Effectiveness of Structured Teaching Programme on Knowledge regarding Health Hazards of Mobile Phone usage among Upper Primary Students in a Selected School at Bangalore

Mini Joseph

Tutor, Department of Child Health Nursing, St. John's college of Nursing, Bangalore, Karnataka, India

Abstract: *Young people watch video, express themselves, communicate with friends and search for information using smart phones. The use of mobile phones by young generation has increased resulting in physical, social and psychological impacts. Mobile phone addiction is most common in the age group between 12 - 18 years. The current study aimed to assess the pre - test level of knowledge regarding health hazards of mobile phone usage among upper primary school students, assess the effectiveness of structured teaching programme on knowledge regarding health hazards of mobile phone usage and to find the association between the existing level of knowledge regarding health hazards of mobile phone usage with selected socio- demographic variables. The research design selected for this study is pre - experimental one group pre - test post - test design. The study was conducted in Sevasadan U. P School, Bangalore, Karnataka. By using purposive sampling technique 30 upper primary school students, who have met the inclusion criteria, were selected as samples. After identifying the knowledge regarding health hazards of mobile phone usage by structured knowledge questionnaire Students were given structured teaching programme on health hazards of mobile phone usage. Then the investigator conducted post - test by using the same tool. Majority of the study subjects were unaware of health hazards of mobile phone usage. The administration of structured teaching programme helped to improve level of knowledge among upper primary school students regarding health hazards of mobile phone usage. The study results revealed that p value was significant for five socio demographic variables namely occupation of father, occupation of mother, hobbies, type of play and duration of phone usage per day with their existing knowledge.*

Keywords: Assess, structured teaching programme, questionnaire, knowledge, upper primary school students

1. Introduction

Mobile phones are most valuable one in today's world. There were an estimated 500 million mobile phone users worldwide. This hand sized product is needed for every category of people like youngsters, adults, women, students, old people and even children also. The portability and accessibility of a smart phone make it possible to use it anywhere for any duration. New research has shown that excessive use of mobile phone leads to the development of dependence syndrome. It affects their sleep wake pattern with serious health risks as well as attention and cognitive problem. As per the results shown by a study conducted in the year 2018 in New Delhi, India, it was found that around 14% of those surveyed use smart phones for 3 hours or less in a day while, around 63% use smartphone for 4- 7 hours daily[1]. A cross sectional study was conducted in the department of Paediatric OPD, at tertiary care teaching institute in Marathwada region of Maharashtra, India. All the children attending the department of Paediatric OPD, below the age of 15 years were included in the study during the period of January 2017 - March 2017. Majority 194 (43.1%) of the children were using mobile for 1 - 3 hours followed by 130 (28.8%) children those who used mobile for more than 4 hours. Physical morbidities like decreased physical activity seen in 189 (45.8%) children, laziness in 143 (34.7%) children, pain in fingers and wrist in 76 (18.5%), and eye symptoms in 148 (35.7%) children, Mental issues faced were throwing tantrums if mobile not given in 184 (45.3%) children, not obeying parents 110 (26.6%) and reduced grades in school 89 (21.4%). The use of mobile phones by young generation has increased resulting in physical, social and psychological impacts. It is the role of family to regulate the use or, guide the children for proper usage of mobile phone[2].

1.1 Significance of the study

In India around 120 million people use internet. According to literature study on cell phone usage, the number of smartphone users in India is expected to reach 690 million by 2030. The usage of mobile phone affects people of every age group positively as well as negatively, but has a great impact on teenagers. There are many reasons for the acceptance of mobile phone in teenagers. A study was carried out in the University of Malaysia where out of total students 36% students spend at least 10 hours on internet. The smart phone addiction results in personality disorders, physical and social impact. Understanding the basic information about health hazards of mobile phones, including its short term and long term effects, prevention and safe usage helps to control the use of mobile phones[3]. At this period, it is essential to investigate the level of awareness of health hazards of mobile phone, as knowledge influence their day - to - day life. The need of the study is to evaluate the effectiveness of structured teaching programmes on knowledge regarding health hazards of mobile phone usage among upper primary students and help the students to use this knowledge effectively while using mobile phones.

