

Effectiveness of PTP on the Dark Side of Electronic Gadgets in Physical and Mental Health of Adolescents at Al-Namas.

SHEELIYA WHITE, *M.Sc Nursing, MBA.*

Department of Nursing Applied Medical Science College for Females, Al-Namas, University of Bisha.

Abstract

Introduction: Today's high-tech world, it is unimaginable to keep children left from the electronic gadgets. Therefore, it becomes essential to allow children to use the gadgets wisely. Therefore, the study focus on the consequences of digital technology in physical and mental health of adolescence at a complex phase of development. **Objectives:** To evaluate the effectiveness of the teaching programme and to improve the awareness among the under graduate students on dark side of using electronic gadgets and techniques to overcome the problems in Al-namas, Saudi Arabia. **Methods:** Quantitative descriptive approach with one group pretest - posttest quasi-experimental research design. A Non-probability convenience sample of 60 adolescent under graduate students. A pre-tested semi structured questionnaire has used to collect the data before and after intervention. **Results:** The results of this study have shown that the difference between the overall knowledge score before and after the test is 51.14% in adolescents. The overall calculated 't' value was 28.41 and it is also significant at the level of $P < 0.001$. The average difference was high and statistically significant, meaning that the planned teaching was highly effective. **Conclusion:** Researcher tend to see the use of digital technology as a challenge, focusing on the impacts on the physical and mental health of young people in a delicate phase of their development. Henceforth, they utilize the gadgets wisely considering physical and mental wellness. It is essential to educate all ages about the need to raise the best citizens.

Keywords: Effectiveness, Planned Teaching Programme, knowledge, hazards, electronic gadgets, adolescence.

Introduction

'Poison is in everything, and no thing is without poison. The dosage makes it either a poison or a remedy.' By: Paracelsus

The use of technology has grown fast during the last couple of decades. During the use of mobile phone and internet which emits radiation. The lesser your spending time with electronic devices, the more physically active you will become. Since you are a Tech-Smart adolescence need to have smart habits, you should take into consideration to reduce the time

spending on electronic devices. Not to watch TV while eating, If you feel to relax yourself, Increase outdoor physical activity time, preferably plan a trip to a place of your own interest, or choose an activity that loves to do, rather than taking additional screen time.

The common health hazards are the Carpal Tunnel Syndrome, Neck and Shoulder Strain, Headaches, Eye Strain, Poor Sleep Patterns, Physical Fatigue, Stress, Obesity, Compromised Immunity and the brain is the main target organ for radiation emissions from the handheld wireless phone. A study by the London School of Hygiene & Tropical Medicine found that 92 per cent of mobile phones contain bacteria, 16 per cent of which are dangerous strains of Ecoli and at the same time in our climate, such bacteria can survive for hours.

In May 2011, the World Health Organization's International Agency for Research on Cancer assessed the scientific evidence on brain tumour risk. The Panel concluded that radiation from devices emitting non-ionizing radiation in the 30 kHz to 300 GHz frequency range is a "possible" carcinogen to humans. In terms of the health impacts of digital (wireless) technologies, it is important that neurological conditions, physiological dependence, cognition, sleep, and behavioural problems be taken into account in addition to cancer. Well-being must be carefully evaluated as a behavioural change effect in children and adolescents as they interact with modern digital technologies.

A study on the physical impact of computers and the use of electronic games in children and youth shows that children using computers and electronic games can adopt the sustained and rough postures associated with the disorder musculoskeletal conditions for working adults. If so, the physical demands of intensive use may cause a wide range of adverse effects on developing children, including visual, neurological and physical changes. Laboratory studies of vision, case reports of game-related tendonitis, and ergonomic analyses of class computers suggest that the concern is justified.

