



EFFECT OF AWARENESS PROGRAM ON KNOWLEDGE REGARDING HEALTH HAZARDS OF MOBILE PHONE USAGE AMONG SCHOOL STUDENTS IN A SELECTED HIGHER SECONDARY SCHOOL OF KOLKATA, WEST BENGAL

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ABSTRACT

Excessive mobile phone usage among adolescents is a growing concern due to related health hazards. This pre-experimental study was conducted on effect of awareness program on knowledge regarding health hazards of mobile phone usage among school students in selected higher secondary school of Kolkata, West Bengal. Objectives included to assess knowledge before and after the awareness program, evaluate its effectiveness, and examine associations with demographic variables. A total of 69 students were selected using disproportionate stratified random sampling. Data were collected through a semi-structured demographic proforma and a structured knowledge questionnaire. Results showed a significant increase in knowledge, with mean post-test scores (17.99 ± 2.27) higher than pre-test scores (10.23 ± 3.40), with a mean difference of 7.76 ($t=31.69$; $df=68$). Significant associations were found with selected demographic variables. The study highlights implications for nursing practice, education, administration, and research.

Key Words: Awareness program, Mobile phone usage, Health hazards, Knowledge, Adolescents.

INTRODUCTION

In the contemporary digital era, mobile phones have become indispensable tools that significantly influence everyday human behavior. The exponential growth in mobile phone usage globally is evident from current data. Children in the transitional phase of adolescence are particularly drawn to mobile technology due to their developmental need for social connection, autonomy, and exploration. According to the Digital 2023 India Report by Data Reportal, mobile connections in India as of January 2023 were equivalent to 77% of the total population. Although they provide communication and educational benefits, excessive use is associated with several health hazards such as eye strain, sleep disturbance, headache, poor posture, poor academic performance, and psychological issues like anxiety, addiction, social isolation. Adolescents are particularly vulnerable due to increased screen exposure and lack of awareness regarding safe usage. Therefore, awareness programs targeting school students are essential to enhance understanding, promote responsible use, and reduce the likelihood of health complications.

BACKGROUND OF THE STUDY

According to World Health Organization (2022) Adolescence, typically defined as the period between 10 and 19 years of age, represents a critical transitional phase from childhood to adulthood. It is marked by profound physical, emotional, and cognitive changes that significantly influence behavior, decision-making, and social relationships. This stage is essential for establishing lifelong health patterns and personal identity. Adolescents are vulnerable to various health challenges, including preventable illnesses, injuries, and even mortality.⁽¹⁾

In recent years, digital connectivity—especially through mobile phones—has become deeply embedded in adolescent life. Social media platforms like Facebook, Instagram, and Twitter have become common spaces for social validation, identity exploration, and communication. However, excessive use of these platforms has also been associated with increased exposure to cyberbullying, sleep disturbances, and mental health issues [Ministry of Health and Family Welfare (MoHFW), 2021; World Health Organization (WHO), 2022].⁽¹⁾



In India, nearly 9 out of 10 children reportedly own a smartphone, raising growing concerns about its impact on health and well-being. While smartphones provide a sense of safety for parents and enable children to remain connected, their overuse is increasingly associated with psychological and physical health risks. Excessive smartphone use has been linked to issues such as musculoskeletal problems, nerve strain, anxiety, depression, stress, reduced attention span, sleep disruption, and even social withdrawal. Some users, particularly adolescents, develop a compulsive attachment to their devices—constantly checking for notifications and displaying signs of irritability or discomfort when separated from their phones. Such behavior reflects the addictive potential of smartphones and underlines the importance of balanced usage (McAfee, 2023).⁽⁵⁾

It could be inferred that administering an awareness program could bring about a desirable change among adolescent school going students regarding hazards of mobile phone usage. We, the health personnel can play a vital role in creating awareness among adolescent school going students regarding hazards of mobile phone usage by health education and disseminating accurate information to them.

OBJECTIVES

1. To assess the knowledge of school students regarding the health hazards of Mobile Phone usage before and after administration of awareness program.
2. To evaluate the effectiveness of awareness program on knowledge regarding health hazards of mobile phone usage.
3. To find out the association between the pre-test knowledge and selected demographic Variables.

RESEARCH METHODOLOGY

Research approach

Quantitative research approach was adopted for the present study.

Research Design: In this present study, pre-experimental (one group pre-test post-test research design) was used.

Population & Sample: The study population included all higher secondary school students of Kolkata, West Bengal with a sample of 69 numbers of higher secondary school students of 6th, 7th and 8th standard in Dum Dum Road Govt. Sponsored high school for Girls' (H.S.), Kolkata, West Bengal, who met the inclusion & exclusion criteria and available during data collection period.

