The Pharma Innovation Journal 2019; 8(5): 283-292

www.ThePharmaJournal.com

The Pharma Innovation

ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.03
TPI 2019; 8(5): 283-292

www.thepharmajournal.com
Received: 07-03-2019
Accepted: 09-04-2019

CH B Praveena Devi
Joginpally B.R. Pharmacy College, Yenkapally (V), Moinabad (M), Hyderabad, Telangana, India

Shahesta Samreen
Joginpally B.R. Pharmacy College, Yenkapally (V), Moinabad (M), Hyderabad, Telangana, India

B Vaishnavi
Joginpally B.R. Pharmacy College, Yenkapally (V), Moinabad (M), Hyderabad, Telangana, India

D Navitha
Joginpally B.R. Pharmacy College, Yenkapally (V), Moinabad (M), Hyderabad, Telangana, India

N Kusuma Kumari
Joginpally B.R. Pharmacy College, Yenkapally (V), Moinabad (M), Hyderabad, Telangana, India

JVC Sharma
Joginpally B.R. Pharmacy College, Yenkapally (V), Moinabad (M), Hyderabad, Telangana, India

P Sirisha
Joginpally B.R. Pharmacy College, Yenkapally (V), Moinabad (M), Hyderabad, Telangana, India

Correspondence
CH B Praveena Devi
Joginpally B.R. Pharmacy College, Yenkapally (V), Moinabad (M), Hyderabad, Telangana, India

A study on impact of electronic devices on youngsters

CH B Praveena Devi, Shahesta Samreen, B Vaishnavi, D Navitha, N Kusuma Kumari, JVC Sharma and P Sirisha

Abstract
A study has been conducted on 200 volunteers in Hyderabad. Among them 77 were Male and 123 were Female volunteers. The age ranges of the students vary from 15 to 25 years with an average age of 21 years. Most of the respondents possess two or more than two technological gadgets. The questionnaire had been framed based on the problems associated with the excessive usage of electronic devices. The study has been conducted on the areas like how much duration does the volunteers use the devices, the position in which they use the device, the health hazards they were facing because of the excessive usage like stress, headache, anxiety, depression, with-drawl symptoms etc. The volunteers who use the device more than 6-8 hrs had also shown disturbances in their logical thinking and memory level.

Keywords: Electronic devices, gadgets, anxiety, stress

1. Introduction
The convergence of communication and computing for mobile consumer devices is on the evolutionary course to bring interoperability and leverage the services and functions from each and every industry. In this process of convergence the Smartphone‘s are the leading devices taking the front end and playing the role of universal mobile terminal. As a marketing strategy the Smartphone term was introduced in the market, referring a new class of mobile phones that provides integrated services from communication, computing and mobile sectors including voice communication, messaging, personal information management (PIM) applications and wireless communication capability [1].

In real sense Smartphone is a mobile phone with advanced features and functionality beyond traditional functionalities like making phone calls and sending text messages. The Smartphone are equipped with the capabilities to display photos, play games, play videos, navigation, built-in camera, audio/video playback and recording, send/receive e-mail, built in apps for social web sites and surf the Web, wireless Internet and much more. Due to same reasons the Smartphone‘s now become a common choice for consumers along with the use in business as it was initially intended for business users only [2].

The latest surveys show that the popularity of Smartphone‘s is increasing in general public with the more paces then it is increasing in Corporations. Initially the Smartphone‘s were only perceived for business use due to their cost and application, but not today, today we are in a frenetic Smartphone society populated with the Smartphone‘s from many vendors providing a range of advanced functionalities and services on a piece of hardware [3]. Today Smartphone‘s enable consumers, advertisers and publishers how to better engage, socialize using the ubiquitous experience this advanced platform by leveraging it‘s of the firm. The focus of income statement is on the operating revenues and expenses. User groups of financial reports for decision–making require data related to all easy to use and availability characteristic [4].

The widespread usage of smartphones around the world has attracted the focus of several researchers to study the behaviour of smartphone users and the consequential effects on their health and well-being.

A study in Singapore by Ong *et al*.; focuses on the typing force and thumb motion during texting on a cell phone. Typing forces were measured using four load cells in a force plate arrangement fitted into the phone casing, while the thumb motion was captured based on a motion capturing system working at a frame rate of 120 Hz using a 6-camera reflective marker. This study did not find any incidence of peak forces in the right column of the keypad. The results of the research indicated that the incidence of peak force was linked to high angular displacement in flexion of the IP joint (end joint of the fingers) and in thumb opposition of the metatarsophalangeal joints (MCP) joint [5].

A study about the relationship between life stress and smartphone addiction was performed by Chiu at Taiwan University. Although numerous studies have examined the factors that influence smartphone addiction, few have analyzed the potential protective factors inherent to individuals that may benefit future intervention programs for smartphone addiction Thus, Chiu study established a model for analysing the mediating effects that social self-efficacy and learning self-efficacy have on the relationship between students' smartphone addiction and perceived life stress [6].

In another study by Sharan *et al*. about the upper extremities' MSDs, they concluded that cell phones and gadgets that promoted the predominant only thumb usage or only one finger usage during texting or control usage were associated with a higher MSDs prevalence. They also found that an effective treatment way is performed using a sequenced rehabilitation protocol [7].

Berolo *et al*. performed a study in a Canadian university population to achieve three goals: Specifying seven measures of cell phone use distribution, determining the distribution of the MSDs of upper extremity, upper neck and back, and to find the relationship between MSDs and cell phone use. Results of this study revealed that 84% of participants reported pain in at least one part of the body and the most common pain was at the bottom of the right hand thumb [8].

In another study by Eapen *et al*. in India aiming to find the prevalence of MSDs in the upper extremity associated to smartphone use, they found that the overall prevalence of MSDs in the upper extremity is found to be 18.5%. The most significant symptoms was found in the thumb. The most common symptoms reported by the respondents were pain and fatigue [9].

Chany *et al*. compared small cellular clamshell phones and traditional office phones in the development of discomfort and muscle fatigue over time when using phones. They found that the development of discomfort and fatigue during phone use is influenced by phone design and human anthropometry. In addition, the design of the phone dictated the style of the grip, resulting in differing fatigue levels and discomfort. The severity of the discomfort is influenced by the anthropometry and fatigue present in the hands and shoulders [10].

