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Original Research Article

Assess the Effects of Electronic Gadgets (Television, Mobile Phone and Computer) on Health Status among Secondary School Students in the Selected Districts of Maharashtra

Mr. Sunil Malhar Kulkarni[1], Dr. (Mrs) Nilima Rajan Bhore[2]

[1](A.P.) & Research Scholar, BVDU, CON, Sangli. Maharashtra. India.
[2]Dean, Faculty of Nursing & Principal, BVDU, CON, Sangli. Maharashtra. India.

Corresponding Author: Mr. Sunil Malhar Kulkarni

ABSTRACT

Introduction: As the use of television, mobile phone and computer is much more by adolescent is concerned. They are prone as well as suffering with harmful effects of electronic gadgets. This study was done to assess the effects of electronic gadgets (television, mobile phone and computer) on health status among secondary school students in the selected districts of Maharashtra.

Research Methodology: A quantitative research approach with cross sectional survey designed was used. By using non-probability, convenient sampling 36 secondary school students were selected as sample. The predesigned, validated, pretested and reliable 9 health assessment tools ((hearing, body weight, digestion, sleep, emotional status, finger tip ulcer, vision, bowel movement and comfort) were used to collect the data.

Results: The results showed that only 1 sample had place of residence was hostel, 3 mothers and 5 fathers belongs to no formal education group .23 students had no information regarding health hazards caused by electronic gadgets. There were higher numbers students showed in change of health status after use of electronic gadgets. There was association between few demographic variable and current health status. Also there was association between use of electronic gadgets and current heath status.

Conclusion: Author concluded those adolescents are more vulnerable to effect of electronic gadgets on many aspects of health status. They need health education, guidance and counselling regarding healthy use of electronic gadgets. This should be included in curriculum.

Key words: Television, Mobile phone, Computer, Health status, Secondary school students

INTRODUCTION

There are many similar terms for electronic gadgets like electronic devices, social media, technological gadgets and ICT devices. The electronic gadgets include television, mobile phone, computer, video game player and other. They are highly attractive in young children and adolescents. [1]

The use of television for recreational, educational, spiritual programs, mobile phone for making calls, messages,

social networking like email, faceboo , and computer for play games, recreational and educational purpose. That's why young age group is strongly bonded with them. These devices are becoming smarter in structure and functions. [2]

The average screening time of television in 49 % children was more than 2 hours per day and more than 4 hours during weekend days or on holidays, [3] an average spending time with mobile phone was an hour and a half a day [4] and the minimum us of computer was 2-4 hours per day. [5] A study on use of electronic media by secondary school students showed that minimum use of television was 3 hours, mobile phone 3 hours and 3 hours computer. [6] The studies showed that any one or all together electronic gadgets screening more than 2 hours leads to many health problems.

The dark sides of the electronic gadgets have many problems. The dangers of television are loneliness, depression, obesity, fantasy lifestyle, suicide, acceptance of sinful principle and poor academic performance. [7] Mobile are outsourcing health risks including cancer, memory loss, poor concentration, digestive disorders, digital ulcer, nomophobia and sleep disturbances. [8] Computer users at risk for carpal tunnel syndrome, computer vision syndrome and musculoskeletal disorders or joint pain wrist, shoulder, neck and back pain. [9]

A study was to assess the effects of electronic devices on the health of adolescence and to provide guideline to safeguard them from harmful effect on their health for parents and practitioners. Across section study was utilized to collect data from a sample of 59 boys and 67 girls of adolescence students. Age of adolescents was between 16-18 years. Two tools were used. The 1st adapted Play and Technology Questionnaire for alder children and the 2nd is an interview questionnaire related to harmful effect of commonly used electronic devices on their health. The result was it classified into mild, moderate or severe effects. The results showed that the adolescents were exposed to moderate to severe hazards as backache, carpal tunnel syndrome, itchy eyes, and sleeping problems which lead to lack of concentration which led to poor in their school performance. So nurses should give instructions to the parent and teachers. Continuing medical and nursing educational programs to be planned safe and healthy use of electronic gadgets. [10]

The actions to reduce above problems are practiced very minimal. That's why the roles of parents, health professionals, media professionals, teachers, government and entertainment industrials are vital in right, safe and healthy way to use. [11]

The present study covers the effect of electronic gadgets (Television, mobile phone and computer) with questioning, by assessment and tests and interview for additional information regarding health problems. Previous studies were on one gadget, with few a problems and only with self reporting responses.