Sampling Technique: In the present study, Kolkata circle1 was selected purposively among 23 circles of Kolkata and Dum Dum Road Govt. Sponsored high school for Girls' (H.S.), Kolkata, West Bengal was selected by Simple random technique from the list of schools under 8 (eight) Govt. and Govt. sponsored Bengali medium, higher secondary, North sub-division, Circle-1, Kolkata Zone school collected from DI Office by slip bag without replacement method. Total 163 students from 6th standard and 161 students from 7th standard and 161 students from 8th standard were present in the school. Using disproportionate stratified random sampling technique 23 students from 6th standard, 23 students from 7th standard and 23 students from 8th standard were selected and total 69 participants were selected as samples.

Data collection tools and techniques

Tool I: Semi structured demographic proforma

Tool II: Structured knowledge questionnaire

Technique: Paper pencil test



RESULT

Table 1: Frequency and Percentage Distribution of Selected Demographic Variables Among School Students.
(n = 69)

Variables	Categories	Frequency (f)	Percentage (%)
Age (years)	11–13	43	62.32
	13–15	26	37.68
Standard of class	Class VI	23	33.33
	Class VII	23	33.33
	Class VIII	23	33.34
Type of family	Nuclear	35	50.72
	Joint family	19	27.54
	Extended family	15	21.74
Educational status of father	No formal education (cannot sign)	Nil	0.00
	No formal education (can sign)	8	11.59
	Primary education	6	8.70
	Upper primary education	5	7.25
	Secondary education	14	20.29
	Higher secondary education	22	31.88
	Graduation	9	13.04
	Above graduation	5	7.25
Educational status of mother	No formal education (cannot sign)	Nil	0.00
	No formal education (can sign)	1	1.45
	Primary education	7	10.14
	Upper primary education	9	13.04
	Secondary education	21	30.43
	Higher secondary education	18	26.10
	Graduation	9	13.04
	Above graduation	4	5.80
Occupational status of father	Service	35	50.72
	Self-employed	15	21.74
	Unemployed	Nil	0.00
	Daily labour	7	10.14
	Homemaker	2	2.90
	Others	10	14.50
Occupational status of mother	Service	9	13.04
	Self-employed	5	7.25
	Unemployed	5	7.25
	Daily labour	4	5.80
	Homemaker	43	62.32
	Others	3	4.34
Socio-economic class (Modified B.G. Prasad Scale, 2024)	Upper class	14	20.29
	Upper middle class	14	20.29
	Middle class	30	43.48
	Lower middle class	7	10.14
	Lower class	4	5.80



Type of mobile phone use	Smartphone	66	95.65
	Feature phone	3	4.35
Period of mobile phone usage	<1 year	4	5.80
	1–3 years	23	33.33
	3–6 years	14	20.29
	>6 years	28	40.58
Frequency of mobile phone use	Daily	34	49.28
	Several times a week	20	28.98
	Once a week	9	13.04
	Rarely	6	8.70
	Never	Nil	0.00
Duration of mobile phone use	<2 hours	25	36.23
	2–4 hours	23	33.33
	4–6 hours	13	18.84
	>6 hours	8	11.60
Presence of previous knowledge	Yes	27	39.13
	No	42	60.87

Sources of Knowledge Regarding Health Hazards of Mobile Phone Usage Among Students (n = 27*)

Variables	Categories	Frequency (f)	Percentage (%)
Sources of knowledge	Books/Magazines/Newspapers/Journals	5	18.52
	Internet/Television/Radio/Multimedia	7	25.93
	Family/Friends/Relatives/Teachers	8	29.62
	Awareness programs/Seminars/Workshops	7	25.93

Note: Nil indicates zero frequency.

*Multiple responses were obtained; therefore, data are exhaustive but not mutually exclusive.

Majority (62.32%) of school students were within the age group between 11-13 years. Majority (50.72%) of school students were belonged to nuclear family. The father of maximum school students (31.88 %) had higher secondary education. The mother of maximum school students (30.43%) had secondary education. The occupational status of fathers of majority of school students (50.72 %) were service. The occupational status of mothers of majority of school students (62.32 %) were home maker. Maximum of school students (43.48 %) belonged to middle socioeconomic class (class-III). Most of school students (95.65%) were used smart phone. Maximum school students' (40.58 %) period of mobile phone usage were >6 years. Maximum school students (49.28 %) were used mobile phone daily. Maximum (36.23%) of them used mobile phone < 2 hours. Majority (60.87 %) of school students were not received any information previously. Maximum (29.62 %) of school students' sources of knowledge regarding health hazards of mobile phone usage from family, friends and teachers.

