Received	Modification	Accepted	Published
14/4/2021	---	22/4/2021	12/05/2021

ISSN Print: 2581-8546 ISSN Online: 2582-2934

Original Article

A STUDY TO ASSESS THE KNOWLEDGE ON ILL EFFECTS OF CELL PHONES AMONG ADOLESCENTS IN SELECTED URBAN COMMUNITY OF JAIPUR WITH A VIEW TO DEVELOP AN INFORMATION BOOKLET ON PREVENTION OF ILL EFFECTS OF CELL PHONES

Mr. Amogh Bibra[1], Dr. Yogesh Yadav[2]

[1]Associate Professor, M.Sc. Nursing, Institute of Medical Technology & Nursing Education, Jaipur, Rajasthan
[2] Dean & Principal, MV Global University, Jaipur

Corresponding email: pareekamogh261@gmail.com

ABSTRACT :

Introduction: Cell phones are a vast improvement over the telecommunications technology of the past, and are daily becoming a fixture of modern life cell phones have become a necessity for many people throughout the world. The ability to keep in touch with family, business associates, and access to email are only a few of the reasons for the increasing importance of cell phones. The aim of study was to assess the level of knowledge on ill effects of cell phones among adolescents. To find out the association between knowledge of adolescents regarding ill effects of cell phones and selected demographical variables such as age, gender, education use and source of information regarding ill effects of cell phone. To develop and distribute an information booklet regarding prevention of ill effects of cell phones among adolescents.

Methods: Non experimental descriptive survey design, a descriptive survey approach was used to find out the knowledge of ill effects of cell phones among adolescents. A descriptive survey approach was used for the study. The sample consisting of 100 adolescents. They were chosen by non probability convenient sampling technique. The study was conducted at urban community of Jaipur. The data was collected after the distribution of Information Booklet (IB)by a structured questionnaire.

Results: The finding show that majority of subjects were in the age group of adolescents 50(50%) were belongs to 17-19 years, 32(32%) were in the age group of 14-19 years, and 18(18%) of the subjects were belongs to 10-13 years. Gender wise distribution of the subjects showed that majority 60 (60%) were male and 40 (40%) were female. In relation to the education majority of the subjects 56(56%) were from Secondary and above, 14(14%) were from primary and middle school and 30(30%) were Secondary school. Majority 66(66%) adolescents got information through mass media, 6 (6%) were got information through friends, 0(0%) were got information through other sources &about 18 (28%) did not get any information on ill effects of cell phones and none of the samples got any information from health professionals. the level of knowledge of adolescent, nearly half of the adolescents 48 (48%) had average knowledge, around 46 (46%) had poor knowledge, and only 6 (6%) had good knowledge regarding the ill effect of cell phone. None of them had very good knowledge. Area wise mean score percentage on knowledge of adolescents regarding ill effects of cell phone reveals that highest mean percentage (55.20%) was found in the area of knowledge regarding "basic concepts of cell phones" with mean± SD of 2.76±0.77. The mean percentage of knowledge score in the area of "effects of cell phones" was 35.50 % with mean±SD of 4.26±2.60. In the area of "precautions for cell phone usage" the mean percentage was 39.50 with an area wise mean ± SD of 3.16±1.82. Analysis revealed that out of 25 maximum attainable score the total mean percentage 40.72% mean ± SD of 10.18 ± 4.40.That the chi square values of demographic variables like age, education and source of information regarding ill effects of cell phones were significant at 0.05 level of significance. Thus it is concluded that there was significant association between knowledge score and the selected demographic variable such as age, education and source of information regarding ill effects of cell phones.

Conclusion: The study revealed that the Information Booklet was found to be an effective strategy for providing information on prevention of ill effects of cell phones for improving the knowledge of adolescents.

Keyword: Ill effects of cell phones, Adolescents, Prevention, Information Booklet.