The researcher has observed that many youngs and adolescents use television, mobile phone and computer for long time, without maintaining proper body posture, no use of safety measures and not knowing many risks or health problems.

RESEARCH METHODOLOGY

Problems statement: 'A study to assess the effects of electronic gadgets (Television, Mobile phone and Computer) on health status among secondary school students in the selected districts of Maharashtra'.

Objectives of the study: 1. to assess the use of electronic gadgets (television, mobile phone and computer) among secondary school students. 2. To assess the effects of electronic gadgets (television, mobile phone and computer) on health status of secondary school students. 3. To compare the self-reported health status before and during use of electronic gadgets (television, mobile phone and computer) among secondary school students. 4.To find out association

between socio-demographic variables with effects of electronic gadgets on health status of secondary school students 5. To find out association between use of electronic gadgets (television, mobile phone and computer) with effects of electronic gadgets on health status of secondary school students

Hypothesis: 1. H 0: There is no association between socio-demographic variables and effects of electronic gadgets (television, mobile phone and computer) on health status of secondary school students at 0.05 LOS. 2. H 02: There is no association between use of electronic gadgets (television, mobile phone and computer) and effects of electronic gadgets on health status of secondary school students at 0.05 LOS.

Research variable: Health status of secondary school students. (Health status - Hearing, body weight, digestion, sleep, fingertip skin, emotional status, vision, bowel movements and comfort)

The research approach was quantitative and research design was cross - sectional survey research design. The setting of study was Secondary schools in selected districts of Maharashtra state. Secondary school students from 8^{th}, 9^{th} and 10^{th} were selected by non-probability -convenient sampling technique with sampling size 36 .Students who were using television, mobile and computer (all three) more than one year were included and students from night schools /open schools/distance school were excluded. Tool has four sections. Section –I was socio-demographic data, Section –II was use of electronic gadgets, Section –III was self-reported health status before starting the use of electronic gadgets and Section – IV was Health assessment tools (Modified tools) to collect current health status. Tool consisted of a. self-reported information, b. results of physical assessment done by the investigator and c. Open ended question on additional information regarding health problem and treatment. Modified tools are used by researcher. Total 9 health assessment tools were used assess Hearing, Body weight, Digestion, Sleep, Fingertip /Digital ulcer, Emotional status, Vision, Bowel movement and Comfort, (Pain assessment).

The validity of tool was done from the experts in nursing, Physicians, IT experts, lawyers, Statisticians, langue experts (Marathi and English), psychologists, sociologists and school principals and teachers. Total 36 experts validated the tool. Reliability of tool was done from November 2017 to March 2018. Data collected from 6 schools form six regions of Maharashtra with total 36 students. The split half technique was used with the Brwon's prophecy and Spearson's coefficient of co-relation tests were used to find out reliability of tool. The 'r' values of each tool of health assessment were more than 0.70 and less than 0.94 Above all the values are more than 0.7, so tools were reliable. b. Part of each tool was for physical assessment. Used standard method of assessment (All the articles were calibrated) c. Part of each tool is open ended question regarding additional information on each component of health assessment. Pilot study was conducted during November 2017 to March 2018. Validated tools were used to collect the data.

Plan of data collection included ethical approved; valid and reliable tools were used. Permission was taken from concern authorities i.e. Head Master/ Principal, Class teacher, parent and students (asscent). Analysis was with descriptive statistics like frequency, percentage mean and standard deviation and inferential Chi-square test was done to find out associations. (Used SPSS 22 version)

ANALYSIS

Based on objectives and hypotheses the analysis was done in five sections Sec. I - Socio-demographic variables, Sec. II – Use of electronic gadgets, Sec. III- Self reported health status before starting the use of electronic gadgets, Sec. IV- Self reported

and current physical health assessment of students and Sec. V –Association between socio-demographic variable and health status of students.