Table 2: Distribution of Study Subjects According to Pre-test and Post-test Knowledge Scores Regarding Health Hazards of Mobile Phone Usage Before and After Administration of Awareness Program (n = 69)

Knowledge Level	Range of Score	Pre-test f	Pre-test (%)	Post-test f	Post-test (%)
Excellent (>80%)	>18	Nil	0.00	29	42.03
Good (60–80%)	13–18	21	30.43	40	57.97
Average (50–59%)	11–12	13	18.85	Nil	0.00
Poor (<50%)	<11	35	50.72	Nil	0.00

Maximum possible score = 22

Minimum possible score = 0

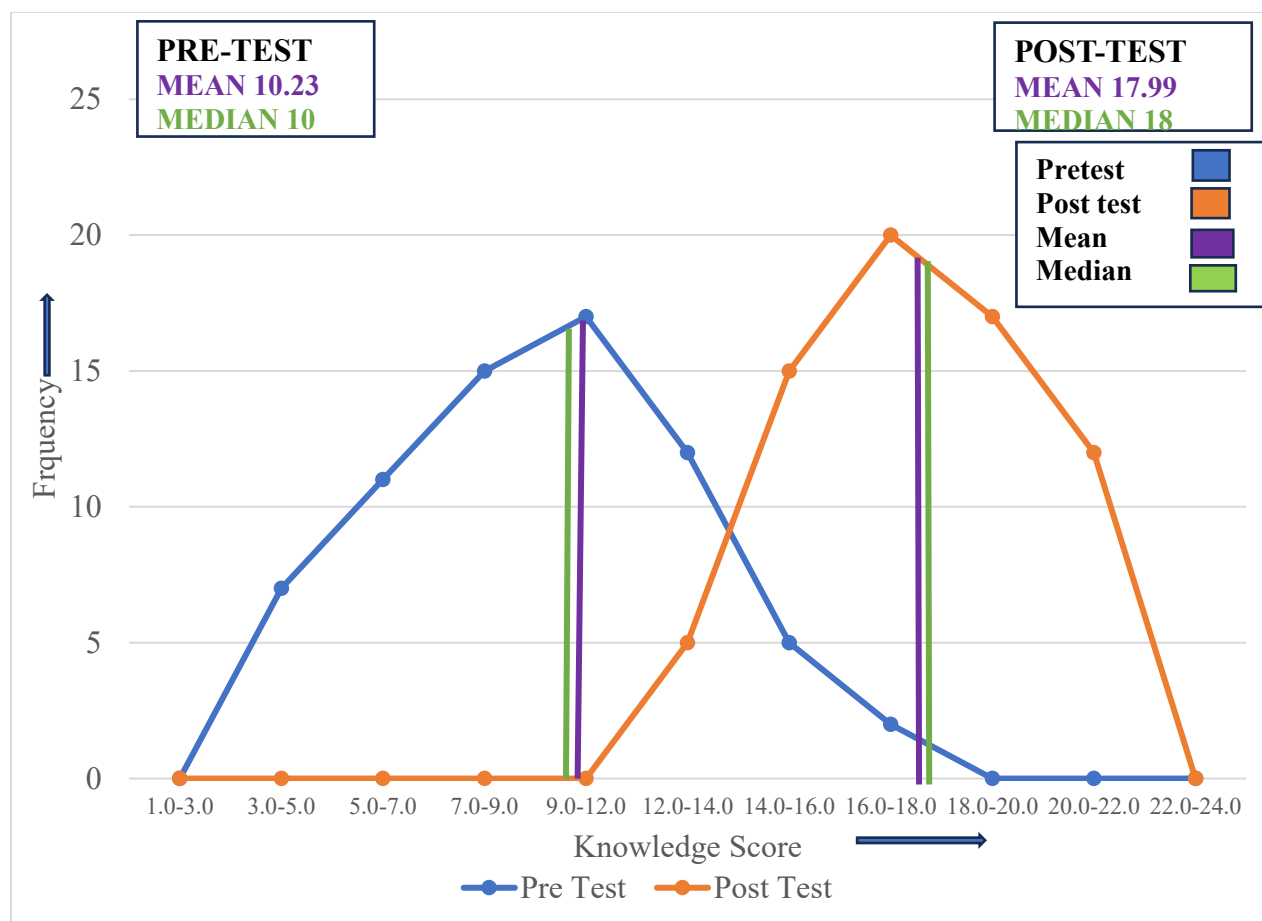


Fig: Frequency polygons showing distribution of Pretest and Post test knowledge score of school students

This figure showed the distribution of Pretest and Post test knowledge scores of higher secondary school students with depicted mean and median. The Pretest knowledge score ranged from 4-18, with the mean of (10.23 ± 3.40) and median of 10, maximum frequency 17 which lies in class interval of 9-12. In this distribution, the mean was lying on the right side of the median. So, the distribution was positively skewed, and the skewness was 0.09. In the Post test, knowledge score ranged from 14-22, with the mean of (17.99 ± 2.27) and median of 18, maximum frequency 20 which lies in class interval of 16-18. In this distribution, the mean was lying on the left side of the median. The distribution was negatively skewed and the skewness was -0.02. The value of skewness was negligible indicating score were almost normally distributed. The figure also showed that the Post test knowledge score lied to the right of the Pretest knowledge score, indicated that the Post test knowledge score of the school students was increased.