Another study conducted in the United Arab Emirates aiming to investigate smartphones impacts on society and also how smartphones are going to transform culture, social life, the technology landscape and other diverse aspects of modern society. The study summarized the impacts that smartphone's have on society and also concluded how these impacts affect the society. The study also recommended solutions to reduce the negative impacts of smartphones and add more benefits of this exiting technology. In recent years, the ownership and usage of smartphones have become widespread, especially among young people in Jordan. [11].

The smartphones, being a very new invention of humanity, became an inherent part of human's life. The smartphone combines different sophisticated features. It allows users to keep pictures, memories, personal info, correspondence, health and financial data in one place. Smartphones also became an integral part of modern telecommunications facilities. In some regions of the world, they are the most reliable or only of available phones. The phones allow people to maintain continuous communication without interruption of their movements and distances.

Smartphones and handheld devices (HHD) combine advanced computing capability, such as internet communication, information retrieval, video, e-commerce and other features, that makes the device is one of the necessities for many people. "Mass cell phone mobilization" covered humanity probably ten or fifteen years ago. According to GSMA Intelligence, the number of mobile devices is 7.22 billion while the US Census Bureau says this figure is still between 7.19 and 7.2 billion. The growing number of smartphones and smartphone owners raises a concern about phones' effect on human health and life. A world-wide popularization of smartphones and a little knowledge about their side effects triggered the author to start research on effects of smartphones on human health and life. Merriam-Webster dictionary defines the smartphone as "a cell phone that includes additional software functions (as e-mail or an Internet browser)". In this research, the author implies the handheld devices that have cellphone futures. The highlights of this research include recent scientific facts and research analysis of the smartphones on human health and life. The author also discusses advantages and disadvantages of smartphones' usage by people and brings examples of those who refuse to use smartphones.

"Mass cell phonization" revealed proponents and opponents of cellphone users. Cellphones' proponents state that devices enhance safety, deliver education, improve transparency and root out corruption, strengthen democracy and provide access to the market, while opponents see various health risks and nature pollution.

1.1 Effect of electro-magnetic waves on human brain

The smartphone is a source of the eminence of electromagnetic waves. Numerous studies have been conducted in the past years to identify the effect of electromagnetic waves emitted from the cell phones on human health. The topic has been studied for a long time, but in past, it touched on a rather narrow circle of people, mostly staff of broadcast and specialized radio stations. Even at that time, measures taken to protect people from radiation apply only on those who work near powerful sources of radiation. And despite the revolutionary changes in the field of tele-communications, as well as many discoveries and emissions, the impact of electromagnetic waves of different frequencies hotly debated ever since. As soon as mobile phones more and more part of our lives, the world is continuing research to proof whether cell phones are harmful to human health? Today there is no official statement announced by laboratory or medical center to answer this question. The complexity of the analysis of the statistical data makes the task more difficult for researchers. The impact of harmful radiation emitted from cell phones waves is still being studied [12].

2. Methodology

This study is based upon the intensive fieldwork conducted in Hyderabad. The fieldwork was conducted during the month of December 2018 to February 2019. A pilot study was conducted in the month of September, 2019 before the commencement of the fieldwork. The choice of both the study area and purpose are also dependent upon the previous observation. The sampling method used to select the study area was purposive one. Both the quantitative and qualitative methods were used for the analysis of the data. Ms Word and Ms Excel were used for the data analysis.

2.1 Study Area

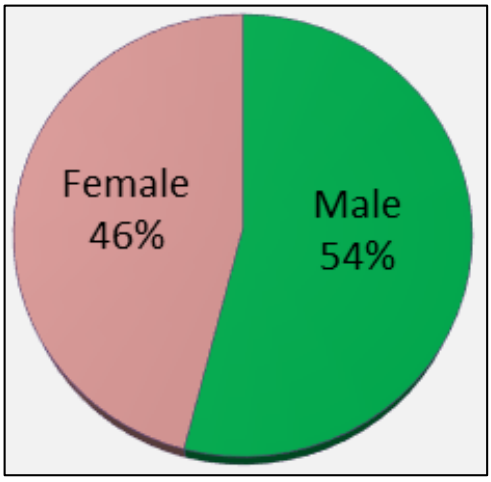
The study is conducted in different areas of Hyderabad. The places selected for the research work were majorly among the

young members of the families, students and IT professionals in the hostels and few volunteers are from the Joginpally B.R. Pharmacy College.

2.2 Sample
A purposive sampling method was followed to collect information from 200 students of the institute out of which 77 were male and 123 were female students. The age range varies from 15 to 30 years. The average age of the total sample was 21 years. Being a technical institute the representation of the female students is less. That is why there is a disparity in the number of samples of male and female students in present study. The sampled people vary from Intermediate, B. Pharm/B. Tech to IT professionals. The numbers of participants from each category of courses are 8, 103 and 89 respectively. In the present study participants, students and respondents are used interchangeably.

2.3 Methods of Data Collection
The questionnaire used in this study is a structured one. The first part of the questionnaire is consisting of the declaration and the demographic profile of the participants followed by four sections. The latter four sections were containing close ended questions regarding the use of the technological gadgets and the present health status of the participants. The following data were collected by the team and the reports were attached.

2.4 Demographic details of the users
In our study among 200 volunteers, out of which there 77 were male and 123were female volunteers. The percentage of the male population was found to be 54% and the female population was 46%.



Demographic Graph

2.5 Gender Difference in the Purpose of use
The purposes behind the use of the tech-devices in case of male participants differ from that in case of female participants. The male respondents are giving 70% of time for entertainment purpose, 17% for study purpose and 13% for communication purpose where in case of female respondents; it is 55%, 25% and 20% respectively (Table No 1). From the results, it is evident that females use the services slightly more for studies and communication than their male counterparts. However, male students use the services mostly for entertainment.