DOI:10.46376/GNJI/4.I.2021.307-312

ISSN Print: 2581-8546 ISSN Online: 2582-2934

INTRODUCTION

Many of the items we use today are a result of technology. Our cell phone, microwave oven, washing machine, and plastic cup are all the result of scientific discoveries combined with engineering that have allowed people to invent products that have improved the way people live. Technological advances have improved our health, the food we eat, the clothes we wear, how we travel, and how we communicate with one another. There are a few drawbacks to some aspects of technology but overall technology has greatly improved many aspects of living for most people.[1]

Cell phones are a vast improvement over the telecommunications technology of the past, and are daily becoming a fixture of modern life cell phones have become a necessity for many people throughout the world. The ability to keep in touch with family, business associates, and access to email are only a few of the reasons for the increasing importance of cell phones. When cell phones were first introduced to the public, they were bulky, expensive, and some even required a base unit that had to be transported along with the phone. Good reception was a major problem and in general, early cell phones could only be used in certain locations were the signal was particularly strong. As cell phone technology advanced, the difficult in using them became less of a problem. Today, cell phone reception has improved greatly due to the use of satellites and wireless services. As cell phones improved and became simple to use, the importance of cell phones increased accordingly.[2]

Communication is essential in every area of life. It doesn't matter whether one is at work, in college or out socially. However it would be used as a form of communication. It could be anything from using the telephone or sending e-mails, to giving presentations or writing reports.[3]

The cellular telephone system is a way of providing portable telephone services. Each phone is connected by a radio link to a base station; in turn this is linked to the telephone network which is the largest machine on the planet.[3]

Cell or cellular phone - a portable, handheld communications device connected to a wireless network that allows users to make voice calls, send text messages and run applications.[4]

Cell phones and their network vary very significantly from provider to provider and country to country. However the basic communication method of all of them is through the electromagnetic microwaves with a cell base station.[2]

Cell phones have features beyond sending text messages and making the short or long distance voice calls, the other features including internet browsing, mp3 playback music, email, personal organizer, built in cameras, MMS, PPT, SMS, call registries, built in games, voice mails, downloading, video call, Bluetooth, infrared and they also serve as the wireless modem for a personal computer. [2]

Cell phones transmit and receive Radio Frequency (RF) signals in order to communicate. The RF signals from [cell] phones fall within the microwave part of the electromagnetic spectrum. This radiation is also referred to as microwave radiation or electromagnetic radiation. Electromagnetic waves alter [electric activity of the brain] and cause disturbance in sleep; because difficulty in concentration, fatigue, and headache [2]; and increase reaction time in a time-dependent manner .They increase the resting blood pressure and reduce the production of melatonin. They are also implicated in DNA strandbreaks.[4]

NEED OF THESTUDY

Communication is essential in every area of life. The cellular telephone system is a way of providing portable telephone services. Each phone is connected by a radio link to a base station; in turn this is linked to the telephone network which is the largest machine on the planet.[5]

A cell telephone or cellular telephone is a long-range, portable electronic device used for cell communication. In addition to the standard voice function of a telephone, current cell phones can support many additional services such as SMS for text messaging, e-mail, pocket switching for access to the Internet, and MMS for sending and receiving photos and video.[6]

The cell phone is a modern-day invention, which has managed to reach many parts of the world enabling telecommunications across areas where it was not possible before. In the year 2000, there were an estimated 500 million cell phone users worldwide. Today, there is about 3.3 billion users2.The use of cell phones among young children and adolescents is also increasing dramatically.[7]

Although cell phones seem to be the ideal device for simplicity and connectedness, nothing is perfect. Therefore, nothing is without some negative effects. Such negative effects of cell phones on the youth are

DOI:10.46376/GNJI/4.I.2021.307-312

ISSN Print: 2581-8546 ISSN Online: 2582-2934

health risks such as mental health, bullying, eye strain and digital thumb, brain tumours and low sperm counts, lack of sleep and their addiction and no self- control in owning a cell phone.[8]

A survey was conducted in USA regarding "Teens and Cell Phones" among 800 teens age 12 to 17 years. The findings revealed that half of teens send 50 or more text messages a day, or 1,500 texts a month, and one in three send more than 100 texts a day, or more than 3,000 texts a month. Over half (52%) of teens ages 16-17 who own cell phones reported that they have talked on a cell phone while driving. Over a third (34%) has texted while behind the wheel. Boys and girls were equally likely to report both talking and texting while driving. Text messaging has become the primary way that teens reach their friends, surpassing face-to-face contact, e-mail, instant messaging and voice calling as the go-to daily communication .[9]

A survey was conducted among randomly selected 160 university students in Poland to assess the subjective symptoms related to cell phone use. About 70% complaints of headache and 20% of dizziness. Impaired concentration occurred in 56% of respondents, and 11% reported facial dermatitis. The most prevalent symptoms related to cell phone use was the thermal sensation within the auricle, and behind and around the ear. The study concluded that, a large number of young people complained of headache and impaired concentration.[10]

