



“A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO-ASSISTED TEACHING ON KNOWLEDGE REGARDING DISADVANTAGES OF MOBILE PHONE AMONG SCHOOL-GOING CHILDREN AT INDORE, MADHYA PRADESH.”

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Abstract

Background: Excessive mobile phone use among school-going children has become a growing public health concern due to its adverse effects on physical health, mental well-being, social interaction, and academic performance. Improving students' awareness through educational interventions may promote responsible mobile phone use and healthy digital habits.

Objectives: To assess the effectiveness of a video-assisted teaching programme on knowledge regarding the disadvantages of mobile phone use among school-going children and to determine the association between post-test knowledge scores and selected demographic variables.

Materials and Methods: A quantitative evaluative study using a pre-experimental one-group pre-test–post-test design was conducted among **100 school-going children** studying in selected schools of Indore, Madhya Pradesh. Participants were selected using a non-probability convenience sampling technique. Baseline knowledge was assessed using a structured 30-item questionnaire, followed by a 20-minute video-assisted teaching programme. A post-test was conducted seven days after the intervention using the same questionnaire. Data were analyzed using descriptive statistics, paired *t*-test, and Chi-square test.

Results: The mean pre-test knowledge score was 15.18 ± 3.84 , which increased significantly to 25.72 ± 2.91 in the post-test. The paired *t*-test showed a statistically highly significant improvement in knowledge ($t = 24.86, p < 0.001$). Significant associations were observed between post-test knowledge scores and age, class

of study, parents' educational status, daily duration of mobile phone use, and previous exposure to information ($p < 0.05$), whereas gender showed no significant association.

Conclusion: The video-assisted teaching programme was highly effective in improving knowledge regarding the disadvantages of mobile phone use among school-going children. Integrating audiovisual health education into school health programmes may promote responsible mobile phone use and contribute to the overall physical, psychological, and academic well-being of children.

Keywords: Video-assisted teaching, mobile phone, school-going children, knowledge, digital health, health education, adolescents.

Introduction

The widespread availability of smartphones has transformed the way children communicate, learn, and access information. Mobile phones have become an integral part of modern life, offering numerous advantages such as instant communication, online education, educational applications, emergency assistance, and access to digital resources. Following the expansion of internet connectivity and digital learning platforms, particularly after the COVID-19 pandemic, the use of smartphones among school-going children has increased dramatically. While mobile technology has enhanced learning opportunities and social interaction, excessive and inappropriate use has emerged as a significant public health concern affecting children's physical, psychological, social, and academic well-being.

School-going children are especially vulnerable to the adverse effects of excessive mobile phone use because they are in a critical stage of physical, cognitive, emotional, and social development. Prolonged screen exposure has been associated with digital eye strain, headaches, neck and back pain, sleep disturbances, reduced physical activity, obesity, and hearing problems due to prolonged headphone use. Furthermore, excessive smartphone use can negatively influence concentration, memory, academic performance, and classroom participation. Children who spend long hours on mobile phones are more likely to experience reduced attention span, poor study habits, and lower educational achievement.

Beyond physical health, excessive mobile phone use has important psychological and behavioral consequences. Studies have reported associations between problematic smartphone use and anxiety, stress, depression, irritability, loneliness, social isolation, and smartphone addiction. Continuous engagement with social media, online gaming, and entertainment applications may reduce face-to-face communication, impair interpersonal relationships, and expose children to cyberbullying, inappropriate online content, and internet-related risks. These challenges highlight the need for timely educational interventions that promote healthy digital habits and responsible technology use among school-aged children.

Health education is one of the most effective strategies for increasing awareness and encouraging positive behavioral changes. Among various educational approaches, video-assisted teaching has gained considerable attention because it combines visual and auditory learning, making information more engaging, understandable, and memorable. Videos simplify complex concepts through animations, demonstrations, and real-life examples, thereby improving students' comprehension, retention, and active participation. Compared with conventional lecture methods, video-assisted teaching provides a learner-centered approach that is particularly effective for school children with diverse learning styles.

Nurses play a vital role in school health promotion by identifying health-related problems, providing preventive education, and empowering children to make informed lifestyle choices. School health nurses and nursing educators can utilize video-assisted teaching programmes to educate students about the harmful effects of excessive mobile phone use and encourage balanced digital practices. Improving children's knowledge at an early age may contribute to healthier technology habits, better academic performance, improved mental well-being, and prevention of long-term health complications associated with excessive smartphone use.