In Section-A of the questionnaire contains questions regarding the use of the gadgets in a tabular form. The time spent with the gadgets and services by the respondents was asked provided options like 1-2 hrs, 2-4 hrs, 4-6 hrs, 8-10 and >15 hrs against each gadgets and services. Time spent for the purposes of use of the gadgets and services was also asked. The percentage calculation of the respondents was made as per the time spent with the gadgets and time spent for the purposes. In the present study the use of the gadgets for more than 6 hours is regarded as addictive use by the respondents.
In section-B of the questionnaire some questions were asked about the dependency of respondents on the technological gadgets and services. Out of 12 questions, question number 5, 8 and 10 were negative statements and therefore were reverse coded for calculation. All questions were in 5-point Likert-scale, where 5 refer to strongly agree and 1 refers to strongly disagree. The score in this 5-points scale varied from 10 to 50. The score from 34 to 50 is regarded as high, from 17 to 33 as moderate and from 10-16 as low dependency.
As dependency determines the addictive behaviour, so the more the dependency the more will be the addiction among the respondents.
In both the sections-C and D some questions regarding the present health status and social behaviour were asked. The percentage of the respondents having health problems and problematic social behaviour was calculated. Finally the results yielded from these two sections were compared with the results of section A and a comparative analysis was made to 16 know the impacts of the addictive use of tech-devices on mental health and lifestyle of the respondents.
Semi-structured and unstructured interviews were conducted with the students regarding the use of the tech-gadgets and services and its impact on their health and social status. These types of interviews were chosen for this study because the study deals with the youth and it also consists of the information about health. On spot changing of the question is required for getting correct information from the participants. The data collected through this process was helpful for qualitative analysis in the study.

3. Results and Discussion
3.1 Possession of Technological Gadgets
To analyse the addictive use of the tech-devices it is necessary to consider the possession of them by the youth. The more number of gadgets one will have the more time of him/ her will be spent with those. It is clear from the data that all most all of the respondents i.e. up to 99% of them are using one/two gadgets perday. Among them 71.5% respondents are using Mobile as a Gadget, 39.5% are using Laptop, 24.5% television, 11.5% Desktop and 3% are using I pad. (Fig No 1). It shows the fondness of the young participants towards the tech-devices and services.

Table 1: Possession of the Gadgets by the Respondents

S. No	Type of Gadget used	No. of Users	% of Usage
1.	Television	49	24.5%
2.	Laptop	79	39.5%
3.	I pad	6	3%
4.	Mobile	143	71.5%
5.	Desktop/System	23	11.5%

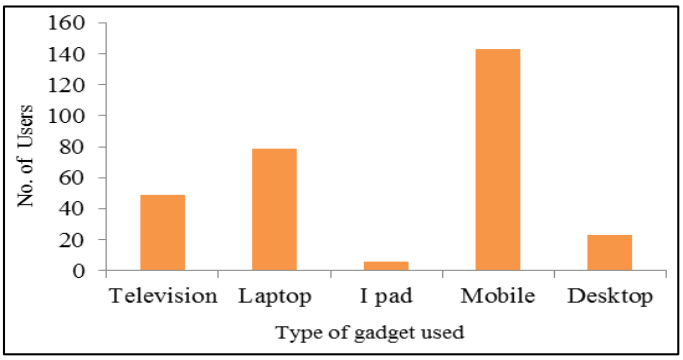


Fig 1: Possession of the Gadgets by the Respondents

The availability of something always forces the use of that product as it is the nature of the human being to do so. In other words, the more one can have the more one can use. So due to this availability the use of the tech- gadgets are increasing in significant manner. One of the interesting features of new gadgets is that they provide lots of fun and amusement with each new edition. This keeps the youth hooked to the gadgets for a longer period of time.

3.2 Time Spent to Avail the Services

After the possession of the number of gadgets the next important information is the time spent by the respondents to use them. Even to claim that somebody is addicted to certain thing the time factor is very important for analysis. The diagram in the fig 2 shows how much time the respondents are devoting towards the gadgets they are using. The tallest bar in the diagram signifies the amount of the participants using their devices for more than 6 hours. Their percentage is 43% of the total respondents are spending more than 6 hours per day with their technological devices and enjoy the services out of them. This also means ¼th of their time is spent with their gadgets and services. Where 27% participants are using the gadgets for 4-6 hours per day and 24% of them are using these for 2-4 hours. The amount of participants those spend 1-2 hours per day with their gadgets is very less i.e. only 6% (Fig No 2). This statistics from of the data shows the voracious use of the devices by the young respondents. 6 hours or above is a large time period for a student even if for anybody.

Table 2: Time Spent with the Gadgets by the Respondents

S. No	Time Spent (in hours)	No. of users	% Time
1.	1-2 hrs	12	6%
2.	2-4 hrs	48	24%
3.	4-6 hrs	54	27%
4.	6-8 hrs	19	9.5%
5.	8-10 hrs	50	25%
6.	10-12 hrs	11	5.5%
7.	>12	5	2.5%

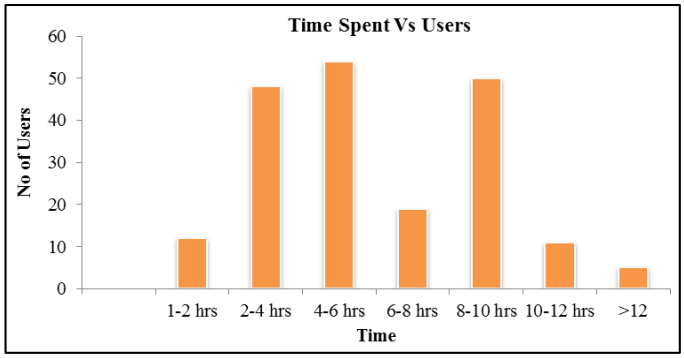


Fig 2: Time Spent with the Gadgets by the Respondents

If it is analysed it can be understood that beside their college hours, sleeping hours and the daily activities the participants are using all their time in making themselves busy with the gadgets and services (internet, social sites, gaming etc.). So it can be even told that gadgets are the best friend of the present youth to spend time with them. The analysis of this data symbolises that the degree of use of the tech-gadgets and services among these young mass is very high, leading to the addiction towards the technological devices. The user can be claimed as an addict here, as having the knowledge of the consequences of the excess use of the services they are using them up to such extent. Needless to say that, this section of the society is the highly educated mass.

The questionnaire also included a question about how many electronic devices that a respondent is using per day and how much time does each individual spending time on different electronic devices. The results were depicted as shown in the fig 3. As the volunteers included IT professionals the most popular electronic device used was found to be Laptop. A maximum of 48 persons reported that they are using laptop as the highest duration when compared to other devices.