The study was conducted to assess the effectiveness of video education on the health hazards of electronic devices in adolescents in the Kanyakumari district. The Researcher adopted a one group pretest - posttest design with 60 adolescence. The study found that the video education program was effective after carrying out a knowledge test on the health risks of electronics in adolescents. The paired 't' value was 9.304, $df = 59$, $P < 0.05$. The study found that video education is effective in promoting awareness of health risks from electronic devices among adolescent girls.

The study aimed to determine the average time that schoolchildren spend on computers and electronic games, the positions they occupy and any discomfort associated with their use. A questionnaire was circulated to 476 children in grades 1 to 8 in New York City. The findings suggest that children use computers and electronic games differently from adults and that more boys than girls play electronic games. The findings made it clear that children are uncomfortable

using computers or electronic games, and that discomfort is largely concentrated in the neck area.

The study conducted to assess the effectiveness of an “ergonomics for computer use” teaching program within Majan College personnel. The teaching programme consisted of a PowerPoint presentation with multimedia press clippings, a demonstration of exercises concerning the ergonomics of the use of the computer. The study revealed increased average post-test scores. The paired test “t” demonstrated a significant difference in pre- and post-test results ($t_{29} = 11.466$) at the significance level of 5%.

A cross-sectional study on the assessment of ownership, time spent and use of electronic device content and its association with health symptoms, sleep patterns, dependence and sociability. The results showed that 95.9% of the student population owned mobile phones. Phones use of 1 - < 3 and >3 hours/ day was reported 31.6% of students. Uses of audio, interactive and visual content were reported by 90%, 67.8% and 56.6% of students. Mild headaches and poor sleep were reported by 39.2% and 52% of students, and addiction and sociability were reported by 77.2% and 86% of students. Correlation between visual use and headache ($p=0.02$), interactive use and symptoms of the ear ($p=0.03$), and dependence and use of sound ($p=0.039$), along with a significant correlation between mobile phone usage and sociability ($p= 0.01$).

The study conducted on teenagers, screens and social media: a narrative review. While research has highlighted the position to differentiate between different types of digital technology use many studies do not consider such necessary shades. It must also demonstrate a greater appreciation for the individual differences that will intrinsically shape each adolescent's reaction to digital technologies.

Materials and Methods

The research approach adopted for this study is an evaluation approach, with the study design being a quasi-experimental design. This study was non randomized with one group pre-test and post-test, quasi-experimental study.

O1 → X → O2

The sampling technique used for this study was non-probability convenient sampling and the sample size were 60 adolescence under graduate students. A pre-tested semi-structured questionnaire was used, together with the information included in the questionnaire were socio-demographic and knowledge-based questions about electronic gadgets in physical and mental health. The planned teaching programme was given shortly after the pre-test and the post-test was carried out on the seventh day for the students. The data gathered were conveniently summarized and compiled using descriptive and inferential statistics.

Results and Discussion

Table 1. Percentage Distribution of Samples According to Demographic Variables

N=60

Sl.No	Demographic Variables	Frequency	Percentage (%)
1	Age		
	17-18 years	17	28.33 %
	18-19 years	14	23.33 %
	19-20 years	29	48.33 %
2	Residency		
	Urban	33	55 %
	Rural	27	45
3	Number of siblings		
	1	7	11.7 %
	2-3	27	45 %
	More than 3	26	43.33 %
4	Parents occupation		
	Employed	44	73.33 %
	Unemployed	16	26.7 %
5	Number of electronic devices you are using		
	1	9	15 %
	2-3	18	30 %
	More than 3	33	55 %
6	Approximate usage of electronic devices		
	Less than 2 Hours/day	4	6.7 %
	2 – 4 Hours/day	18	30 %
	More than 4 Hours/day	38	63.33 %

7	Sources of information		
	Television	9	15 %
	Social Medias	38	63.33 %
	Family and Friends	13	21.7 %

The table above shows that the majority of the 29 (48.33%) were between the ages of 18 and 19 and most of the 33 (55%) were urban residents. 27 (45%) have 2-3 siblings and most students 44 (73.33%) parents are in employment. The majority of students 33 (55%) used over 3 electronic devices and most students 38 (63.33%) used electronic devices for over 4 hours per day, and social media was a key source of 38 (63.33%) of information.

