

**A PRE-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF
STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING
HEALTH HAZARDS OF USING SMART PHONE AMONG COLLEGE STUDENTS AT
SELECTED COLLEGES ROBERTSGANJ, U.P**

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ABSTARCT

The main aim of the study was to enhance the knowledge regarding health hazards of using smart phone among college students. The quantitative pre-experimental with one group pretest and post research design was used in the present study which includes 60 students of Sai Hospital & Institute of Pharmacy selected by purposive sampling technique. Data was collected from students by using socio-demographic variables and self structured knowledge questionnaire followed by pretest, teaching programme was given to students for 45 minutes. Post test was conducted after after 15 days with same questionnaire for same students. The results of the study showed that the pre-test knowledge scores was 73.4% students had average knowledge, 21.6% students had below average, 3.4% students had good knowledge and 1.6% students had poor knowledge score regarding health hazards of using smart phones. Post-test knowledge scores showed that 51.6% students were average knowledge and 48.4% of students were good knowledge and no students had below average and poor knowledge score. It was inferred that students knowledge was increased regarding health hazards of smart phone after structured teaching programme. In pre-test, mean score was 14.4 (SD=3.06) which increased to 19.71 (SD=2.42) in post-test and standard error is 0.50. The value of 't' is significant at p<0.05 level is 10.62.

Key words- knowledge, health hazards, smart phones, college students.

Introduction

Smart phone addiction is the commonest among all adolescent. Adults are facing the health hazards due to excessive smart phone abuse. The emission from a cell phone can be extremely

harmful, causing tumors, memory loss, and increased blood pressure and weakening the immune system.

Smart phone is a small portable communication device that enables people to make phone calls whenever where they are. Signal transmission is very basic concept for smart phone. The convenience of the smart phone is allowing people to communicate with one another without the limitation of region and time. Smart phone is a device providing two way communications. The technology influencing on smart phone back in the mid 20th century the very first smart telephony service was in Sweden¹.

The whole world is gripped by the smart craze, whether it is a student, house wife, shopkeeper, rickshaw driver, and milkman professional, rich or poor almost everyone carries a cell phone in his/ her hand. A smart phone must have item for many average teenagers. Many people spend more than six hours a day on their phones in talking, texting and playing games. The extensive use of cell phone is making us addict of this small device. Just like every medicine has its side effect, cell phone also has its drawbacks. The increased usage of smart phone has increased magnitude of potential health risk among its users².

Smart phone radiation disturb sleep pattern because electromagnetic field from smart phone use in bed significantly increase brain activity during early, non rapid eye movement sleep. For people who have used their cell phones for more than ten year and use their phones on the same side the tumor developed. It appears there was an association due to increase of electromagnetic and radio wave radiation, increasing number of illness such as neurodermatitis, fatigue, asthma, heart disease, depression, sleep disorder and ill temper are an the risk³.

The smart telecommunication has source of radio frequency radiation that produce energy heat up to tissue. During use smart phone usually kept close to the ear which is very near to the brain. It is suspected that continuous use of smart phone for large time may damage brain tissue⁴.

Karnataka government has planned to ban the use of smart phone for children up to the age 16 year. The reason for this ban is its adverse health effect, almost 2 year after smart phones were banned in school and colleges (In Karnataka)⁵.

Cellular phones increase the risk of brain cancer (brain tumor) and it also cause biological damage through heating effect. It cause other symptoms including headaches, ear ache, blurring of vision, short- term memory loss, and numbness, tingling and burning sensation, bad sleep, fatigue and anxiety. Single and double strand DNA breaks in brain cells increased after exposure

to radio frequency (RF). Exposure to both continuous wave and pulse RF (Smart phones) produced DNA damage. Research by other scientists indicates that prolonged use of smart phones may be lead to Alzheimer's disease or cancer (Brain tumor)⁶.

The biological effect of radiofrequency fields, current risk assessment is still limited. Apart from this various studies of smart phone, it over usage leads to smart phone dependence. The smart phone addiction mean that, usage of smart in compulsive repeated manner which the person cannot resist it is one of the biggest non drug addiction in world⁷.

STATEMENT OF THE PROBLEM

A pre-experimental study to assess the effectiveness of structured teaching programme on knowledge regarding health hazards of using smart phones among college students at selected colleges of Robertsganj, U.P.

OBJECTIVES OF THE STUDY

- To assess the knowledge regarding health hazards of using smart phones among college students.
- To assess the effectiveness of structured teaching programme on knowledge regarding health hazards of using smart phones among college students.
- To find out the association between post-test knowledge regarding health hazards of using smart phones among college students with selected socio-demographic variables.
- **HYPOTHESES**
- H₁: There will be a significant difference between the pre-test and post-test knowledge score regarding health hazards of using smart phones among college students.
- H₂: There will be a significant association between post- test knowledge scores with selected socio-demographic variables.

