demographic variables. All procedures adhered to ethical guidelines to protect the rights and welfare of participants.

RESULT:

Demographic variables:

The majority of students were aged 16 years (50%), followed by 17 years (20%), 15 years (20%), and 14 years (10%). Most were male (87%), with females comprising 13%. Regarding education, 50% were in 11th standard, 20% in 12th, 20% in 10th, and 10% in 9th standard. Most students (60.5%) lived in urban areas, while 24.5% were from rural and 15% from suburban areas. A majority (69.5%) belonged to nuclear families, with 26.5% in joint and 4% in extended families. Fathers' education was mostly up to higher secondary (34.5%), secondary (27%), primary (14.5%), non-formal (14%), and degree or above (10%). Mothers' education was higher secondary (37%), secondary (29.5%), non-formal (11.5%), degree or above (11.5%), and primary (10.5%). Regarding occupation, most fathers were self-employed (36.5%), daily wage earners (30%), private employees (26%), or government employees (7.5%). Mothers were mostly homemakers (56%), followed by daily wage earners (15%), self-employed (12.5%), private employees (8.5%), and government employees (8%). In terms of family income, 47% earned ≤ ₹7,315 per month, 32.5% between ₹7,316–₹21,913, 12% between ₹21,914–₹36,526, and 8.5% earned ₹36,527 or more.

Level of Knowledge:

Table 2 shows the comparison of students' level of knowledge regarding the ill effects of smartphone addiction in the pre-test and post-test (N=200). In the pre-test, 13.5% of students had very poor knowledge, 45.5% had poor knowledge, 30.5% had good knowledge, and only 10.5% had excellent knowledge. In the post-test, none of the students remained in the very poor or poor categories. About 7% had good knowledge, while a majority of 93% achieved excellent knowledge. The mean knowledge score improved from 48.73 ± 19.4 in the pre-test to 87.30 ± 9.10 in the post-test, indicating a significant gain in knowledge after the intervention.

Comparison of Mean score:

Table 3 presents the results of the paired t-test comparing pre-test and post-test knowledge levels about the ill effects of smartphone addiction among students (N=200). The mean knowledge score increased from 48.73 in the pre-test to 87.30 in the post-test, with a mean difference of 38.57. The standard deviation was 19.4 for the pre-test and 9.10 for the post-test. The computed t-value was 31.15 with 199 degrees of freedom, and the p-value was 0.000, indicating a very highly significant difference ($p \leq 0.001$) in knowledge levels after the intervention.

Association between the post-test level of knowledge:

The Chi-square analysis revealed that among the socio-demographic variables, only mother's education and mother's occupation were significantly associated with the students' post-test knowledge levels about the ill effects of smartphone addiction ($p \leq 0.05$). This indicates that students whose mothers had higher education or were employed demonstrated better improvement in knowledge after the intervention. No significant association was observed with other variables such as age, gender, grade, domicile, type of family, father's education, father's occupation, or family income.

Table 1: Frequency and percentage distribution of subjects according to their selected socio demographic variables. N = 200

S.No	Socio demographic variables		Frequency (f)	Percentage (%)
1	Age	a) 14 years	20	10
		b) 15 years	40	20
		c) 16 years	100	50
		d) 17 years	40	20
2	Gender	a) Male child	174	87
		b) Female child	26	13
		a) 9th std	20	10

3	Educational level of students	b) 10th std	40	20
		c) 11th std	100	50
		d) 12th std	40	20
4	Place of domicile	a) Urban	121	60.5
		b) Sub urban	30	15
		c) Rural	49	24.5
5	Type of family	a) Nuclear	139	69.5
		b) Joint	53	26.5
		c) Extended	8	4
6	Education of father	a) No formal education	28	14
		b) Primary Education	29	14.5
		c) Secondary Education	54	27
		d) Higher secondary Education	69	34.5
		e) Degree and above	20	10
7	Education of mother	a) No formal education	23	11.5
		b) Primary Education	21	10.5
		c) Secondary Education	59	29.5
		d) Higher secondary Education	74	37
		e) Degree and above	23	11.5
8	Occupation of father	a) Self employee	73	36.5
		b) Private employee	52	26
		c) Government employee	15	7.5
		d) Daily wages	60	30
9	Occupation of mother	a) Home maker	112	56
		b) Self employee	25	12.5
		c) Private employee	17	8.5
		d) Government employee	16	8
		e) Daily wages	30	15
10	Family monthly Income	a) ≤ ` 7315	94	47
		b) ` 7316 – ` 21,913	65	32.5
		c) ` 21,914 – ` 36,526	24	12
		d) ` 36,527 and above	17	8.5

Table: 2 Comparison of frequency and percentage distribution of level of knowledge in pre- test and post-test among students regarding ill effects of smartphone addiction. N=200

Level of knowledge	Pre test		Post test	
	f	%	f	%
Very Po or knowledge	27	13.5	0	0
Poor knowledge	91	45.5	0	0
Good knowledge	61	30.5	14	7
Excellent knowledge	21	10.5	186	93
Mean ± Standard deviation	48.73±19.4		87.30±9.10	