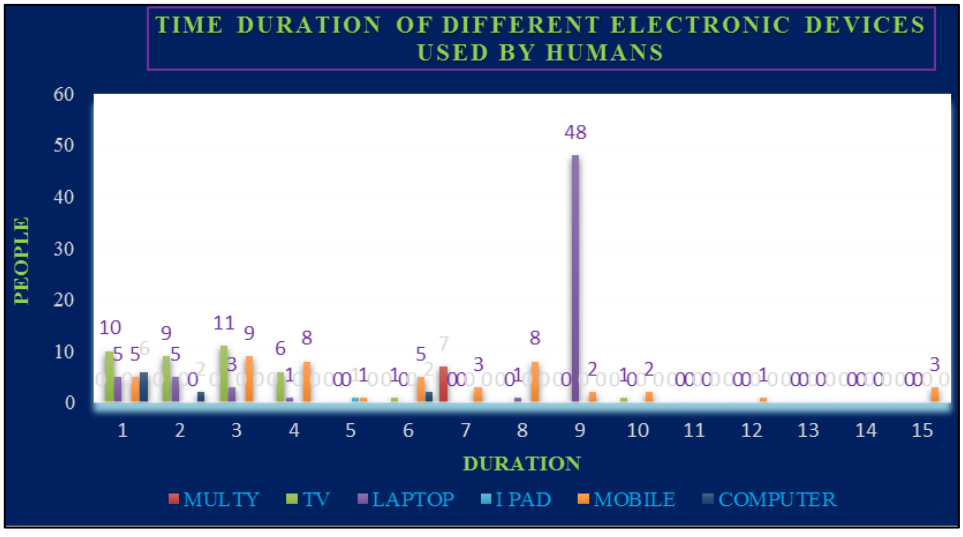


Fig 3: Type of electronic device used vs Duration Spent with the Gadgets by the Respondents

3.3 Impact of Positional usage of the electronic device

The position in which the users handling the device is always considered as an important factor because the position in which the user uses the device for example standing, sitting and sleeping shows the angle in which the device is handled and hence are the problems faced.

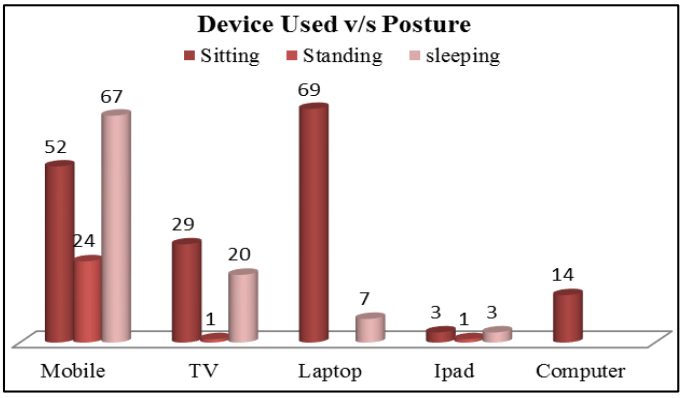


Fig 4: Impact of postural problems while using the device

3.4 Purpose of Using the Devices and Services

Although impacts of the overuse of a subject is independent upon the purposes behind the use of that subject, in case of claiming a use as addiction the purpose behind the use has to be considered. Here the purposes are categorised into three categories such as study, communication and entertainment. Among 200 respondents, majority of them was using the electronic devices as a mode of entertainment.

3.5 Physical Health Problems

Physical Discomfort

As per the prior knowledge pain, aches (basically headaches) are some symptoms of weak health. Regular headaches are also having problems on mental health of the individual. Repetition of the same thing for a long period of time may cause headaches for somebody. Also constant use of a particular object can have aches. Generally pain and aches will be there when movement of both body and mind is restrained in one place. According to the data nearly 78% of the respondents whose time period of using gadgets is above 6 hours are having headaches and pain on a regular basis. The statistics for the latter three categories on the basis of time period of using gadgets is like this: 9% of the users were reported to have headaches when they use the electronic device for about 4-6 hrs, 1.5% and 1% for 2-4 and 1-2 hrs respectively (Table No 3). The lights and the radiations coming out of the gadgets may be the causes of headaches. This analysis according to the data supports those known facts as a large portion of the participants addicted to tech-devices are suffering from regular headaches.

Table 3: Time spent with the Gadgets by the Respondents

S. No	Time Spent (in hours)	No. of users	% Time
1.	1-2 hrs	2	1
2.	2-4 hrs	3	1.5
3.	4-6 hrs	18	9
4.	6-8 hrs	5	2.5
5.	8-10 hrs	10	5.0
6.	10-12 hrs	1	0.5
7.	>12	1	0.5

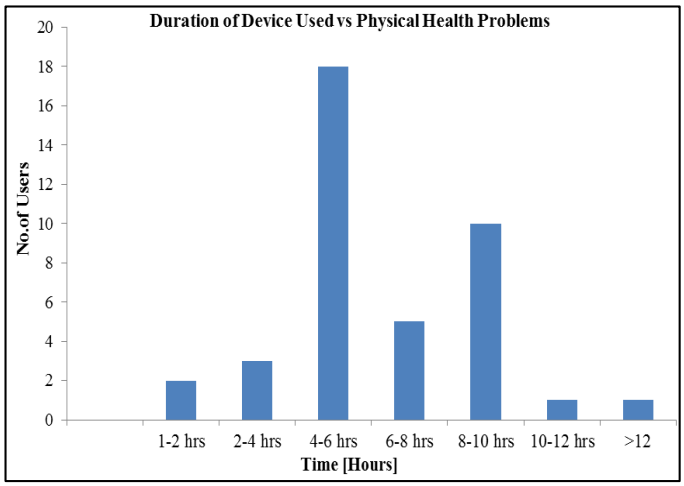


Fig 5: Respondents having Regular Headaches 3.06 Sleep

About 2% of the respondents who are using their gadgets for more than 6 hours have stated that they have sleeping problems i.e. they face problem in falling asleep or staying asleep. But in case of other respondents the problem is not of considerable level. (Table No 4). Less sleeping can affect their health in a long run. It has negative impacts on both on mental and physical health of the individual. So it is one of the most negative impacts of the technological addiction. Sleeplessness itself is considered as a disease by the health experts.

