

Smartphone Uses and its Effects on Health of Adolescents

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ABSTRACT

Smartphone usage has been increased dramatically which helps in easy communication but in another side it also affect the health of users if not used in healthy way.

Aims: The aim of the study was to assess the uses of smartphone by adolescents and its effects on their health.

Setting and design: Study was conducted in a private school of Doiwala, Dehradun and the design was descriptive survey design.

Methodology: 154 adolescents (11th and 12th class) were selected through purposive sampling technique. Data was collected by administering questionnaire to the participants. Tool consist baseline data, rating scale for uses of smartphone and self reported checklist to assess health effects.

Statistical analysis: The data was analyzed by using descriptive and inferential statistics such as frequency, percentage distribution and chi-square.

Results: The result shows that 11% adolescents were excessive users of smartphone. 81.3% adolescents uses their smartphone for approx one to four hours daily. More than half adolescents were using internet, among them around 24.5% adolescents had their account on social media. Regarding effect on health, most common complaint was headache (61%) followed by eye discomforts (44%), neck pain (43%), and wrist pain (41.6%).

Conclusion: Study concludes that use of smartphone affects health of adolescents and also has an impact on their study and physical activities so adolescents should be encouraged for healthy use of smartphone to gain maximum benefits of gadget.

KEYWORDS: Smartphone, adolescents, health, effect

INTRODUCTION

Today's globalized world is the technological world, which directly affect our lifestyle. Advancement in technology field has improved our standard of living. One of them advancement is smartphone. First mobile was invented by Martin Cooper which created a huge impact on individual.¹

Today mobile phones are equipped with many advance features and application, which facilitate in uploading images, videos and also helps in communication in many ways.² Due to its attractive features smartphone are very popular among adolescents. It has been shown that use of smartphone by adolescent has positive impact on their studies as they can easily search teaching content online and clear their doubts. But on another side it has negative impact also if not used properly specially on health. These ill effects may consists headache, pain in eye, neck, wrist, lightheadedness, fatigue, low concentration and may be responsible for corneal damage and disturbed vision.^{3,4,5}

Long term continuous use of smartphone may cause addiction to gadget. WHO defines addiction as "Prolonged

utilization of an object for the purpose of excitement or enjoyment which sometime a source of cravings when it is not available".⁶ Adolescents always occupied about their online activities even when they are not using it, which directly affects their daily activities and studies.^{7,8} Hence adolescents should be encouraged for healthy use of smartphone so that they can have maximum benefit by this technology in the field of education and it also help in preventing ill effects of smartphone uses.

MATERIAL AND METHODS

For the present study descriptive survey design was adopted. After administrative and ethical approval 154 adolescents from class 11th and 12th were selected by purposive sampling technique from a private intermediate school of Doiwala, Dehradun. Purpose of the study was explained to the participants and written consent was obtained from them and their parents. Data was collected by administering tools to the participants. Tools consists baseline data, rating scale for assessing smartphone uses includes 30 items (3 points rating) that measures mild,

How to cite this paper: Mr. Moirangthem Binanda Singh | Dr. Vandana Chauhan | Mr. Atul Kumar "Smartphone Uses and its Effects on Health of Adolescents"

Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-4 | Issue-3, April 2020, pp.96-98,

URL: www.ijtsrd.com/papers/ijtsrd30296.pdf



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moderate and severe level of uses. Minimum score is 30 and maximum is 90, the scale shows that higher the score higher the level of uses of smartphone. The score below or equal to 30 indicate mild user, score of 31-60 indicate moderate user and score of 61-90 indicate excessive user. To assess health effects self-reported checklist was used which consist 16 items with two responses: yes or no. Collected data was analyzed by using descriptive and inferential statistics such as frequency, percentage distribution and chi-square.

Results Findings

Sample characteristics

Most of participant's 45.5% age was 17 years. More than half (57.8%) of the participants were from 12th class and 54.5% were male. More than half 54.5% participant were from semi-urban area. 33.8% participant's mothers had secondary education and 48% participant's fathers were graduated. More than one third 85.7% participant's mothers were homemaker and less than half 42.2% participant's fathers were in private job. Almost one third 73% participant's monthly family income was less than Rs 30,000. More than one third 84.5% participants got their own smartphone at the age between 15-18 years.

More than one third 81% participant were using smartphone for 1-4 hours daily. Almost one third 71% participant uses their smartphone before sleeping among them more than half 67% were using for less than 2 hours at bedtime. Majority 85% of participants were aware regarding effects of smartphone use on health.

Level of Smartphone uses

Figure 1 show levels of smartphone uses, data shows that out of 154 adolescents 89% were moderate users and 11% adolescents were in the category of excessive uses of smartphone.

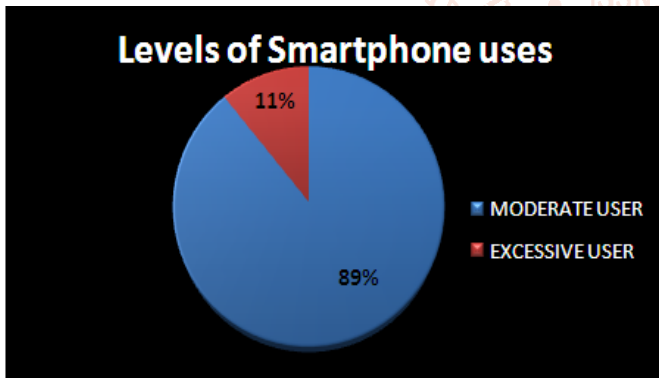


Figure1: Frequency and percentage distribution of levels of smartphone use. (N=154)

Reasons for using smartphone (multiple responses)

Figure 2 reasons of using smartphone, data indicates shows that 55.6% participants explore internet through smartphone, 32% participants were using for calling their parents and friend, 11% participants were using for texting and 1.4% participants were using smartphone for other purposes such as fashion, calculator, alarm etc.