Table No 1. Distribution of students according to frequency and percentage. N= 36

S.N		Socio-demographic data	Frequency	Percentage
1		Standard in which the student is studying		
	a	8^{th}	12	33.3
	b	9^{th}	12	33.3
	c	10^{th}	12	33.3
2		Gender		
	a	Male	18	50.0
	b	Female	18	50.0
3		Habitat		
	a	Urban	20	55.6
	b	Rural	16	45.4
4		Place of residence		
	a	Home	30	83.3
	b	Hostel	1	2.8
	c	Rented room	5	13.9
5		Monthly family income in Rs.		
	a	Up to Rs.10000	6	16.7
	b	Rs.10001 to Rs. 25000	11	30.6
	c	Rs.25001 to Rs.50000	7	19.4
	d	Rs.50001 to Rs. 100000	9	25.0
	e	Above Rs.100001	3	8.3
6		Mother's education		
	a	No formal education	3	8.3
	b	Primary education	9	25.0
	c	Secondary and higher secondary education	13	36.1
	d	Collegiate / graduate	9	25.0
	e	Post-graduation and doctorate	2	5.6
7		Father's education		
	a	No formal education	5	13.9
	b	Primary education	8	22.2
	c	Secondary education	13	36.1
	d	Collegiate / graduate	8	22.2
	e	Post-graduation to doctorate	2	5.6
8		Mother's occupation		
	a	House wife	27	75.0
	b	Service Specify ……..)	9	25.0
9		Father's occupation		
	a	Farmer	17	47.2
	b	Service Specify …….)	8	22.2
	c	Business	11	30.6
10		Type of family		
	a	Nuclear	19	52.8
	b	Joint	17	47.2
11		Do you have information regarding health hazards caused by electronic gadgets?		
	a	Yes Specify the source of information……	13	36.1
	b	No	23	63.9

Table No. 2 : Comparison of self reported health status of student before starting and during use of electronic gadgets. N=36

Sr.No.	Electronic gadget	Self reported health status before stating use of electronic gadgets		Self reported health status during use of electronic gadgets (F)	Normal	Mild	Moderate	Sever
			(F)	F	F	F	F	F
1	Television	Hearing	4	21	0	7	13	1
2		Body weight	3	16	0	10	6	0
3		Digestion	2	17	0	12	5	0
4	Mobile phone	Sleep	9	18	0	7	21	3
5		Finger tip skin	8	25	0	17	7	1
6		Emotional status	6	13	0	14	15	4
7	Computer	Vision	8	20	0	18	2	0
8		Bowel movement	3	20	0	20	6	0
9		Comfort	7	21	0	12	8	1

Table no. 3 : Association between socio-demographic variable with health status. n= 36

SrNo	Socio-demo graphic variable	Health status of students	λ^2Value	df	LOS	Result
1	Place of residence	Sleep	22.133	6	0.001	Significant
2	Place of residence	Comfort	13.076	6	0.042	Significant
3	Monthly income of family	Bowel movement	18.994	8	0.015	Significant
4	Fathers' education	Bowel movement	25.477	8	0.001	Significant
5	Mothers' occupation	Hearing	8.587	3	0.034	Significant
6	Mothers' occupation	Finger tips	10.543	3	0.014	Significant
7	Fathers' occupation	Vision	11.827	4	0.019	Significant
8	Type of family	Bowel movement	40*.776	4	0.00	Significant

(Foot note : Only association between above socio-demographic variable with current health problems were mentioned here)

Table No. 4 : Association between health status and use of electronic gadgets (Use in years and use in hours /day). N=36

Sr. No.	Health status	Gadget Use	Df	Calculated Values	Table values at 0.05	Result
Television						
1	Hearing	Use in years	6	18.37	0.032	Significant
2	Body weight	Use in hours /day	6	15.68	0.043	Significant
Mobile phone						
3	Sleep	Use in hours/ day	9	13.83	0.011	Significant
4	Emotion status		9	18.40	0.03	Significant
		Computer				
5	Vision	Use in	6	19.36	0.02	Significant
6	Vision	Use in	6	13.80	0.01	Significant