Table 4: Time Spent with the gadgets by the Respondents

S. No	Time Spent (in hours)	No. of users	% Time
1.	1-2 hrs	0	0%
2.	2-4 hrs	1	0.5%
3.	4-6 hrs	1	0.5%
4.	6-8 hrs	3	1.5%
5.	8-10 hrs	1	0.5%
6.	10-12 hrs	0	0%
7.	>12	0	0%

3.7 Sleeping, Hearing Problems and Headache

Among 200 volunteers, maximum people reported they have either of the single or a multiple problems faced while using the electronic devices. The results were tabulated (table no 5) and it shows that, 27% of the users have these issues as the highest when they use the devices for as long as 2-4 and 4-6 hours. And around 25% respondents reported that they have any of these three issues when they used the devices for about 8-10 hours. They have also reported that even though they use for an hour or two, the problems were found to be occurring irrespective of the time duration they are spending on the devices.

Table 5: Time Spent with the Gadgets by the Respondents

S. No	Time Spent (in hours)	No. of users	Percentage%
1.	1-2 hrs	12	6
2.	2-4 hrs	48	24
3.	4-6 hrs	54	27
4.	6-8 hrs	19	9.5
5.	8-10 hrs	50	25
6.	10-12 hrs	11	5.5
7.	>12	5	2.5

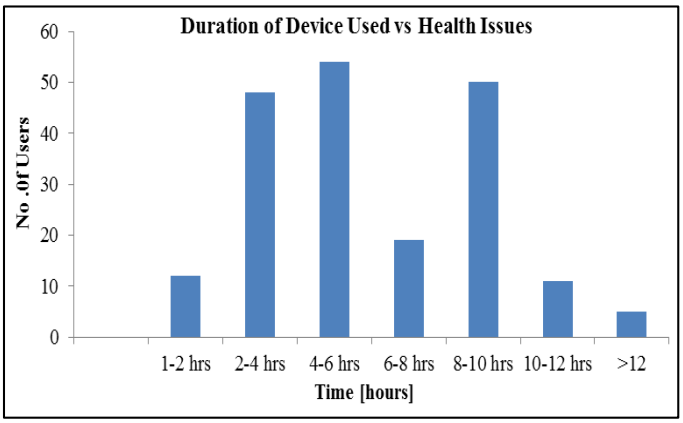


Fig 6: Respondents having Headaches, Hearing and Sleep Problems

3.7 Mental Health Problems (with drawl effects)

Anxiety or Stress Level

Anxiety, nervousness or stresses are generally considered to be the characteristics of ill mental health of an individual. The more the degree of these characteristics the more unhealthy the person would be. A healthy mind is required to possess fewer amounts of these symptoms.

Table 6: Time Spent with Gadgets by the Respondents

S. No	Time Spent (in hours)	No. of users	% Time
1.	1-2 hrs	9	4.5%
2.	2-4 hrs	13	6.5%
3.	4-6 hrs	17	8.5%
4.	6-8 hrs	5	2.5%
5.	8-10 hrs	12	6%
6.	10-12 hrs	0	0%
7.	>12	0	0%

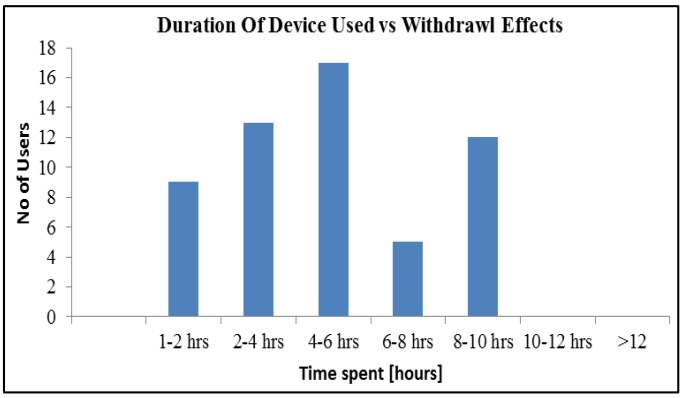


Fig 7: Impact of Addiction on Anxiety Level

According to the source data over use of the technological devices by the respondents has a greater effect on the anxiety and stress level of them. From the graph in the fig 7 it is clear that there is direct relation between the use of gadgets and the level of anxiety and stress. It shows that the degree of the anxiety or nervousness is normal in case of the low users of the devices and it increase with the increase of time period of use from mild to severe. Most of the users using the gadgets for more than 6 hours are anxious and nervous. The reason of this anxiety may be the mentality of the users of gaining speed in every work which is the effect of gamming and use of internet. Everybody in the tech world wants the fast motion in every work. And when they can't achieve that, it becomes the very cause of their nervousness.

3.8 Logical Thinking and Memory

A healthy and sound individual is expected to think about the things he comes across, logically and clearly. That means the functioning of his memory is well enough to think something. But the disorder in it can be considered as a mental health problem for the individual. The source data reveals that 25% of the respondents using the gadgets for more than 8 hours are having problem in logical thinking, whereas this problem is limited to 14.5% of respondents using the gadgets for 4-6 hours and is 5.5% in the case of the users of 2-4 hours and 5% for 1-2 hour users (Table No 7). This problem is seen to be normal in the latter three cases but in the first case it is significant.

Table 7: Respondents having Problems in Logical Thinking

S. No	Time Spent (in hours)	No. of users	% Time
1.	1-2 hrs	5	2.5%
2.	2-4 hrs	11	5.5%
3.	4-6 hrs	29	14.5%
4.	6-8 hrs	10	5%
5.	8-10 hrs	50	25%
6.	10-12 hrs	0	0%
7.	>12	0	0%

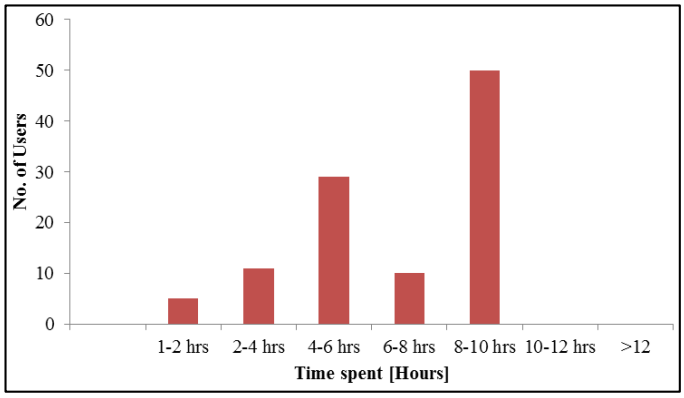


Fig 8: Impact on Logical Thinking

The respondents who are the users of more than 6-8 hours are more vulnerable towards the problem in logical thinking. In their case they may face problems in analyzing the situation surrounding them i.e. sometimes their mind may fail them to think about the thing or the situation. The users of this group are generally less exposed to their outward surrounding and always expected to be in their virtual world i.e. in the imagination of their internet world. So this may be one of the major factors due to which when they are exposed to their surrounding they may have difficulties in handling the situation around them. This can affect the mental health of this type of individuals in the long run.