Considering the increasing dependence on mobile phones among children and the limited awareness regarding their potential disadvantages, the present study was undertaken to assess the effectiveness of a video-assisted teaching programme on knowledge regarding the disadvantages of mobile phone use among school-going children in selected schools of Indore, Madhya Pradesh. The findings of this study are expected to provide evidence for integrating structured digital health education into school health programmes and nursing practice.

Need for the Study

The rapid advancement of digital technology has led to an unprecedented increase in mobile phone use among children and adolescents. Smartphones have become an essential part of daily life, serving as tools for communication, education, entertainment, and social networking. Although these devices offer several educational and practical benefits, their excessive and unsupervised use has become a growing public health concern. School-going children are increasingly spending long hours on mobile phones for online gaming, social media, video streaming, and internet browsing, often at the expense of academic activities, physical exercise, and healthy social interactions.

Research has shown that prolonged mobile phone use is associated with numerous adverse health outcomes, including digital eye strain, headaches, neck and back pain, sleep disturbances, reduced physical activity, obesity, poor posture, and hearing problems. In addition to physical health issues, excessive smartphone use has been linked with anxiety, depression, stress, poor concentration, decreased academic performance, reduced attention span, smartphone addiction, and social isolation. Children are also at increased risk of cyberbullying, exposure to inappropriate online content, privacy breaches, and unsafe online behavior due to inadequate awareness of digital safety.

School-age children represent a crucial developmental group in which healthy lifestyle habits and responsible technology use can be established. However, many students lack adequate knowledge regarding the harmful effects of excessive mobile phone use and the importance of maintaining healthy digital habits. Therefore, early educational interventions are essential to increase awareness and encourage responsible smartphone use before unhealthy behaviors become deeply established.

Video-assisted teaching has emerged as an effective educational strategy because it combines visual and auditory learning experiences, making information more interesting, understandable, and memorable. Compared with traditional classroom lectures, video-assisted teaching improves students' attention, comprehension, knowledge retention, and active participation. It is particularly suitable for school-going children, who often learn more effectively through interactive and audiovisual methods.

Nurses, school health educators, and teachers play an important role in promoting healthy behaviors among children through structured health education programmes. Developing and implementing video-assisted teaching programmes on the disadvantages of excessive mobile phone use can strengthen children's knowledge, encourage responsible digital practices, and reduce the risk of technology-related health problems. Despite the increasing use of smartphones among school children, limited interventional studies have evaluated the effectiveness of video-assisted teaching on this topic in the Indian school setting, particularly in Madhya Pradesh. Therefore, the present study was undertaken to assess the effectiveness of a video-assisted teaching programme on knowledge regarding the disadvantages of mobile phone use among school-going children in selected schools of Indore, Madhya Pradesh. The findings of this study are expected to provide evidence for planning effective school health education programmes and strengthening nursing practice in promoting digital well-being among children.

Objectives

1. To assess the pre-test level of knowledge regarding the disadvantages of mobile phone use among school-going children.
2. To develop and administer a video-assisted teaching programme on the disadvantages of mobile phone use among school-going children.
3. To evaluate the effectiveness of the video-assisted teaching programme by comparing the pre-test and post-test knowledge scores of school-going children.
4. To determine the post-test level of knowledge regarding the disadvantages of mobile phone use among school-going children.
5. To find the association between post-test knowledge scores and selected demographic variables such as age, gender, class of study, parents' educational status, family type, duration of daily mobile phone use, and previous exposure to information regarding the disadvantages of mobile phone use.

Hypotheses

H₁: There will be a statistically significant difference between the mean pre-test and post-test knowledge scores regarding the disadvantages of mobile phone use among school-going children after the administration of the video-assisted teaching programme.

H₂: There will be a statistically significant association between the post-test knowledge scores regarding the disadvantages of mobile phone use and selected demographic variables of school-going children, such as age, gender, class of study, parents' educational status, family type, duration of daily mobile phone use, and previous exposure to information, at the 0.05 level of significance.

Materials and Methods

Research Design

The study employed a **pre-experimental one-group pre-test and post-test research design** to evaluate the effectiveness of video-assisted teaching on knowledge regarding the disadvantages of mobile phone use among school-going children. This design enabled the comparison of participants' knowledge before and after the educational intervention.

Research Approach

A **quantitative evaluative research approach** was adopted to objectively assess the effectiveness of the video-assisted teaching programme in improving knowledge among school-going children.