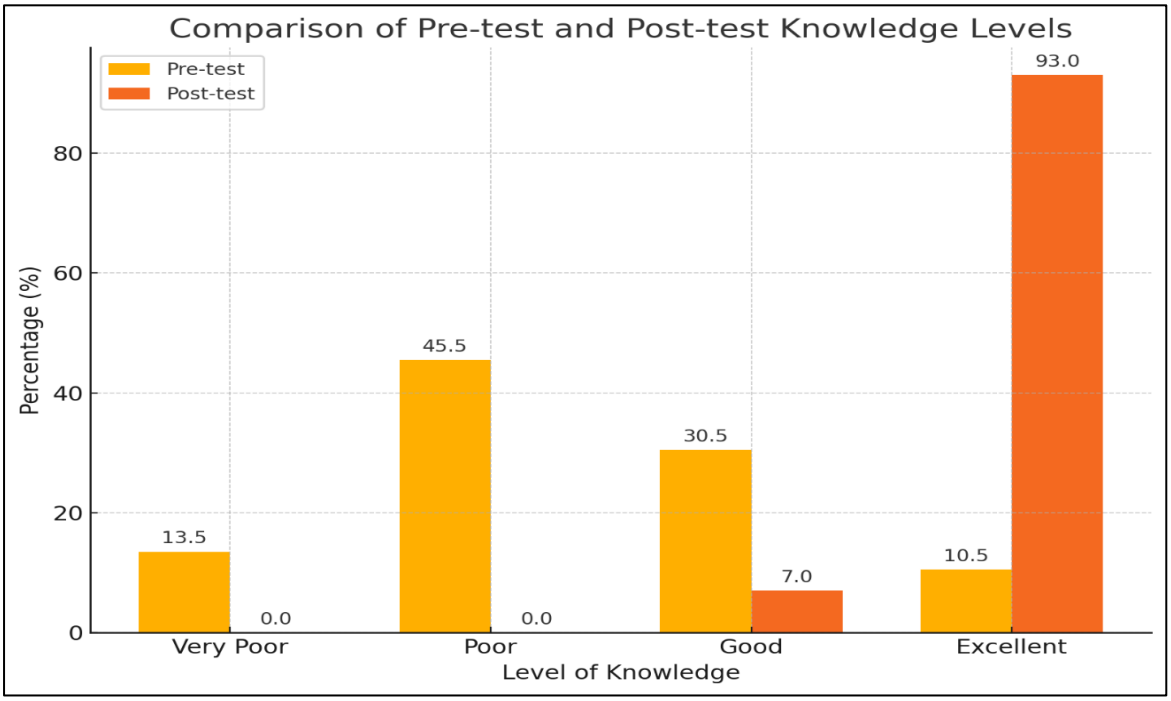

Figure 1: Comparison of frequency and percentage distribution of level of knowledge in pre- test and post-test among students

Table: 3 Paired 't' test showing the comparison between pre and post-test level of knowledge regarding ill effects of smartphone addiction among students. N=200

Variables		Mean	Mean difference	Standard deviation	't' value	df	"p" value
Level of knowledge	Pre test	48.73	38.57	19.4	31.15	199	0.000 VHS*
	Post test	87.30		9.10			

VHS* – Very Highly Significance at p≤0.001**, df** - Degrees of Freedom

DISCUSSION:

This study assessed the effectiveness of video-assisted teaching on students' knowledge about the ill effects of smartphone addiction at Elango Corporation Higher Secondary School, Madurai. A quasi-experimental one-group pretest-posttest design was used with 200 students selected randomly. Most students were 16 years old (50%), male (87%), in 11th standard (50%), and from urban areas (60.5%) and nuclear families (69.5%). In the pretest, 45.5% had poor knowledge, 30.5% good, 13.5% very poor, and only 10.5% excellent, with a mean score of 48.73 ± 19.4. After the intervention, 93% of students achieved excellent knowledge, with a mean score of 87.30 ± 9.10, showing significant improvement. Among socio-demographic variables, only mother's education and occupation were significantly associated with posttest knowledge levels. Other variables showed no significant association. The findings demonstrate that video-assisted teaching effectively improved students' knowledge about the ill effects of smartphone addiction.

The findings of the present study are supported by previous research. Shova Dawadi et al. (2022) conducted a cross-sectional study among 111 higher secondary students in Nepal to assess their knowledge regarding health hazards of cell phone use. They reported that a majority (89.2%) of students had poor knowledge, and only 10.8% had average knowledge. A statistically significant association was found between knowledge level and grade ($p=0.003$). These findings align with the current study, highlighting the lack of awareness among students about the health hazards of mobile phone use.

Similarly, Kannammal et al. (2020) conducted a quasi-experimental study on 30 adolescent students in Lucknow to evaluate the effectiveness of a video-assisted teaching program on knowledge about mobile phone hazards. They observed a significant improvement in knowledge after the intervention, with the mean score increasing from 8.83±2.50 in the pre-test to 16.77±1.99 in the post-test ($t=3.763$, $p<0.05$). This supports the current study's conclusion that educational interventions can significantly improve adolescents' knowledge about the harmful effects of mobile phone use.

CONCLUSION:

The study concluded that Video Assisted Teaching is an effective method to enhance students' knowledge about the ill effects of smartphone addiction. Additionally, a significant association was observed between students' knowledge levels and their selected sociodemographic variables, indicating that these factors influence their understanding of smartphone addiction.

RECOMMENDATION:

Future studies should include larger, more diverse populations and explore various teaching methods. The findings can serve as a baseline for further research, including experimental and comparative studies on knowledge and practices related to excessive mobile phone use.

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