3.9 Mood

The less should be the depression level the more healthy and happy the individual will be. So the sadness or the depression is having an impact on the mental health of an individual. The data represents here shows how the addictive use of the gadgets by the students is controlling the depression level of them. The data reveals that among the users of >6 hours, 83% are depressed in their lives. Whereas the percentage of the respondents having depression in case of the users of 8-10 hrs it is 25%, 6-8 it is 9.5%, 4-6 hrs is 27% and for 2-4 hrs it is 24% & 1-2 hrs users it is 6% (Table No 8). Again the degree of depression varies from lower to higher as per the increasing

order of the time period of the use of gadgets. It may be the result of social isolation of the students due to the devotion of large amount of time towards the technology. Although the gadgets are providing happiness to the students but after all these are the machines only and have no emotions and presence of mind. They work according to the data fed to them. So for cheeriness in life the interaction with the human beings is necessary and from which the addicts are deprived of and leading a depressed life.

Table 8: Time Spent with Gadgets by the Respondents

S. No	Time spent (in hours)	No. of Users	% Time
1.	1-2 hrs	12	6%
2.	2-4 hrs	48	24%
3.	4-6 hrs	54	27%
4.	6-8 hrs	19	9.5%
5.	8-10 hrs	50	25%
6.	10-12 hrs	11	5.5%
7.	>12	5	2.5%

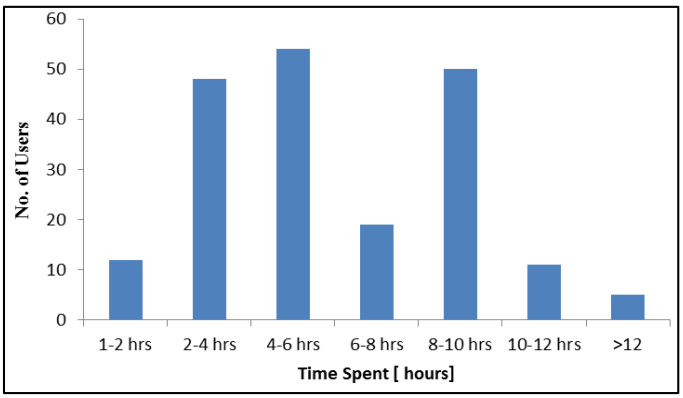


Fig 9: Impact on Mood

3.10 Mental Stability

Weak minds are generally getting worried even if in small matters. It signifies the patience level of the individual, which is much required for the stability of a person in the society. The 30 patience of an individual may be considered as the symbol of the presence of him in the real world.

These type worried personality are vulnerable to any reverse situation in life. According to the data addiction to technological gadgets is one of the causal factors for the worries of the respondents. Out of the participants using gadgets above 6 hours nearly 21.5% worry excessively even if on silly matters. Whereas the amounts varies in case of 4-6, 8-10 and 6-8 hrs users gradually. The scores are 14%, 9% and 7.5% respectively (Table No 9). By analyzing it can be known that the age to get maturity is increasing due to the addictive use of the young respondents.

Table 9: The scores are 14%, 9% and 7.5% respectively

S. No	Time spent in hours	No. of Users	% Time
1.	1-2 hrs	2	1%
2.	2-4 hrs	4	2%
3.	4-6 hrs	28	14%
4.	6-8 hrs	15	7.5%
5.	8-10 hrs	18	9%
6.	10-12 hrs	2	1%
7.	>12	1	0.5%

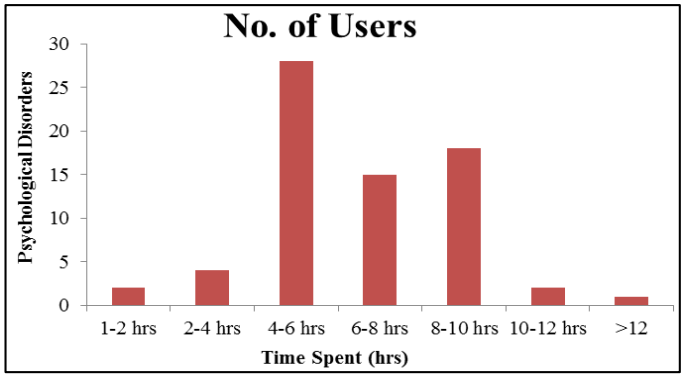
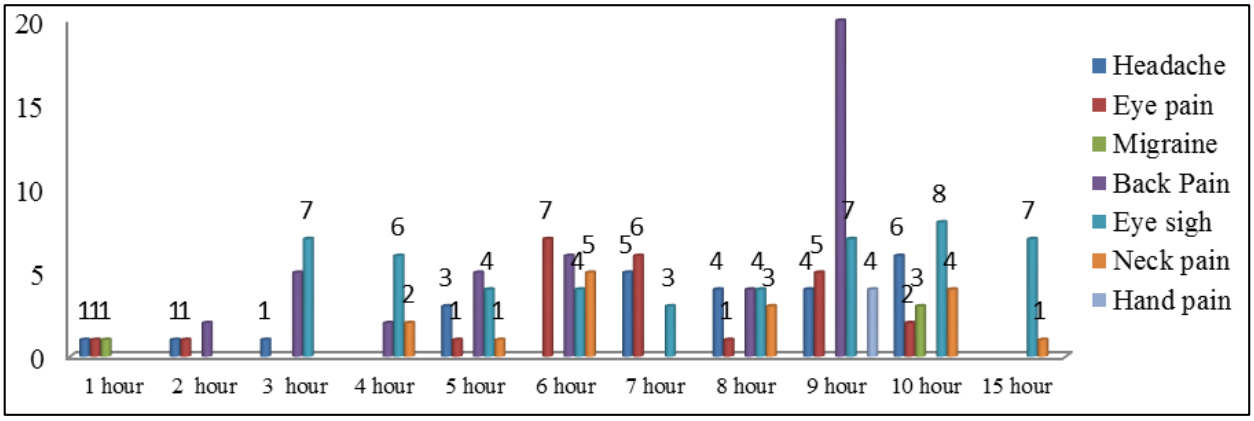


Fig 10: Shows the bad impacts of excessive use of the tech-devices on logical thinking, mental state, mental stability and consciousness level of the respondents.