In a meta-analysis of the 16 case control studies 11 gave a result of ≥10years cell user latency period. An association with acoustic neuroma was found in four studies in the group with at least 10 years use of cell phone. The tumour size was significantly larger among the users. Six studies gave results for malignant brain tumours in that latency group. In a meta-analysis, ipsilateral cell phone use accounted for acoustic neuroma. The study concluded that, on use of cell phone for ≥ 10 years a consistent pattern of increased risk for acoustic neuroma and glaucoma was seen.[11]

A recent study indicated that, radiation from cell phones harms cells and further that males who carry cell phones near their groin region may have up to a 30% reduction in fertility rates. The result found that there was more DNA damage in the exposed sperm than in sperm in the control group.[12]

In a report about health hazards of cell phones in Indian perspective, it is said that the cell phone industry has been one of the fastest growing industries in modern history. Today, India has million cell phone users, and cell phones account for 88% of all telecommunication users. The rural sector accounts for more than 25% of all wireless phone users and this proportion is bound to grow as affordability of cell phones continues to increase. Studies have demonstrated that usage behaviours, such as duration of usage and predominant, one-sided use of cell phones are some of the chief risks that increase likelihood of hazards resulting from cell phone use.[13]

Even though the social advantages of cell phones to children and others are many and obvious, there are many different and often valid viewpoints or discourses expressed as to their disadvantages, harms and potential and actual abuses. Therefore, it is important to examine all issues related to cell phones and its effect on human beings.

There is a dearth of this study in India & the state of Rajasthan scenario. The researcher personally perceived from his experience, at the time of community posting, the parents complaints regarding the excessive use of cell phones by their children. Furthermore majority of the people are unaware or not concern about the ill effects of cell phone usage. Therefore the researcher foresaw the need for conducting this study.

With the help of this research study the adolescents will benefited with increase in level of knowledge regarding ill effects of cell phones& also aware about preventions of ill effects of cell phones.

STATEMENT OF THE PROBLEM:

"A study to assess the knowledge on ill effects of cell phones among adolescents in selected urban community of Jaipur with a view to develop an information booklet on prevention of ill effects of cell phones."

OBJECTIVES:

1. To assess the level of knowledge on ill effects of cell phones among adolescents.
2. To find out the association between knowledge of adolescents regarding ill effects of cell phones and selected demographical variables such as age, gender, education use and source of information regarding ill effects of cell phone.
3. To develop and distribute an information booklet regarding prevention of ill effects of cell phones among adolescents.

DOI:10.46376/GNJI/4.I.2021.307-312

ISSN Print: 2581-8546 ISSN Online: 2582-2934

HYPOTHESIS

H1- :- There will be a significant association between knowledge score of adolescents and the selected demographic variables regarding ill effects of cell phones.

ASSUMPTIONS

The study assumes that (1) the adolescents will have less knowledge on ill effects of cell phone use. (2) Information booklet will improve the knowledge of adolescents on prevention of ill effects of cell phones

DELIMITATION

The study is delimited to: (1). the adolescents of selected urban area in Jaipur. (2) The adolescents in the age group of 10-19 years. (3) Only those adolescents who use cell phones.

(4) The adolescents who will be available during data collection.

RESEARCH METHODOLOGY:-

Quantitative approach was used to achieve the objectives of the study. The research design used for the study was descriptive survey design. The main study was conducted in urban community of Jaipur. Sample size for the present study is 100 adolescents. In the present study convenient sampling technique was adopted for the selection of 100 adolescents from urban area were selected who fulfilled the sampling criteria-(1)Who are in the age group of 10-19 years? (2) Who lives in selected urban area of Jaipur? (3)Who uses cell phone? (4)Who are willing to participate in the study and will be available at the time of data collection and exclusion criteria-(1) Less than 10 years and above 19 years of age. (2) Adolescents who don't use cell phone. (3)Adolescents who are not willing to participate and not will be available at the time of data collection. The Tool consisted of 2 sections: section-I include the demographic profile. Section-II consists 25structured questionnaire on knowledge regarding the ill effects of cell phones. Validity of the tool was ensured in consultation with guide and experts in the related field. Karl Pearson's correlation coefficient and Spearman Brown Prophecy formula were used to find out the reliability of the tool. The data was collected and analysed by using descriptive and inferential statistics according to objectives and hypothesis of the study. Data was collected within 6 weeks.