1.2 Operational Definition

Assess
It refers to the organized, and systematic process of collecting and analysing the data related to knowledge regarding health hazards of mobile phone usage among upper primary school students.

Effectiveness
It refers to extent to which structured teaching has achieved the desired out come in terms of gaining the knowledge regarding health hazards of mobile phone usage among upper primary school students.

Structured Teaching Programme
It refers to planned teaching programme prepared by the researcher to improve knowledge regarding health hazards of mobile phone usage among upper primary school students.

Knowledge
In this study it refers to the level of understanding of upper primary school students regarding health hazards of mobile phone usage.

Health Hazards
Harmful effects which is happening by over usage of mobile phone.

Upper Primary School Students
Students who are studying in class7.

1.3   Aim of the study

- Assess the existing level of knowledge regarding health hazards of mobile phone usage among upper primary students.
- Evaluate the effectiveness of structured teaching programme on knowledge regarding health hazards of mobile phone usage among upper primary students.
- Find out the association between existing level of knowledge regarding health hazard of mobile phone usage among upper primary school students with selected socio demographic variables.

1.4 Research hypothesis

H0: There is no significant difference between pretest and post test level of knowledge score regarding health hazards of mobile phone usage among upper primary school students.
H1: There is a significant difference between pretest and post - test level of knowledge score regarding health hazards of mobile phone usage among upper primary school students.

2.   Methodology

2.1 Research design

In this study, researchers have adopted pre experimental one group pretest post test design.

2.2 Setting

The present study was conducted in St. Mary's English Medium Upper Primary School, Door Pathanamthitta

2.3 Variables

- Dependent variable: In this study the dependent variable is the knowledge of upper primary school students on health hazards of mobile phone usage.
- Independent Variable: In this study structured teaching programme on health hazards of mobile phone usage is the independent variable.
- Demographic Variables: Demographic variables include the age, gender, educational status of father and mother, occupation of father and mother, and previous knowledge about the health hazards of mobile phone usage.

2.4 Sample and Sample Size

In this study sample selected was the upper primary school students of St. Mary's English Medium Upper Primary School, Adoor Pathanamthitta. Purposive sample of 30 students participated in the study.

2.4.1 Inclusion Criteria
- Students who are studying in 7th standard.
- Students who have given consent and attend all the sessions.
- Students who understand Malayalam.

2.4.2 Exclusion Criteria
- Students who are not willing to participate in this study.
- Students who are not present at the time of data collection.

2.5 Data Collection Tool

The tool used by researchers was structured knowledge questionnaire.

2.5.1 Section A: Demographic Proforma
Demographic data consists of demographic variables like age, gender, education of father and mother, occupationof father and mother, previous knowledge regarding the health hazards of mobile phone usage.

2.5.2 Section B: Structured knowledge questionnaire regarding health hazards of mobile phone usage
A structured knowledge questionnaire comprising of 30 questions which are used to assess the knowledge regarding the health hazards of mobile phone usage. Each right answer carries 1 mark and wrong answer carries 0 marks. The maximum score is 30.

2.6 Score ranking
Knowledge level will be classified based on score.

Table 1: Distribution of score and ranking

Score	Ranking
0 – 10	Poor
11 – 20	Average
21 – 30	Good

2.7 Validity and Reliability

The tool reviewed by 5 experts in pediatric nursing and community health nursing to test the content validity of tool. The necessary modifications were made according to the corrections given by the experts on related topic.

2.8 Pilot study

After obtaining permission from the concerned authority, a pilot study was conducted among three upper primary school students studying in seventh standard of St. Mary's U. P. School. The obtained data was analyzed and study design was found to be feasible by the investigator.

2.9 Data collection procedure

An official written permission was obtained from the principal of St. Mary"s U. P school, Adoor.30 students who fulfill the inclusion and exclusion criteria were selected by using purposive sampling technique. The purpose and nature of study was explained to subjects and consent was obtained. Pre - test was conducted by using structured knowledge questionnaire to assess existing knowledge regarding health hazards of mobile phone usage. Then structured teaching program which includes systematically developed teaching session aided with power point and video demonstration was given for duration of 45 minutes. Post - test was conducted followed by structured teaching program with the same knowledge questionnaire after 3 days.