Table 2. Assess the Frequency and Percentage Distribution of Pretest and Posttest Knowledge of Adolescence on Physical and Mental Health on Electronic Gadgets.

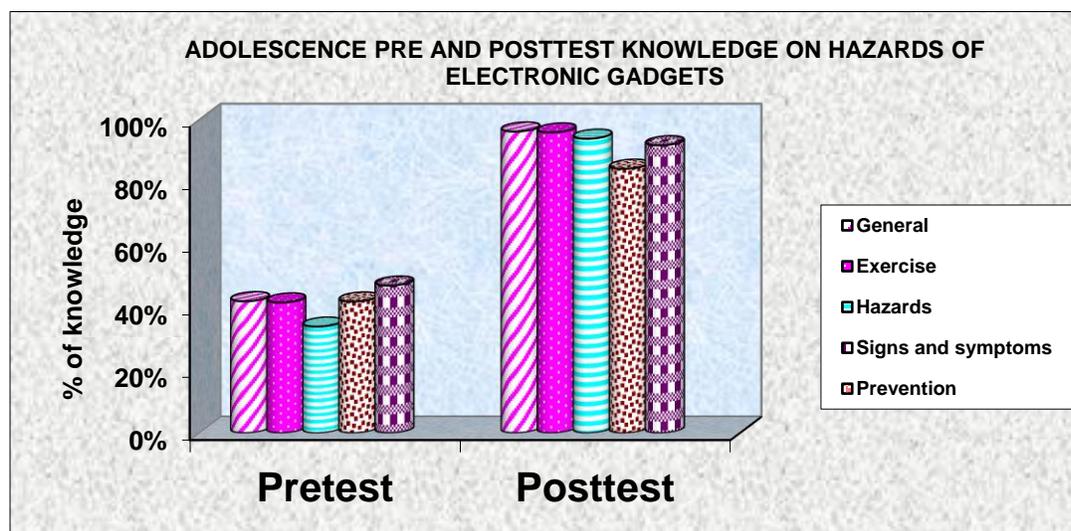
Aspects	Pretest				Posttest			
	Mean score	% of knowledge score	Overall Mean score	Overall Knowledge %	Mean score	% of knowledge score	Overall Mean score	Overall Knowledge %
General information	1.45	42.1%	10.03	41.38 %	2.85	96.3%	23.26	92.52 %
Hazards of over usage	2.15	41.7%			4.88	96.0%		
Exercises / relaxation	1.68	34.0%			5.88	94.0%		
Early Signs and Symptoms	2.05	42.0%			4.22	84.4%		
Prevention	2.70	47.1%			5.43	91.9%		

The table above shows that the overall pretest knowledge score was

41.38% and the overall post-test knowledge score is 92.52% among adolescents with regard to the health risks of electronic devices.

Figure 1. Percentage Distribution of Pretest and Posttest Knowledge of Adolescents on Physical and Mental Health on Electronic Gadgets.

N = 60



The figure above shows that the pretest and posttest knowledge score in different aspects of knowledge on the health risks of electronic devices among the adolescents.

Table 3: Comparison of the Knowledge Score between the Pre and Posttest on Digital Gadgets in the Physical and Mental Health.

Knowledge	Pre test			Post test			Difference in % of Knowledge	t- value p - value
	%	Mean	S.D	%	Mean	SD		
Overall Knowledge	41.38 %	22.39	6.25	92.52 %	51.98	9.09	51.14%	t = 28.41, p<0.001 (Significant)

Table 3 shows the overall post-test knowledge score is 92.52% when compared to the pre-test score, an increase of 51.14% and the overall calculated value of 't' was 28.41 and is also significant at the level of P < 0.001. The mean difference was high and statistically significant, which indicates that the planned teaching on knowledge about the dark side of

electronic gadgets and the solutions to overcome among the adolescents was highly effective.