ANALYSIS AND INTERPRETATION

Table 1: Description of demographic characteristics of adolescents

N=100

S. No.		Frequency	Percentage
1.	**Age**		
	a. 10-13 years	18	18.0
	b. 14-16 years	32	32.0
	c. 17-19 years	50	50.0
2.	**Gender**		
	a. Male	60	60.0
	b. Female	40	40.0
3.	**Education**		
	a. Primary& Middle School	14	14.0
	b. Secondary	30	30.0
	c. Secondary & above	56	56.0
4.	**Source of information regarding ill effects of cell phone**		
	a. Mass media	66	66.0
	b. Friends	6	6.0
	c. Health professionals	0	0
	d. No information	28	28.0

Table 2: Percentage and frequency distribution of level of knowledge of adolescents regarding ill effects of cell phones

N= 100

Level of knowledge	Number	Percentage (%)
Poor (0-40%)	46	46
Average (41- 60 %)	48	48
Good (61-80%)	6	6
Very good (81-100%)	0	0
Overall	**100**	**100**

DOI:10.46376/GNJI/4.I.2021.307-312

ISSN Print: 2581-8546 ISSN Online: 2582-2934

Table 3: Description of area wise mean, SD and mean % of knowledge score.

N= 100

Sl. No.	Aspects of knowledge	Max. possible score	Mean score	SD	Mean %
1.	Basic concepts of cell phones.	5	2.76	0.771	55.20
2.	Effects of cell phones.	12	4.26	2.601	35.50
3.	Precautions for cell phone usage.	8	3.16	1.822	39.50
	Total	25	10.18	4.402	40.72

DISCUSSION

In the present study the distribution of adolescent according to their age shows that majority 50% were in the age group of 17-19 years and least were 18% in the age group of 10-13yr.Gender wise distribution of the subjects shows that 60% were male and 40% were female. Distribution of adolescent according to their education shows that majority 56% were in secondary and above, least 14% were from primary and middle school. Distribution of adolescent according to source of information on ill effects of cell phones shows that majority 66% got information through mass media and none of the samples got any information from health professionals. The finding of this study is consistent with the survey conducted among 330 adolescents in Riyadh, to assess the adverse effects of excessive cell phone use shows similarity in the demographic distribution with some of the variables like age and gender. In the case of age the majority was 15 years and above, in gender the majority was males 73.77% and only 26.22 % were females. Assessment of adolescent level of knowledge shows that, about half of the adolescent (48%) had average knowledge, around 46% had poor knowledge, and only 6% had good knowledge regarding the ill effect of cell phone. The chi square values of demographic variables like age, gender, education, and source of information (2=3.84) were not significant at 0.05 level of significance. A similar study was conducted in Mumbai with the objectives to find the cell phone usage, purpose and the knowledge regarding the possible adverse effects on health as a part of market analysis. The study considered the demographic variables such as age, gender, income, duration of usage, education; type of living etc. The result had shown that there is significant association with the demographic variables education (2=6.24), and income (2=4.23). This finding is contradictory to the present study finding.

CONCLUSION

On the basis of findings conclusions were drawn-The Information Booklet was found to be an effective strategy for providing information on prevention of ill effects of cell phones for improving the knowledge of adolescents. It was well appreciated and accepted by the Adolescents. This research not only plays an important role in nursing practice but also in field of Nursing administration, Nursing education and Nursing Research. This study will find better outcome for community.

REFERENCES

I. Introduction to technology. [Online]. Available from: URL:www.am.org/real science/.

II. Cell technologies Learning - cell communication. [online]. Available from: URL:www.network tutorials.info/cell-technology

III. An introduction to cell technologies and services. [online]. Available from: URL:www.uberthi ngs.com/cell/intro

IV. Introduction to cell phones. [online]. Available from: URL:www.chow.com

V. http://www.hairydog.co.uk/cell 2.html.

VI. Emerging aspects of cell phone use. [online]. Available from: URL:http://www.eht-forum.org/ ehtj/journal/v2/p df/ehtj090 05a.pdf.

VII. http://www.indianfreedomfighters.in/india-facts/cell-phones-in-india.htm

VIII. http://en.wikipedia.org/wiki/Communications _in_India.

IX. Lenhart A, Ling R, Campbell S, Purcell K. Teens and Cell Phones. [online]. Available from: URL:http://pewinternet org/Reports/2010/Teens-and-Cell-Phones.aspx. April, 2010.