RESEARCH METHODOLOGY

- **Research approach :** Quantitative approach was selected.
- **Research design**

A pre-experimental one group pretest and posttest research design was used

Pre-Experimental group

$$O_1 \longrightarrow X \longrightarrow O_2$$

O₁ = Pre-test knowledge regarding health hazards of using smart phones was assessed.

X = Structured Teaching Programme which was administered to college students.

O₂ = Post-test knowledge regarding health hazards of using smart phones was assessed.

- **Research Setting**
- The present study was conducted in Sai Hospital & Institute of Pharmacy, Robertsganj, U.P
- **Sampling technique:** Purposive sampling technique
- **Variables**
 - **Independent variable:** Structured Teaching Programme
 - **Dependent variable:** Knowledge regarding health hazards of using smart phones.
 - **Extraneous variable:** Age, Gender, Family income, No. of Smart Phones, No. of Sim Card, Duration of Using Smart Phones, Source of Information.

Criteria for sample selection

Inclusion criteria

Students who were-

- Willing to participate in the study.
- Studying in D.Pharm 1st year
- Present at the time of data collection

Exclusion criteria

- Students who were absent on the day of data collection
- Students who were not willing to participating in the study.

DESCRIPTION OF THE TOOL

Tool was divided into two parts:

Part-I Socio demographic variables:

It consist of 7 items i.e. age, gender, family income, no. of sim cards, no. of smart phones, duration of using smart phones, source of information regarding health hazards of using smart phones.

Part-II Questionnaire on knowledge regarding health hazards of using smart phones:

It consists of multiple choice questions to test the knowledge of college students regarding health hazards of using smart phones. The test consist of 26 questions have 4 choice in which one is correct answer. Each correct response carried “1” score and incorrect response carried “0” score. The maximum score is 26 and minimum score is 0 .

Level of knowledge	Score	Percentage(%)
Good	>19	75 - 100%
Average	13-18	50 - 74%
Below average	8-12	25 - 49%
Poor	<7	0 - 24%

Table 1: criterion measure for level for knowledge

Maximum score=26

Minimum score=0

DATA COLLECTION PROCEDURE

The data collection for the study was carried out on 11/10/2019 to 26/10/2019 of with selection of selection studying D.Pharm 1st year at Sai Hospital & Institute of Pharmacy, Robertsganj. A formal permission was obtained from the principal of the college. Researcher first introduced herself to the respondent and explained study purpose and procedure. Consent was obtained from the students and was selected by purposive sampling technique. A pre-experimental research design was used and the tool was distributed to study subject and their pre-test was taken for 15-20 minutes, then structured teaching programme was given for 60 minutes. After 15 days post test was taken from the subjects. Data analysis was done by descriptive and inferential statistics. Descriptive statistics used was frequency, mean percentage and mean and S.D. inferential statistics were calculated by t –test and ANOVA test.

RESULTS

Table 2- Frequency and percentage distribution of sample characteristics

n=60

S.N	Sample characteristics	Frequency (f)	Percentage (%)
1.	Age (in years)		
	<20	1	1.6
	20-21	15	25
	22-23	35	58.4
	>23	9	15
2.	Gender		
	Male	54	90
	Female	6	10
3.	Family income (in rupees)		
	<15000	10	16.6
	15001-20000	16	26.6
	20000-25000	11	18.4
	>25000	23	38.4
4.	Number of mobile phone		
	1	52	86.6
	>1	8	13.4
5.	Number of sim cards		
	1	36	60
	>1	24	40
6.	Duration of mobile use(in hours)		
	<5	53	88.4
	5-10	7	11.6
	>10	0	0
7.	Source of information		
	Mass media	25	41.6
	Family & peers	11	18.4
	None of these	24	40

Table 2 depicted that in age 58.4% of them were 22-23 years and 1.6% of them were <20 years. In gender 90% of them were males and 10% were females. The family income states that

38.4% had family income more than 25000 and 16.6% had family income less than 15000. About 86.6% had one smart phone and 13.4% had more than one smart phone. Around 60% had one sim card and 40% had more than one sim card. The 88.4% were using smart phone less than 5 hrs. and no one was using smart phones more than 10 hrs. About 41.6% had information regarding health hazards of using smart phone from mass media and 18.4% had information from family and peers.

Table 3 - Frequency and distribution of pre-test knowledge score

n=60

Pre-test knowledge score	Frequency (f)	Frequency percentage (%)
Good	2	3.4
Average	44	73.4
Below average	13	21.6
Poor	1	1.6

Table 3 depicts the frequency and percentage distribution of pre-test knowledge score. It shows that 73.4% students had average knowledge while 21.6% students had below average and only 3.4% students had good knowledge .However, 1.6% students had poor knowledge score regarding health hazards of using smart phones.