Table 3 Comparison of Pre-test and Post-test Knowledge Scores Regarding Health Hazards of Mobile Phone Usage Among School Students (n = 69)

Knowledge Score	Mean	Mean Difference	Median	Standard Deviation (SD)	't' value
Pre-test	10.23		10	3.40	
		7.76			31.69
Post-test	17.99		18	2.27	

t (df = 68) = 31.69, p < 0.05

Data presented in the table 3 revealed that the mean post-test knowledge score (17.99 ± 2.27) of school students was apparently higher than the mean pre-test knowledge score (10.23 ± 3.40) with a mean difference of 7.76.



Paired 't' test was computed from the above data, which was found to be statistically significant as evident from the corresponding computed 't' value (31.69), which was higher than the tabulated 't' value ('t' =1.99) for df (68), indicating that the mean difference (7.76) was a true difference and not by chance.

Hence, Null hypothesis (H_{01}) was rejected and research hypothesis (H_1) was accepted. So, it could be concluded that the awareness program regarding health hazards of mobile phone usage was effective in increasing knowledge of higher secondary school students.

Table 4 Chi square test values showing the association between pretest knowledge score regarding health hazards of mobile phone usage among school students and selected demographic variables.

Table: Association Between Pre-test Knowledge Scores and Selected Demographic Variables (n = 69)

Demographic Variable	Category	χ^2 Value	p Value	Result
Age (in years)	10–13 / 13–15	0.05	0.83	Not Significant
Type of family	Nuclear / Others	5.22	0.02	Significant*
Educational status of father	< Secondary / $\geq$ Secondary	0.24	0.62	Not Significant
Educational status of mother	< Secondary / $\geq$ Secondary	0.83	0.36	Not Significant
Occupation of father	Service / Others	0.13	0.72	Not Significant
Occupation of mother	Employed / Unemployed	5.23	0.022	Significant*
Socio-economic class	> Middle / $\leq$ Middle	0.02	0.87	Not Significant
Type of mobile phone use	Smartphone / Feature phone	0.006	0.94	Not Significant
Period of mobile phone use	$\leq$ 3 years / > 3 years	0.29	0.59	Not Significant
Frequency of mobile phone use	Daily / Several times a week	0.13	0.72	Not Significant
Duration of mobile phone use	< 2 hours / $\geq$ 2 hours	10.47	0.001	Significant*
Presence of previous knowledge	Yes / No	13.40	0.0003	Significant*

χ^2 (df = 1) = 3.84; p = 0.05; Yates correction applied

Significant at 0.05 level

The study findings revealed that pre-test knowledge scores were significantly associated with type of family, occupational status of mother, duration of mobile phone usage, and presence of previous knowledge. However, no significant association was found with age, educational status of parents, occupation of father, socio-economic class, type of mobile phone, period of use, and frequency of use.

Thus, the null hypothesis (H_{02}) was rejected for selected variables and accepted for others.

DISCUSSION

The study findings indicate a significant improvement in knowledge following the awareness program. Similar studies have demonstrated that structured educational interventions effectively enhance awareness among adolescents. The findings highlight the importance of school-based health education programs in preventing health hazards associated with excessive mobile phone usage.

CONCLUSION

The present study was aimed at evaluating the effect of awareness program on knowledge regarding health hazards of mobile phone usage among higher secondary school students. Educational interventions in schools can play a critical role in healthy tech habits among promoting healthy adolescents. The result showed a significant improvement in knowledge level of school students after awareness program, and the knowledge of school students regarding health hazards of mobile phone usage was influenced by types of family, occupation of mother, duration of phone usage per day and the presence of previous knowledge. The awareness program should focus more on the area of strategies to reduce side effects of mobile phone use. Frequently repeated awareness programs should be conducted to increase and retain their knowledge.



RECOMMENDATIONS

A similar study can be conducted on

- A boys and girls school setting
- with a control group and using a large population in the community
- A similar study can be conducted using other teaching methods like video assisted teaching, information booklet etc.
- A comparative study can be done between rural and urban school students.

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