2.10 Ethical considerations

Written consent obtained from the upper primary students after complete description of the purpose and nature of the study. They were informed that participation in the study is voluntary. The researchers informed students about their rights to withdraw from the study at any time without giving any reason and without any effect on them and confidentiality assured to each one of them.

2.11 Statistical Analysis

The Statistical package for social studies, version 20 was used. The collected data tabulated, summarised, computerised and analysed using appropriate descriptive and inferential statistical tests Demographic data was computed with the help of descriptive statistics. Analysis of the knowledge score is done with the help of frequency, percentage, mean, standard deviations and paired t test. The association between pre - test knowledge score and demographic variables were computed with the help of chi - square statistics. Level of significance at $p < 0.05$ was used as the cut off value for statistical significance.

3. Result

The collected information were organized and presented under four sections:
Section 1 –Distribution of frequency and percentage of demographic variables of students on knowledge regarding health hazards of mobile phone usage.
Section 2 –Frequency and percentage distribution of level of knowledge of upper primary school students regarding health hazards of mobile phone usage.
Section 3–Effectiveness of structured teaching programme on knowledge regarding health hazards of mobile phone usage.
Section 4 –Association between the existing level of knowledge of upper primary school students regarding health hazards of mobile phone usage with selected sociodemographic variables.

Section 1: Demographic Variables

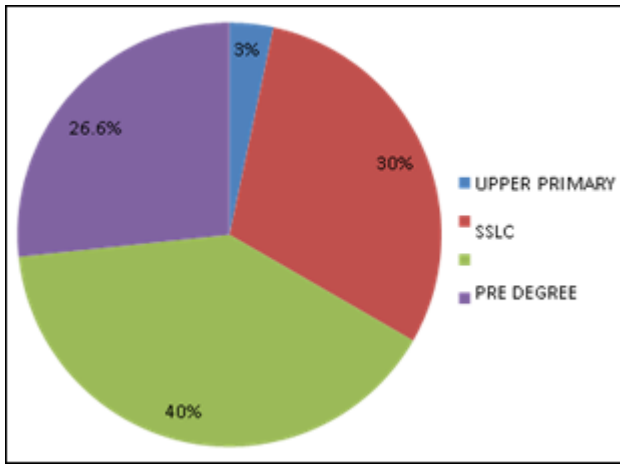**Table 2:** Distribution of frequency and percentage of samples based on gender, n=30

Gender	Frequency (f)	Percentage (%)
Male	5	16.66
Female	25	83.33
Others	0	0

This table shows that 5 (16.66%) were males and 25 (83.33%) were females.
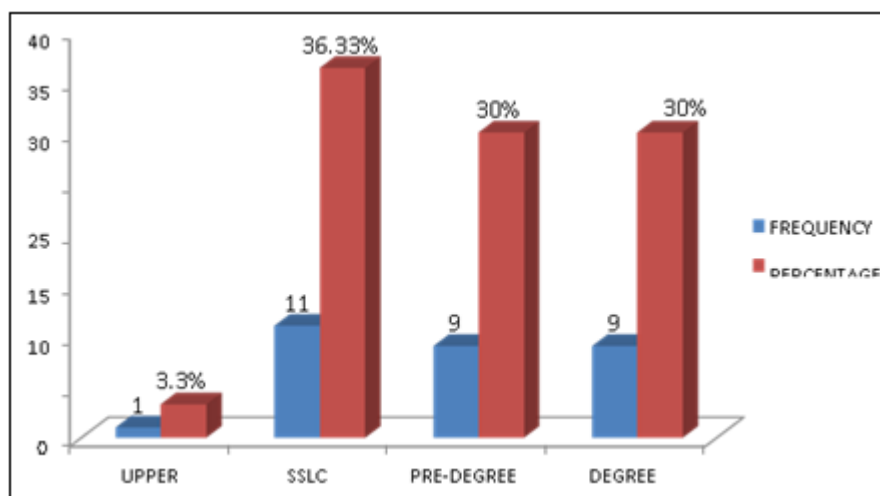
Figure 1: Distribution of Frequency and Percentage of Samples Based on Education of Father, n=30