Study Setting

The study was conducted in selected schools of **Indore, Madhya Pradesh**, after obtaining permission from the respective school authorities.

Study Population

The target population comprised **school-going children studying in classes VIII to X** in the selected schools of Indore.

Sample Size

A total of **100 school-going children** participated in the study.

Sampling Technique

Participants were selected using a **non-probability convenience sampling technique** based on the eligibility criteria and their willingness to participate.

Inclusion Criteria

Participants who fulfilled the following criteria were included in the study:

- School-going children studying in classes VIII to X.
- Aged between **13 and 16 years**.
- Able to understand and communicate in **Hindi or English**.
- Present during the period of data collection.
- Willing to participate in the study with **written parental/guardian consent** and student assent.

Exclusion Criteria

Participants with the following conditions were excluded:

- Students absent during either the pre-test or post-test.
- Students with cognitive or learning disabilities that could interfere with understanding the educational programme.
- Students who had previously participated in a structured educational programme on the disadvantages of mobile phone use within the preceding six months.

Research Instruments

Section A: Demographic Profile

A structured questionnaire was used to collect demographic information, including age, gender, class of study, family type, parents' educational status, average daily duration of mobile phone use, ownership of a mobile phone, purpose of mobile phone use, and previous exposure to information regarding the disadvantages of mobile phone use.

Section B: Structured Knowledge Questionnaire

Knowledge regarding the disadvantages of mobile phone use was assessed using a **30-item structured multiple-choice questionnaire** covering the following areas:

- Basic concepts of mobile phone use
- Recommended screen time for children
- Physical health effects (eye strain, headaches, poor posture, sleep disturbances)
- Psychological effects (stress, anxiety, smartphone addiction)
- Social consequences
- Academic impact
- Cyber safety and online risks
- Digital well-being and preventive measures

- Healthy mobile phone usage practices

Each correct response was awarded **one mark**, while incorrect responses received **zero marks**. The maximum attainable score was **30**.

Knowledge Score Interpretation

- **Poor Knowledge:** 0–10
- **Average Knowledge:** 11–20
- **Good Knowledge:** 21–30

Validity and Reliability

The research instrument and the video-assisted teaching programme were reviewed by experts in **Mental Health Nursing, Community Health Nursing, Child Health Nursing, Nursing Education, Educational Technology, and Pediatrics** to establish content validity. Reliability of the structured knowledge questionnaire was assessed using **Cronbach's alpha**, yielding a coefficient of **0.88**, indicating good internal consistency.

Data Collection Procedure

Prior permission was obtained from the school authorities before commencing the study. Written informed consent was obtained from parents or guardians, and assent was obtained from the participating students. Participants were informed about the objectives and procedures of the study.

A **pre-test** was conducted using the structured knowledge questionnaire to assess baseline knowledge regarding the disadvantages of mobile phone use.

Intervention

Immediately after the pre-test, participants received a **20-minute video-assisted teaching programme** prepared by the investigator. The educational video included audiovisual presentations, animations, illustrations, and simple explanations covering:

- Meaning and appropriate use of mobile phones
- Health hazards of excessive mobile phone use
- Effects on vision, posture, sleep, and hearing
- Psychological effects including stress and smartphone addiction
- Impact on academic performance
- Cyberbullying and internet safety
- Healthy digital habits
- Strategies for reducing screen time

- Responsible and balanced use of smartphones

Interactive discussion and clarification of doubts were conducted immediately after the video presentation.

Post-test Evaluation

A **post-test** was conducted **seven days** after the educational intervention using the same structured knowledge questionnaire to determine the effectiveness of the video-assisted teaching programme.

Ethical Considerations

Ethical approval was obtained from the **Institutional Ethics Committee** before the initiation of the study. Permission was obtained from the principals of the selected schools. Written informed consent from parents or guardians and assent from students were obtained before participation. Confidentiality and anonymity of participants were maintained throughout the study. Participation was voluntary, and students were informed of their right to withdraw from the study at any time without any academic consequences.

Statistical Analysis

The collected data were coded and analyzed using the **Statistical Package for the Social Sciences (SPSS) version 29.0**. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to summarize demographic characteristics and knowledge scores. The **paired t-test** was used to compare the pre-test and post-test knowledge scores to determine the effectiveness of the video-assisted teaching programme. The **Chi-square test** was applied to determine the association between post-test knowledge scores and selected demographic variables. A **p-value of less than 0.05** was considered statistically significant.