Table4: Frequency and distribution of post-test knowledge score

n = 60

Post-test knowledge score	Frequency(f)	Frequency percentage (%)
Good	29	48.4
Average	31	51.6
Below average	0	0
Poor	0	0

Table 4 depicts the frequency and percentage distribution of post-test knowledge score. It shows that 51.6% had average knowledge score 48.4% had good score. However no students had below average and poor knowledge score regarding health hazards of using smart phones.

Comparison of pre-test and post-test knowledge score.

n=60

Level of knowledge					
Group	n	Mean	SD	Df	't'
Pre-test	60	14.4	3.06	59	10.62*
Post-test	60	19.71	2.42	59	

***Significant at p<0.05**

Table 5 depicts the effectiveness of structured teaching programme by comparing pre-test and post-test regarding health hazards of using smart phone. In pre-test, mean score was 14.4 (SD=3.06) which increased to 19.71 (SD=2.42) in post-test and standard error is 0.50. The value of 't' is significant at p<0.05 level is 10.62.

Hence, it is concluded that the structured teaching programme was effective in improving knowledge of the students.

Association between post- test and socio-demographic variables.

n=60

Sample Characteristics	N	Mean	SD	df	Test value 'f'
Age (in years)					
<20	1	24	0	3,56	2.71 ^{NS}
20-21	15	18.86	0.25		
22-23	35	20.2	0		
>23	9	18.7	0.23		
Gender					
Male	6	18.83	0.0081	1,58	0.85 ^{NS}

Female	54	19.81	0.042		
Family income(in rupees)					
<15000	10	18.9	0	3,56	18.7*
15001-20000	16	19.87	0.02		
20001-25000	11	19.27	0.009		
>25000	23	20.17	0.018		
Number of smart phones					
1	52	19.76	0.031	1,58	0.017 ^{NS}
>1	8	19.37	0.014		

Table 6 depicts that no significant association between post test knowledge regarding health hazards of using smart phones with selected socio demographic variables like age, gender, no. of smart phones, no. of sim cards, duration, source of information. There is only one significant association between post test knowledge regarding health hazards of using smart phones with family income.

DISCUSSION

The objective of the study was to assess the knowledge regarding health hazards of using smart phone among 1st year D.Pharm students of Sai Hospital & Institute of Pharmacy at Robertsganj.

The analysis of data revealed the percentage distribution of pre-test knowledge score. It shows that 73.4% students had average knowledge while 21.6% students had below average and only 3.4% students had good knowledge. However, 1.6% students had poor knowledge score regarding health hazards of using smart phones

The analysis of data revealed the percentage distribution of post-test knowledge score. It shows that 51.6% students had average knowledge score, 48.4% students had good score. However no students had below average and poor knowledge score regarding health hazards of using smart phones.

The analysis of data revealed the effectiveness of structured teaching programme by comparing pre-test and post-test regarding health hazards of using smart phone. In pre-test, mean score was 14.4 (SD=3.06) which increased to 19.71 (SD=2.42) in post-test and standard error is

0.50. There is a significant difference in mean of pre-test scores and post scores. Effectiveness of structured teaching is assessed by using inferential statistics. Paired 't' test was applied to evaluate the effectiveness of the structured teaching programme on the knowledge regarding health hazards of using smart phone. The value of 't' is significant at $p < 0.05$ level is 10.62.

A descriptive study was conducted on association of smart phone radiation with fatigue, headache, dizziness, tension & sleep disturbance in Saudi population. In this study 437 subjects were taken by convenience sampling technique in which 55% were male and 39% were female. Data were collected by using a questionnaire. The study results showed that people suffered from 21.65% headache, 4.03% sleep disturbance, 3.87% tension, 2.97% fatigue & 2.43% dizziness. So this study concluded that use of smart phones should be avoided by health promotion activities such as group discussion & public presentations.⁸

H₁: There will be a significant difference between the pre-test and post-test knowledge score regarding health hazards of using smart phones among college students.

So, it is concluded that the structured teaching programme was effective in improving knowledge of the students. Hence, H₁ is accepted and H₀ is rejected.

The study revealed that in association, there was significant relationship between family income regarding health hazards of using smart phones. There is no significant relationship between age, gender, no. of smart, no. of sim card, duration of smart use and source of information.

CONCLUSION

In this study the researcher found that structured teaching programme was effective and study shown that there was a significant differences in pretest and posttest knowledge scores on health hazards of smart phone among 1st year D.Pharm students.

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