This histogram shows that 3.3% attained upper primary education, 36.33% studied upto SSLC, 30% upto pre - degree and 30% up to degree.
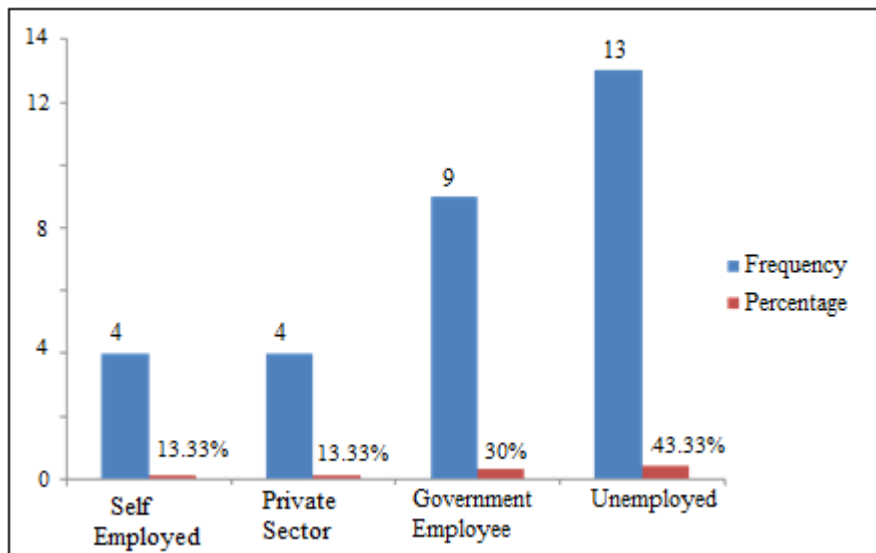
Figure 2: Distribution of Frequency and Percentage of Samples Based on Education of Mother

This pie diagram shows that 3% of mother attained primary education, 30% studied up to SSLC, 40% up to pre - degree and 26.6% till degree.

Table 3: Distribution of Frequency and Percentage of Samples Based on Occupation of Father, n = 30

Variable	Characteristics	Frequency	Percentage
Occupation of Father	Self Employee	10	33.30%
	Private Sector	4	13.33%
	Government Employees	16	53.33%
	Unemployed	0	0%

This table shows that out of 30 samples 10 (33.3%) were self - employed, 4 (13.33%) were working in private sector, 16 (53.3%) were government employees.
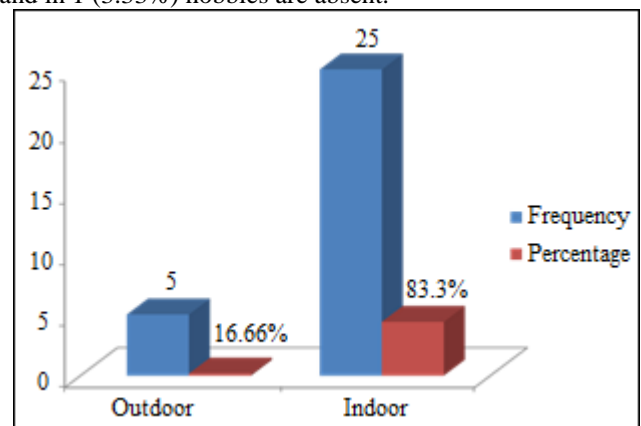

Figure 3: Distribution of Frequency and Percentage of Samples based on Occupation of Mother, n = 30