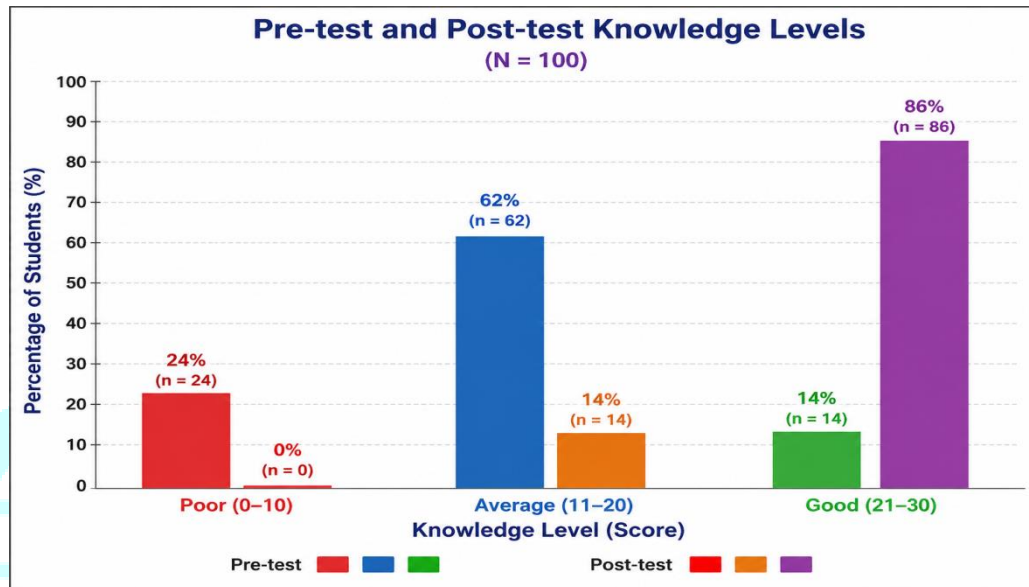
Results

Demographic Characteristics of the Participants

A total of **100 school-going children** participated in the study. Among them, **58%** were aged **13–14 years**, while **42%** were aged **15–16 years**. The majority (**54%**) were male and **46%** were female. Regarding class of study, **34%** were studying in Class VIII, **33%** in Class IX, and **33%** in Class X. Most participants (**68%**) belonged to nuclear families, whereas **32%** belonged to joint families. Nearly half (**48%**) reported using mobile phones for **2–4 hours daily**, **32%** used them for more than 4 hours, and **20%** used them for less than 2 hours per day. About **61%** of the participants owned a personal mobile phone, while **39%** used a family member's phone. Only **36%** had previously received information regarding the disadvantages of excessive mobile phone use.

Table 1. Distribution of Participants According to Pre-test and Post-test Knowledge Levels (N = 100)

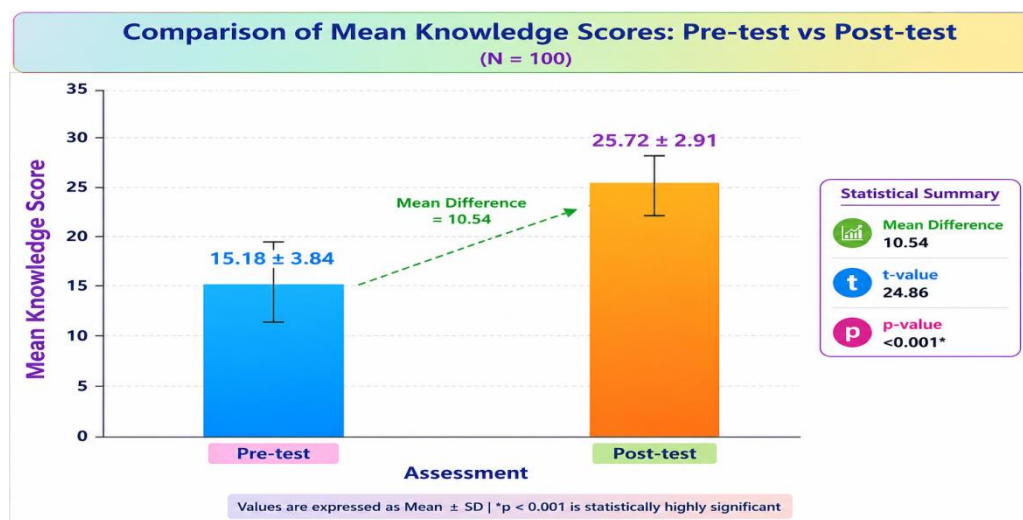
Knowledge Level	Score	Pre-test n (%)	Post-test n (%)
Poor	0–10	24 (24.0)	0 (0.0)
Average	11–20	62 (62.0)	14 (14.0)
Good	21–30	14 (14.0)	86 (86.0)