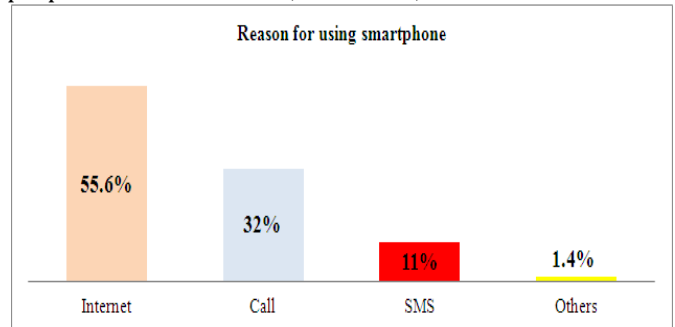


Figure2: Reason for using Internet (Multiple responses) Reasons for using internet

Figure 3 shows that 24.9% participants use internet for social media, 21.3% participants use for study purpose, 17.3% participants use for watching videos in youtube, 17.3% participants use for music, 10.6% participants use for online games, 10.3% participants use for online shopping and 0.9% participants use internet for others purposes such as watching news, sports etc.

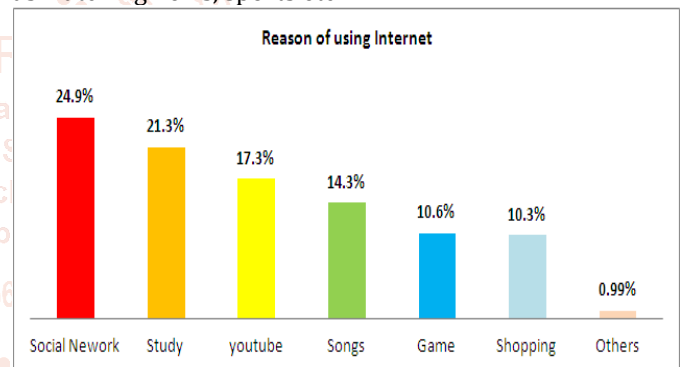


Figure3: Frequency and percentage distribution of reason for using internet. (N=154)

Effect of smartphone on health

The following table no.1 depicts the frequency and percentage distribution physical effects of using smartphone among adolescents. The results shows that most of the participants 61% experienced headache, followed by eye discomforts 44.2%, neck pain 42.9%, wrists pain 41.6%, tiredness 41.6%, blurred vision 35.1%, difficulty in hearing 14.3%.

Table no.1: Frequency and percentage distribution of physical effect on adolescents due to smartphone use. (N=154)

Rank	Physical Effects	f	%
Symptoms experienced by participant after using smartphone.			
1.	Headache	94	61
2.	Eye discomforts	68	44.2
3.	Neck pain	66	42.9
4.	Wrists pain	64	41.6
5.	Tired	64	41.6
6.	Blurred vision	54	35.1
7.	Difficulty hearing	22	14.3

Table no.2 depicts the rank wise Frequency and percentage distribution of other effects due to use of smartphone among adolescents. The result shows that adolescents experienced increase in anger (48.7%) followed by excited regardless of fatigue (44.8%), anxious (39.6%), restless (39%), irritation (38.35), irritated when stop using (33.8%), delayed food (26.6%), minor accident (24.7%).

Table2: Frequency and percentage distribution of other effects on adolescents due to smartphone use. (N=154)

Rank	Other Effects	f	%
Symptoms experienced by participant after using smartphone.			
1.	Increase in Anger	75	48.7
2.	Get Excited easily.	69	44.8
3.	Anxious	61	39.6
4.	Restless	60	39
5.	Irritation	59	38.3
6.	Lacking of adequate sleep	55	35.7
7.	Get Irritated when force to turn off phone	54	33.8
8.	Delaying in food	41	26.6
9.	History of minor accident	38	24.7

Association between levels of smartphone uses and socio-demographic variables

There was no significant statistical association found between levels of smartphone uses and socio-demographic variables such as age, class, gender, area of living, types of family, monthly family income, duration of phone use, father's and mother's education except gender (4.76) at $p < 0.05$ level of significance.

Discussion

Smartphone has become an essential gadget for everyone. With just a single tap we are able to connect with our family and friends. In addition it also offers many attractive features which easily magnetize its users and can also be responsible for ill effects on the health of user. In the present study, 89% adolescents were in the category of moderate users and 11% adolescents were in the category of excessive users. The result was supported by a study done by Khosla P, et al (2017) done to assess smartphone addiction among teenagers. Result shows that 5% students had severe, 55% students had moderate and 40% students had mild addiction level.⁹

Regarding effect on health following symptoms were reported by participants headache (61%), anger (48.7%), fatigue (44.8%), eye discomforts (44.2%), neck pain (42.9%), wrist pain (41.6%), tiredness (41.6%), anxiety (39.6%), restlessness (39%), irritation (38.35), blurred vision (35.1%), got irritated when stop using (33.8%), delay food (26.6%), accidents (24.7%) and hearing problems (14.3%). The result was supported by a study done by A P Jayanti, et, al (2013) to assess the self perceived effects of cell phone usage among college going students. The results found that 51% students had headache and irritability/anger. Other physical problems experienced were eye strain (37%), body pain (32%), digital thumb (14%) were also found.¹⁰

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