This bar diagram illustrates that out of 30 samples 4 (13.33%) were self - employed, 4 (13.33%) were working in private sector, 9 (30%) were government employees, and 13 (43.33%) were unemployed.
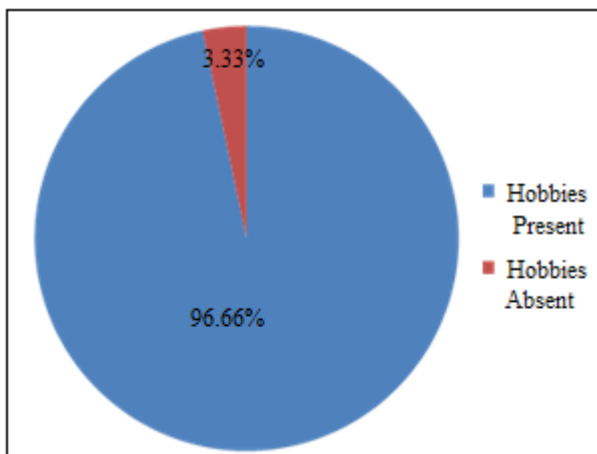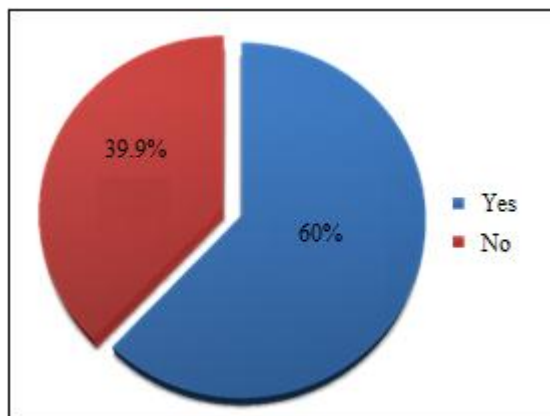

Figure 4: Distribution of Frequency and Percentage of Samples Based on Hobbies, n = 30

This figure shows that in 29 (96.66%) hobbies are present and in 1 (3.33%) hobbies are absent.

Figure 5: Distribution of Frequency and Percentage of Samples Based on Type of Play, n = 30

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This diagram shows that out of 30 samples 5 (16.66%) play outdoor games and 25 (83.3) prefer indoor games.
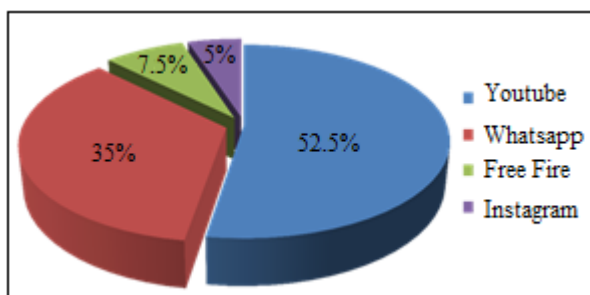

Figure 6: Distribution of Frequency and Percentage of Samples based on Knowledge about Health Hazards of Social Media, n= 30

This figure illustrates that 18 (60%) have knowledge about health hazards of social media and 11 (39.9%) do not have knowledge about health hazards of social media.
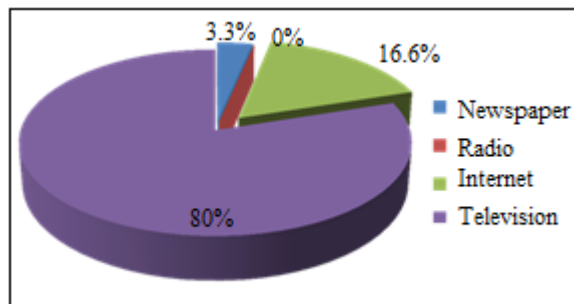
Figure 7: Distribution of Frequency and Percentage of Samples Based on Commonly Used Social Media, n=30

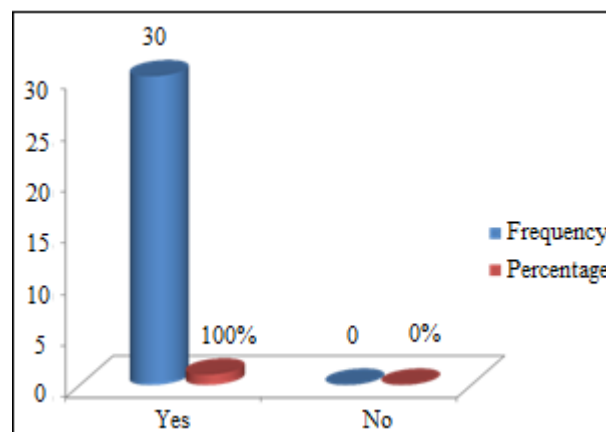This figure shows that 1 (3.3%) use newspaper, 5 (16.6%) use internet and 24 (80%) use television.