* Foot note: Df values & interpretation of result λ^2 calculated Value (df ..0.05 table df 1 = 3.84, 2= 5.99, 3 =7.82, 9.4 = 9,5= 11.07, 6=12.59, 7 =14.07, 8 = 15.51, 9 =16.92, 10 = 18.31 , 11= 19.68 and 12= 21.03) . (If cal. Value › than table value then test positive or 'p' value less than 0.05)

DISCUSSION

Table no 1. Above table showed that only 1 sample belongs to the place of residence was hostel. 3 mothers' and 5 fathers' belong to no formal education group. 23 students had no information regarding health hazards caused by electronic gadgets. (13 said yes. Source for information – 5 from parent, 5 from internet & 3 from teachers)

A study was conducted on effect of technology among secondary school adolescents. The study included demographic variable like gender, parental working status (one or both) family type , phone type, age , average time spent /day and duration of mobile phone use in years. [12]

The harmful effects of commonly used electronic devices on adolescence and its Safeguard at Shebin El-Kom. They have taken most of similar socio-demographic variables to our study e.g. age, gender, mothers' and fathers' education and occupation, [10]

Table no 2 values showed that there were higher numbers in change of health status/ health problems like hearing , obesity, sleep disturbances, anxiety, vision impairment and body pain) during use than before use of electronic gadgets

This study supported by a study on 'addiction of gadgets and its impact on health of youth: A study of under-graduates college students in Indore district. - Study result stated that 72% of physical health problem in hearing by gadgets hearing through ear phone, 79% respondents had headache and 60% respondents had sleep problem, 45 % respondent had impact on thinking and memory, 85 % respondent had problem of depression, 69 % respondent had impact on mental stability, and 68 respondent had impact on level of consciousness Who had used the gadgets more than 6 hours/day. [13]

Table no3 values depicts that there was association between socio-demographic variable with current health problems.

The other study results showed that the overall lack of associations between these demographic variables and the time engaged in the various activities using electronic devices was remark .Fathers and mothers' levels of education were unrelated to any of the variables. [6]

A table no 4 values showed that there was association between hearing and TV use in years as well as association

between body weight and use of TV in hours/day. Also there was association between sleep as well as emotional status and use of mobile in hours /day. Further there was association between vision and use computer in years as well as use of computer in hours /day.

The other study showed that the close relationship between high levels of media use and poor school performance. There was no a causal relationship between the amount and content of the use of electronic media by Thai adolescents and their other outcomes of interest such as tobacco and alcohol use, anxiety and depressive symptoms, aggressive behaviour, and self-harm. [6]

IMPLICATIONS OF STUDY:

Nursing education: The nurse education must use these finding in varies forms of teaching learning activities with student, staffs, family members and mass media. Nurse may utilize the results in planning of curriculum at institutional level. She can find relation the academic and health problems of students with use of electronic gadgets.

Nursing administration : Nurse administrator provide man, money, material, methods , measures and minutes for utilization of this study results while dealing with nursing students and staffs. She must keep link among nurse educators, nurse practitioners, nurse researchers and librarians to utilize these finding in nursing. Organize continuing nursing education on this topic.

Nursing practice: Nurse must assess the student health status considering effects of electronic gadgets at home, school and in hospital settings. She will provide direct care, guidance and counselling to the students, parents and teachers on healthy use and prevention of its hazards. She will plan holistic care to special care needy students.

Nursing research: Nurse Research will disseminate these findings in nursing conference, workshop, meeting and publication. She will motivate to staff and student to conduct regarding causes of abuse, harmful effects and healthy use of electronic gadgets.

CONCLUSION

Electronic gadgets (television, mobile phone and computer) have become vital part in all disciplines, professions and day to day life. Healthy use and safety measures will beneficial to all otherwise these blessings will become a big curse to human beings. The most vulnerable group is children, adolescents and professionals electronic gadgets users.

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