X. Szykowska A, Borthkiewicz A,Szymczak W, Makowiec - Dabrowska T. Subjective Symptoms Related to Cell Phone Use. [online]. Available from: URL:http://www.ncbi.nc hi.nlm.nih.gov/ entrez/query.

XI. Hardel L, Carlberg M, Soderquist F, Mild KH, Morgan LL. Long Tem Use of Cellular Phones and Braintourmers: Increased Risk Associated With Use For ?10 years. [online]. Available

DOI:10.46376/GNJI/4.I.2021.307-312

from: URL:http://www.nchi.nchi.gov/sites/ entrez?

XII. Cell Phones Shown to Impact Male Fertility. [online]. Available from: URL: http://novaspivack .typepad.com/nova-spivacks.weblog/2004/ 06/cell_phones.html. June 27, 2004.

XIII. Kapdi M, Hoskote SS, Joshi SR. Health hazards of cell phones: an Indian perspective. J Assoc Physicians India 2008 Nov;56:893-7.

XIV. Singh KS. Methodology of research in education. Patna: Sterling Publications; Pvt. Ltd.; 1990.

XV. Polit DF, Hungler BP. Essentials of nursing research methods. Appraisal and utilization. 5th ed. Philadelphia: J. B. Lippincott Company; 2001.

XVI. Potter PA, Perry GA. Fundamentals of nursing. 6th ed. New Delhi: Reed Elsevier India Pvt. Ltd.; 2005.

XVII. http//www.etr.org/recap/theories/hbm /resources. htm.

XVIII. Hafetz JS, Jacobsohn LS, García-España JF, Curry AE, Winston FK. Adolescent drivers' perceptions of the advantages and disadvantages of abstention from in-vehicle cell phone use. [online]. Available from: URL:http://www.pubmed.com.

XIX. Halayem S, Nouira O, Bourgou S, Bouden A, Othman S, Halayem M. The cell: a new addiction upon adolescents. French J Tunis Med 2010 Aug;88(8):593-6.

XX. Schlehofer MM, Thompson SC, Ting S, Ostermann S, Nierman A, Skenderian J. Psychological predictors of college students' cell phone use while driving. Accid Annal Prev 2010 Jul;42(4):1107-12.

XXI. Inyang I, Benke G, Dimitriadis C, Simpson P, McKenzie R, Abramson M. Predictors of cell telephone use and exposure analysis in Australian adolescents. J Paediatr Child Health 2010 May;46(5):226-33.

XXII. Koo HY. Development of a cell phone addiction scale for Korean adolescents. J Korean Acad Nurs 2009 Dec;39(6):818-28.

XXIII. Abramson MJ, Benke GP, Dimitriadis C. Cell telephone use is associated with changes in cognitive function in young adolescents. J Australia Bioelectromagnetics 2009 Dec; 30(8):678-86.

XXIV. Khan MM. Adverse effects of excessive cell phone use. Int J Occup Med Environ Health 2008;21(4):28993.

XXV. Sánchez-Martínez M, Otero A. Factors associated with cell phone use in adolescents in the community of Madrid. J Spain Cyberpsychol Behav 2009 Apr;12(2):131-7.

XXVI. Hardell. Health Effects of Cell Phones: Recent Scientific and Policy Developments. [online]. Available from: URL:http://www.seas. upenn.edv/~kfoster/ cost 259/ htm.

XXVII. Söderqvist F, Carlberg M, Hardell L. Use of wireless telephones and self-reported health symptoms: a population-based study among Swedish adolescents aged 15-19 years. J Sweden Environ Health 2008 May 21;7:18.

XXVIII. Küçer N. Some ocular symptoms experienced by users of cell phones. Electromagn Biol Med. 2008;27(2):205-9.

XXIX. Market analysis and consumer research organization(MACRO).Survey on cell phone usage among the teenagers and youth in Mumbai. Sunday Economics 2009 Aug;16(2):234-7.

XXX. Volkow ND, Tomasi D, Wang GJ, Vaska P, Fowler JS. Effects of cell phone radiofrequency signal exposure on brain glucose metabolism. JAMA 2011 Feb 23;305(8):808-13.

DOI:10.46376/GNJI/4.I.2021.307-312