The more the respondents use the tech-devices, the more they have problems in logical thinking, depression, worry, and have low consciousness.

3.11 Overall Physical problems respondents face during the excessive usage of electronic devices: Among the 200 respondents, most of them reported the problems related to headache, eye defects, migraine, back, neck and hand pain.



Duration v/s Type of Disorders

3.12 Impacts of Use of Tech-gadgets on Life Style

As life style concept is qualitative in nature, for the analysis of this aspects one has to depend upon the data collected from interviews and observations. The interviews are also of unstructured in nature. The change in the life style of any individual happens in a particular interval but it is dependent upon some driving force, which may be the cause behind changing pattern in their life style. From the information

gained through the observations and interviews it can be said that use of technological gadgets has an important role in the change in life style of the respondents. The respondents who spend large amount of time to their tech-devices always use them at night. They remain awake till late night due and generally are late to leave the bed. Many of them also bunk classes of the morning hours. Most of these respondents are having sleeplessness into higher degree. This observation supports the source data.

The over users of tech-gadgets are generally observed not to be active in any physical exercise. They are also remaining away from sports. Physical fitness of these youth is generally very low. When interviewed many of the respondents told that they hardly spend time in playing outdoor games and exercise. They claim that we have no time for this and that requires physical labor. According to them what is the necessity of these when they are getting amusements from technology. So it can be understood that the habits of the young mass are changing day by day due to inclination towards the tech gadgets.

When interviewed the respondents of addictive use of the gadgets, they informed that they hardly have any time for their friends for amusements and interaction. Even they meet their friends twice or thrice in a week. But in case of other students the meeting with friends is very frequent i.e. almost every day they are meeting their friends for amusements. The former type of respondent is in favor of maintaining friendship through social media. They prefer indirect communication rather than direct one. This signifies that life style of the respondents is changing by the influence of the technology. Most of the respondents are not visiting their home even for a long period of time. When asked they claim that they stay in contact with their family over phone.

Use of technological gadgets and services has reduced the effort of the young mass significantly. Most of the participants do online shopping of any kind of product. Many of the students prefer typing rather than writing. And also they generally use soft copy of the study materials rather the hard copies like books. Even the professors provide soft copies of most of the study materials (Interview).

The respondents consider Google as the storehouse of knowledge. It is observed that most of them are searching for the internet even for general knowledge. When interviewed they admitted that technology is the best source of knowledge (Supports the source data).

During observation it was observed that the anxiety level of the respondents is very high and they are anxious about their gadgets. They become worried when they are away from their gadgets and their rigidity level goes higher in case of any disturbances during the time, they spent with their gadgets. This observation supports the source data. The results from quantitative data and qualitative information gained from the participants complement each other in the sense that students use the technology for making their lives smoother, they like the advancements in the technological world and get immense benefits also. However, the other side of the story is not that rosy. When they use tech-devices and services beyond a specific time, they are more likely to suffer from various physical, mental and social health problems. Overuse of technology also affects their life style seriously. Hence, using technological devices and services in need should guide our behavior of using them. Excessive use of them may have a disastrous effect on our health and life style.

4. Conclusion

The present study conducted at different areas in Hyderabad, India, where 200 students had participated. Among the 200 participants, 77 were male and 123 were female respondents. The age ranges of the students vary from 15 to 25 years with an average age of 21 year. Most of the respondents possess two or more than two technological gadgets. Most of them are using their gadgets above 6 hours. Most of the respondents use internet for a large period of time. The respondents give most of their time of the total time spent with the gadgets, for the purpose of entertainment. The degree of dependency of the respondents on their tech-gadgets is higher. The findings of the present study partially support earlier studies in other countries (Young 2004, Ko 2007).

The respondents using the gadgets for a long period of time have negative impacts on their health. The respondents are busy with their gadgets for more than 6 hours are having several problems like problems in logical thinking, headaches, depression, anxiety, etc. The respondents of the same category also have problems in sleeping, worry excessively, are afraid of public speaking and have low consciousness. But these problems are seen less in the respondents using the gadgets below 6 hours. The problems faced decreases with the decrease in time spent with the gadgets. The present study agrees with earlier studies confirming over use of the tech-devices and services leads to addiction to the gadgets and has impacts on mental health of the respondents (Cabral, 2011, Cotton, 2001, Young, 1998).

Again, the study shows that addiction to tech-gadgets has impacts on the life style of the respondents. The respondents using the gadgets for more time are observed to do less physical work as compare to others. These respondents of this category often spend less time with their friends and the frequency of visiting their home is low. They prefer indirect communication i.e. through social media than direct interaction with others. The current study draws support from Erickson's (2012) study.

In this era of technology, the dependency of the present generation on the tech- devices and the services provided by them is in the peak position, and they can't be refrained from their use completely. It will be an impracticable idea to think so. As we know it takes a lot of time to make a habit and even take more time to get rid of it. Whatever positive available in the world, we must practice that. This is also true in case of using the technological gadgets. Their use should be need driven rather than luxury driven and they should not compromise with other necessary activities of daily living. In other words, a limit in the use of everything is desired. The individual who knows this limit remains happier in the long run. So the issue of this technological addiction among the youth should be addressed as youth is the foundation of any society to grow or develop. It is serious concern for the developing country like India and its youth. They are in a stage of adoption of the new technology and therefore they can control and regulate the use of the technology in a constructive way. The unlimited use of the technologyis leading us directly or indirectly to become more self-centred which is a threat to our cultural belief of togetherness and the values of sharing and caring. As Ayn Rand has truly said, "One can avoid the reality but one can't avoid the consequences of avoiding the reality." So, the youth of the present generation should be aware about the hard facts of doing or practicing anything extremely.

4.1 Significance of the Study

There are a number of research work related to this study area conducted basically in westerncountries and the countries having a developed society. The studies are based upon the western/ modern culture and the availability and facility of the tech-gadgets and services are large in those country. Comparatively fewer studies are being conducted in the developing countries like India related to this area of study and those fewer studies are even conducted in the metro cities. This study is conducted in Hyderabad. This study will be an additional knowledge in the respective field of research for the upcoming researcher. It may also help the volunteers to understand the impacts of the addiction to the tech-gadgets and services and make them aware about the control of the use of the devices.