The finding of the study was discussed based on the objectives and with the outcome of the other studies in this section and the current study was done to assess the effectiveness of the planned teaching program on knowledge regarding dark side of electronic gadgets and the solutions to overcome among the adolescence. The results revealed that the comparison of knowledge scores between the pretest and posttest improvement of the mean is 51.98 with a standard deviation of 9.09 which is greater than the table value. The findings revealed that planned teaching program on dark side of electronic gadgets and the solutions to overcome is extremely effective to increase the awareness among the adolescence.

Conclusion

Current technological world, it is terrible to be away from the electronic gadgets. Hence, it becomes indispensable to allow young people to use the gadgets wisely, get the life skills in adolescence that the gadgets can't and raise our young generation to be able to assume care of their life, solve problems and be valuable to the universe at large. Based on the research data, few remedies were suggested to overcome this physical and mental health among adolescents. Apply rule 20-20-20, after every 20-minute screen time, watch something at 20 feet for 20 seconds. Blink more to deal with the dryness and make sure there is enough light and that a computer screen must be kept 40-76 cm away from the eyes and mobile phones about 30 cm away. Invest in an ergonomic chair and maintain proper posture and take a five-minute vision breaks after every 30-40 minutes of device time. When not typing or using the hands, do rest the arms, do some stretches and get up to keep blood circulating. The overall increase in knowledge score between pre-test and post-test is 51.14% among adolescents on the dark side of electronic gadgets and solutions to overcome it, indicating that the planned teaching is extremely effective.

Acknowledgement

The author wishes to thank everyone who supported the successful completion of this study.

References

1. Ramos, Erlynn Mae Ang, et al. *International Journal of Nursing Education*. Year : 2017, Volume : 9, Issue : 1
2. Hardell L. *Effects of mobile phones on children's and adolescents' health: A commentary*. *Child development*. 2018 Jan;89(1):137-40.
3. Ministry of health, Saudi Arabia. Awareness plate form on Electronic device and health issues among children.

<https://www.moh.gov.sa/en/awarenessplatform/ChildsHealth/Pages/ElectronicDevices.aspx>

4. Gillespie RM. *The physical impact of computers and electronic game use on children and adolescents, a review of current literature. Work.* 2002 Jan 1;18(3):249-59.
5. Indhuja J. *A study to assess the effectiveness of video teaching on knowledge regarding health hazards of electronic devices among adolescence in christhucoil lms higher secondary school, Palliyadi at Kanyakumari District (Doctoral dissertation, Thasiah College of Nursing, Marthandam).*
6. Sheeba V. *Effectiveness of Video Teaching on Knowledge Regarding Health Hazards of Electronic Devices. International Journal of Nursing Education.* 2017;9(1):130-2.
7. El Kiweri IA, Al Ghamdi NA. *Electronic Devices: Content Use and Health Effects in Saudi Female Nursing Students. International Journal of Nursing and Health Science.* 2015 May 9;2(3):21-7.
8. Rosyati T, Purwanto MR, Gumelar G, Yulianti RT, Mukharrom T. *Effects of Games and How Parents Overcome Addiction to Children. Journal of Critical Reviews.* 2020;7(1):65-
9. Nikken P. *Implications of low or high media use among parents for young children's media use. Cyberpsychology: Journal of Psychosocial Research on Cyberspace.* 2017 Nov 23;11(3).
10. Ferrari M, Schick A. *Teenagers, screens and social media: a commentary on Orben's narrative review. Social psychiatry and psychiatric epidemiology.* 2020 May 6.
11. Orben A. *Teenagers, screens and social media: a narrative review of reviews and key studies. Social psychiatry and psychiatric epidemiology.* 2020 Jan 10:1-8.
12. Devesh S, Al-Bimani N. *Healthy tips associated to computer use. Int J Ergon (IJEG).* 2012;2:12-23.