Figure 8: Distribution of Frequency and Percentage of Samples based on Commonly Used Social Media App, n=30

This figure shows that 21 (52.5%) use you tube, 14 (35%) use whatsapp, 3 (7.5%) use free fire and 2 (5%) instagram.

Figure 9: Distribution of Frequency and Percentage of Samples based on Parental Control Over Mobile Phone Usage, n=30

This diagram shows that 30 (100%) have parental control over mobile phone usage.

Table 4: Distribution of Frequency and Percentage of Samples based on Duration of Phone Usage Per Day, n =30

Duration of Phone Usage Per Day	Frequency	Percentage
2hours	4	13.3%
Continuous	0	0%
8hours	0	0%
1hour	26	86.6%

This table indicates that 4 (13.33%) use phone 2 hours per day and 26 (86.65%) use 1 hour per day.

Table 5: Comparison between pre - test and post - test knowledge of students regarding health hazards of mobile phone usage

S. No	Knowledge Score	Pretest Frequency	Pretest Percentage	Posttest Frequency	Posttest Percentage
1	Good	0	0	30	100%
2	Average	27	90%	0	0
3	Poor	3	10%	0	0

Data presented in this table indicates that out of 30 students, 27 had average knowledge and 3 had poor knowledge during pre - test, whereas in posttest, all of them attained good knowledge regarding health hazards of mobile phone usage.

Table 6: Mean, standard deviation, mean difference and calculated 't' value to compare pre - test and post - test knowledge score regarding health hazards of mobile phone usage among upper primary school students

Knowledge Score	Mean	Mean Difference	Standard Deviation	Standard Deviation difference	Degree of freedom	't' value
Pretest Posttest	12.9 28.16	15.26	2.35 1.20	1.15	29	37.1

The mean pre - test score was 12.9 (SD=2.35) which was significantly lower than the mean post test score 28.16 (SD=1.20) 't' table value was 37%. Since calculated value is greater than the table value, test is significant statistically. Hence null hypothesis (H0) was rejected and the research hypothesis (H1) was accepted. There is a significant

difference noted before and after the administration of structured teaching programme from this it is revealed that the structured teaching programme was effective in increasing the knowledge level of students regarding health hazards of mobile phone usage.

Table 7: Association between the existing level of knowledge of students regarding the health hazards of mobile phone usage with selected socio demographic variables

S. No	Demographic Variables	X2	Degree of Freedom	Table Value	Inference
1	GENDER	0.66	1	3.84	Not Significant
2	EDUCATIONOFFATHEER	4.585	3	7.82	Not Significant
3	EDUCATIONOFMOTHER	5.71	3	7.82	Not Significant
4	OCCUPATIONOFFATHER	20.96	3	7.82	Significant
5	OCCUPATIONOFMOTHER	10.43	3	7.82	Significant
6	HOBBIESTYPES OF PLAYKNOWLEDGE	7.5	1	3.84	Significant
8	ABOUTHEALTH	6	1	3.84	Significant
9	HAZARDS OFMOBILE PHONEUSAGE	2.403	2	5.99	Not Significant
10	COMMONLYUSEDSOCIALMEDIA	0.82	2	5.99	Not Significant
11	COMMONLYUSEDSOCIAL MEDIAAPP	0.454	3	7.82	Not Significant
12	PARENTRALCONTROL OVERMOBILEPHONE	0	0	0	Not Significant
13	DURATION OFPHONEUSAGEPERDAY	7.31	1	3.84	Significant

There is a significant association between occupation of father, occupation of mother, hobbies, and types of play and duration of phone usage per day.