The majority of participants (62%) had **average knowledge** during the pre-test, whereas **86%** demonstrated **good knowledge** in the post-test following the video-assisted teaching programme, indicating a marked improvement in knowledge.

Table 2. Comparison of Mean Pre-test and Post-test Knowledge Scores (N = 100)

Assessment	Mean $\pm$ SD	Mean Difference	t-value	p-value
Pre-test	15.18 $\pm$ 3.84			
Post-test	25.72 $\pm$ 2.91	10.54	24.86	<0.001*



Significant at $p < 0.001$.

The mean post-test knowledge score (25.72 ± 2.91) was significantly higher than the mean pre-test score (15.18 ± 3.84). The paired **t-value of 24.86** was statistically significant (**p < 0.001**), demonstrating that the video-assisted teaching programme was highly effective in improving knowledge regarding the disadvantages of mobile phone use among school-going children.

Table 3. Association Between Post-test Knowledge Scores and Selected Demographic Variables (N = 100)

Demographic Variable	χ^2 Value	p-value	Interpretation
Age	6.48	0.039*	Significant
Gender	1.24	0.265	Not Significant
Class of Study	7.92	0.019*	Significant
Parents' Educational Status	9.36	0.009*	Significant
Daily Duration of Mobile Phone Use	8.74	0.013*	Significant
Previous Information	6.81	0.033*	Significant

Significant at $p < 0.05$.

A statistically significant association was observed between post-test knowledge scores and **age**, **class of study**, **parents' educational status**, **daily duration of mobile phone use**, and **previous exposure to information** regarding the disadvantages of mobile phone use ($p < 0.05$). However, **gender** did not show a statistically significant association with post-test knowledge scores ($p > 0.05$).

Summary of Findings

The findings revealed that the majority of school-going children had only **average knowledge** regarding the disadvantages of mobile phone use before the intervention. Following the implementation of the video-assisted teaching programme, there was a substantial improvement in knowledge, with most participants achieving **good knowledge** scores. The significant increase in mean knowledge scores and the highly significant paired t-test result (**t = 24.86, p < 0.001**) confirmed the effectiveness of the educational intervention. Furthermore, selected demographic characteristics, including age, class of study, parents' educational status, daily duration of mobile phone use, and previous awareness, were significantly associated with post-test knowledge levels.

Discussion

The present study demonstrated that the video-assisted teaching programme was effective in improving knowledge regarding the disadvantages of mobile phone use among school-going children. The mean knowledge score increased significantly from 15.18 ± 3.84 in the pre-test to 25.72 ± 2.91 in the post-test (**t = 24.86, p < 0.001**). Most participants achieved good knowledge after the intervention, indicating the

effectiveness of audiovisual learning. Significant associations were found between post-test knowledge and age, class of study, parents' educational status, daily mobile phone use, and previous information, whereas gender showed no significant association. These findings suggest that video-assisted teaching is an effective and practical method for promoting awareness about the harmful effects of excessive mobile phone use among school-going children.

Conclusion

The study concluded that the video-assisted teaching programme was highly effective in improving knowledge regarding the disadvantages of mobile phone use among school-going children. A significant increase in post-test knowledge scores demonstrated that audiovisual education is an effective approach for enhancing awareness and promoting responsible mobile phone use. The findings support the incorporation of video-assisted health education into school health programmes to encourage healthy digital habits and prevent the adverse effects of excessive mobile phone use among children.

Recommendations

- Similar studies may be conducted with a larger sample size to improve the generalizability of the findings.
- A randomized controlled or quasi-experimental design may be used to compare the effectiveness of different educational interventions.
- Long-term follow-up studies are recommended to assess knowledge retention and changes in mobile phone use behavior.
- Video-assisted teaching programmes should be incorporated into regular school health education to promote responsible and healthy mobile phone use among students.
- Further research may evaluate the impact of educational interventions on digital addiction, screen time, academic performance, and mental well-being among school-going children.

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