4.2 Limitations and Future Directions

The sample size of the present study might not be a representative one. Hence, future studies may incorporate a large representative sample. Paucity of time led to restrict the study to focus on the users only. Future researches may consider a control group to have a comparative analysis of the impacts of using and not using technology excessively to confirm the findings of the current study. There may be other factors that might have influenced the mental health and social life but could not be controlled.

5. References

1. Pei Zheng, Lionel Ni M. ―Smart Phone and Next Generation Mobile Computing, 2006. http://www.sciencedirect.com/science/book/9780120885602
2. http://www.techterms.com/definition/smartphone
3. http://nurfitriah.wordpress.com/2012/03/25/smarphone-addiction/
4. http://www.comscore.com/Insights/Press_Releases/2012.
5. Ong. F,"Thumb Motion and Typing Forces during Text Messaging on a Mobile Phone," in 2008 ICBME Conf. Proceeding, 2095-2098.
6. Chiu S. Computers in Human Behavior. The relationship between life stress and smartphone addiction on Taiwanese university student: A mediation model of learning self-efficacy and social self-efficacy. 2014; 34:49-57.
7. Sharan D, Mohandoss M. 'Musculoskeletal Disorders of the Upper Extremities Due to Extensive Usage of Hand Held Devices, Annals of Occupational and Environmental Medicine, 2014; 26[22].
8. Berolo S, Wells R. Musculoskeletal symptoms among mobile hand-held device users and their relationship to device use: A preliminary study in a Canadian university population," Applied Ergonomics. 2011; 42(2):371-378.
9. Eapen. C, Kumar B. Prevalence of Cumulative Trauma Disorders in Cell Phone Users, Journal of Musculoskeletal Research. 2010; 13(3):137-145.
10. Chany AM, Marras WS. The Effect of Phone Design on Upper Extremity Discomfort and Muscle Fatigue," Human Factors J. 2007; 49(4):602-618.
11. Sarwar M, Soomro TR. Impact of Smartphone's on Society, European Journal of Scientific Research. 2013; 98(2):216-226.
12. The impact of smartphones and mobile devices on human health and life By Leonid Miakotko: https://www.nyu.edu/classes/keefer/waoe/miakotkol.pdf
13. Tsitsika A, Janikan M. Internet use and Internet Addictive Behaviour among European Adolescents: A cross-sectional study, EU NET ADB, 2013.
14. Samson PJ. Deliberate engagement of laptops in large lecture classes to improve, 2010.
15. Ophir E, Nass C. Cognitive control in media multitaskers.Proceedings of the National Academy of Sciences. 2009; 106(37):15583-15587.
16. Sellen AJ, Harper RHR. The Myth of the Paperless Office. Cambridge, MA: MIT Press, 2002.
17. Walsh K. Pros and cons of digital devices in the hands of young students. Emerging Ed Tech, June, 2012.
18. Erickson T. How mobile Technologies are shaping a New Generation, 2012.
19. Cabral J. Is Generation Y addicted to Social Media? The Elton Journal of Undergraduate Research in Communications, 2011, 2(1).
20. Cotton SR. Implications of Internet technology for medical sociology in the new millennium. Sociological Spectrum. 2001; 21(3):319-340.
21. Young KS. Internet addiction: The emergence of a new clinical disorder. Cyber Psychology & Behavior. 1998; 1(3):237-244.
22. Shapira NA, Lessig MC. Problematic internet use: proposed classification and diagnostic criteria. Depression and anxiety. 2003; 17(4):207-216.
23. Saez A. Bad Effects of Electronic Gadgets. Health. Ehow, 2010.
24. Mitchell MP. Generation Tech: The Good, Bad, and Scary. The Moment of Youth. Psychology Today, 2012.
25. Chou C, Condron L. A review of the research on Internet addiction. Educational Psychology Review. 2005; 17(4):363-388.
26. Watkins A. Where Reality Meets Hyper Reality: Our Life is ours to Create. Popular culture Association Conference, Jacksonville, FL, October, 2003.
27. Boothroyd D. Getting Your Fix: Technology Addiction, 2014.
28. Van den Bulck J. The effects of media on sleep. Adolesc Med State Art Rev. 2010; 21:418-29.
29. Adam EK, Snell EK. Sleep timing and quantity in ecological and family context: a nationally representative time-diary study. J Fam Psychol. 2007; 21:4-19.
30. Thorleifsdottir B, Bjornsson JK. Sleep and sleep habits from childhood to young adulthood over a 10-year period. J Psychosom Res. 2002; 53:529-37.
31. Dorofaeff TF, Denny S. Sleep and adolescence. Do New Zealand teenagers get enough. J Paediatr Child Health. 2006; 42:515-20.
32. Punamaki RL, Wallenius M. Use of information and communication technology (ICT) and perceived health in adolescence: The role of sleeping habits and waking-time tiredness. J Adolesc. 2007; 30:569-85.
33. Yen CF, Ko CH, The multidimensional correlates associated with short nocturnal sleep duration and subjective insomnia among Taiwanese adolescents. Sleep. 2008; 31:1515-25.
34. Weaver E, Gradisar M. The effect of presleep video-game playing on adolescent sleep. J Clin Sleep Med. 2010; 6:184-9.
35. Cain N, Gradisar M. Electronic media use and sleep in school-aged children and adolescents: a review. Sleep Med. 2010; 11:735-42.
36. Weissbluth M, Poncher J. Sleep duration and television

viewing. J Pediatr. 1981; 99:486-8.
37. Khalsa SB, Jewett ME. A phase response curve to single bright light pulses in human subjects. J Physiol. 2003; 549:945-2.
38. Campbell SS, Dijk DJ. Light treatment for sleep disorders: consensus report. III. Alerting and activating effects. J Biol Rhythms. 1995; 10:129-32.
39. Thome S, Dellve L. Perceived connections between information and communication technology use and mental symptoms among young adults—a qualitative study. BMC Public Health. 2010, 10, 66.
40. Hauri P, Fisher J. Persistent psychophysiologic (learned) insomnia. Sleep. 1986; 9:38-53
41. Vickie Rocco, Posture Perfect - Smartphone Use Affects Spinal Health, Family Features
42. Editorial Syndicate Feb 20, 2015
43. https://www.sleep.org/articles/ways-technology-affects-sleep/
44. Mari H, Stale P, Sleep and use of electronic devices in adolescence: results from a large population-based study, Epidemiology,