4. Discussion

The present study was focused on the effectiveness of structured teaching programme on knowledge regarding health hazards of mobile phone usage among upper primary school students in selected school at Pathanamthitta district. In the present study, assessment of the existing knowledge level shows that 10% had poor knowledge and 90% had average level of knowledge. The findings where supported by a study conducted by Mrs. Amala Thomas, Mrs. Archana S Nair, Mrs. Blessy Vargherse, Ms. Josna Joseph and Ms. Melvi Thomas conducted to assess the level of knowledge regarding the computer vision syndrome among engineering students in a selected college at Kottayam. This study findings revealed that the majority (70%) of the students were having good knowledge regarding computer vision syndrome[4]. In the present study, the effect of structured teaching programme on knowledge regarding health hazards of using mobile phone among upper primary school students in selected school at karnataka district shows that mean pretest knowledge score was 12.9 which was significantly lower than the mean post test knowledge score28.16 with a mean difference of 15.26. The calculated „t" value (37.1) was more than the table value (2.05) at 0.05 level of significance at 29 degree of freedom. So there was a significant increase in the post test knowledge regarding health hazards of mobile phone usage. Hence null hypothesis (H0) was rejected and the research hypothesis (H1) was accepted. From this, it can be said that the structured teaching programme was effective in improving knowledge of upper primary school students regarding health hazards of mobile phone. The findings were supported by a study conducted by Tejeshwari B V in 2021 to assess the effectiveness of video assisted teaching programme on knowledge regarding impact of mobile phone use on health status among nursing students of selected colleges Bangalore. Data was analyzed by using descriptive and inferential statistics, out of 50 nursing students revealed that 16 (32%) participants has inadequate knowledge, 34 (68%) participants has moderate knowledgein pretest. Post test result shows that 48 (96%) has good knowledge and 2 (4%) participants has moderate knowledge.5 Archana conducted a study to assess the efficacy of video assisted teaching programme on internet addiction among students in selected commerce college at Rajkot. A quantitative research approach was used in study to assess the efficacy of this study. The study was conducted at SMT. MT. Damasania Commerce College Rajkot. In this study sample size was100. The mean pretest knowledge score of subject was 10.16 with mean percentage of 63.33 whereas mean post - test knowledge score of subject was 20.09 with mean percentage of 83.89. The mean post - test knowledge score was found to be significantly higher than pretest knowledge score at 0.05 level of significance.3In the present study, assessment of association between pretest knowledge of upper primary school students with selected demographic variables (gender, education of father and mother, occupation of father and mother, hobbies, type of play preferred, knowledge about health hazards of mobile phone usage, commonly used social media app, parental control over mobile phone duration of phone usage per day) shows that the calculated chi - square value was more than the table value at 0.05 level of significance for five socio demographic variables namely occupation of father, occupation of mother, hobbies, type of play, and duration of phone usage per day. Research hypothesis (H1) was rejected for all socio demographic variables except occupation of father, occupation of mother, hobbies, type of play, and duration of phone usage per day. Therefore knowledge of upper primary school students was influenced by occupation of father, occupation of mother, hobbies, type of play, and duration of phone usage per day. The findings were supported by a study conducted by Fancy Paul K, Jeeva Poulose, Jemily Augustin, Jeasmi Joseph, Jini Johnson, and Jinu C V in 2021 to assess the attitude and dependency on online social network usage among B. Sc. nursing students in Mala College of Nursing, Thrissur. The results revealed that 86.7%of students have positive attitude towards online social network usage, 4.4% of students have high dependency on online social network and there is a significant association between duration of online social network usage per day and dependency of subjects towards online social network usage[6].

5. Conclusion

The present study was aimed at evaluating the effectiveness of structured teaching programme on knowledge regarding health hazards of using mobile phone among upper primary school students. The result showed a significant improvement in knowledge level of upper primary school students after structured teaching programme and the knowledge of upper primary school students regarding health hazards of using mobile phone was influenced by occupation of father, occupation of mother, hobbies, type of play, and duration of phone usage per day.

6. Recommendations

- A similar study can be done with a control group and using a large population in the community.
- A study can be replicated in similar and different setting with large number of sample tovalidate and to make generalizations.

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