

# Adolescents' Screen Time & Usage of Electronic Devices: Exploring their Digital Connections

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## Abstract

Present era is an era of technology and digital push from the past one year is evident in our day to day life. Adolescents have become addictive to digital screens especially after their online teaching during Covid- 19 that they cannot imagine their lives without it. There is a shift from the physical activities to digital activities in everyone's life especially young adolescents. The use of smart phones, tabs, laptops etc. by adolescents have not only affected their physical growth but also affected their social, psychological and health life. The current research paper explored the usage of digital screens by adolescents. The findings of the paper are based on empirical study conducted in the city of Chandigarh. The data revealed that on an average adolescents spend 4 hours on digital screens in a day and give least priority to physical activities. The foremost requirement of present time is to keep adolescents busy in activities other than digital screens that not only satisfy their physical/psychological needs but also help them to stay physically and mentally healthy.

**Keywords:** Adolescents, Digital Screens, Cyber Society, Real Society, Social Life

## Introduction

Adolescents keep themselves engaged in various forms of digital screens be it smart phone, computer, laptop, tab etc. It provides them a platform to remain connected with the relatives, friends, overseas friends and the whole world. They have become active on the social media as the number of users are growing day by day. Also, they are using the new channels of connecting and communicating with the whole wide world. But, is it safe to spend long hours with digital screens? The obvious answer that flows from the question is 'no'. But at the same time, Change and progress that has happened in the digital world was not possible otherwise. It has positively affected human lives in many ways and it is also accompanied by lots of challenges as well. There are many studies by the medical practitioners and psychologists that highlight the media effects are apparent on the physical health of the adolescents. Social Scientists are also trying to assess the effects of media. American Psychological Association published a report in 2011 entitled 'Social networking's good and bad impacts on kids' and made mentioned that the teenagers get fascinated towards smart screens/social media very easily. The number of teenagers who use social media sites on a variety of digital screens has increased considerably in the last five years. The most widely recognized work in this area is done by Sonia Livingstone. In one of her articles, it is mentioned that the continuously evolving information and communication technology has proved to be beneficial which engage children into various activities such as communication, educational, recreational, entertainment etc. (Livingstone et.al. 2011). Though the vast media devices have been proved to be useful for children but many risks are associated with over usage of digital screens. The various risks associated with over usage of digital screens need to be addressed urgently to avoid its ill effects on adolescents. There are many shows/programmes/video games that are available on television, YouTube videos, online channels, online short movies and documentaries, which have adverse impact on the health of children as the content is not fit to be watched by the children. The detailed research done by The American Academy of Pediatrics, 2018 has shown that the violent shows/programmes/video games led to Belligerence /

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oppressive behaviour, desensitization, incubus, etc. among children.

#### **Theoretical Perspective**

Time displacement theory suggests that as new forms of activities being added in one's life, tends to replace the older activities. New activities are mostly technological and cover information and communication technologies such as Internet and television. Maxwell McCombs addressed a phenomenon called displacement which is popularly known as Displacement theory. There are three kinds of displacement that are discussed by researchers in displacement theory. Time displacement, functional displacement and social displacement. Maxwell said the people spend more time on one media, less they spend on other mediums. Not only people spend less time on other mediums but they curtail other activities also, there is less of meeting friends and relatives, Less on physical activities, etc.. All the activities are not same in nature and function. Those activities will be displaced that can satisfy the same needs but less effectively share the same physical space but provide less satisfaction, are difficult to be modified and low in priority (Neuman 1991).

#### **Empirical Studies**

##### **Media Exposure leads to Dietary Changes, Decreased physical activity and Obesity**

A systematic review of the previous studies reported that there is moderately strong relation of screen time with increased risk of obesity, poor habits of healthy diet, reduced well-being, nervousness, behavioural issues, disturbed sleep pattern, indecent cognitive development, and depressive symptoms (Stiglic & Viner, 2018). A study conducted by Thomas, N. et al. in 2017 revealed that over exposure of digital screen is one of the reasons of increasing obesity in children and adolescents. They increased eating while watching digital screens. It revealed that influence of screen media is such that it reduced sleep time among children and adolescents. Bickham, et. al. (2013) observed adolescents for a week. The researchers measured height and weight of adolescents at the same time they noted their time spent on digital screens i.e. TV, smart phones, laptops, computer, video games etc. The researchers found that the adolescents who spent more time on digital screens had increased risk of obesity and higher body mass index. Adolescents between the ages of 13-15 years were observed for one week to check the association of digital screens and Body Mass Index. Weight and height of adolescents were measured along with the time spent on digital screens i.e. TV, computer, video games etc. The investigators reported that longer time spent on digital screens is directly related to higher BMI and increased risk of obesity (Bickham, et.al 2013). The increase time in watching TV, playing video games and other electronic gadgets were found to be associated with increase intake of food with low quality of nutrition. The adolescents who were spending more time on gadgets took less fruits and vegetables. From all the digital screens, TV was found to be most associated with the changes in dietary habits in adolescents (taking food of low quality of nutritional value) (Falbe,

et.al. 2014). Kenney and Gortmaker (2016) assessed the associations of youth use of television and other screen devices (including smart-phones and tablets) with obesity risk factors among 24,800 US high school students. The results of the study showed that approximately 20% participants used other screen devices (i.e. computers, video-games, smart-phones and tablets) for more or less than 5 hours daily, which was related with all obesity risk factors (i.e. daily sugar-sweetened behavior consumption, inadequate physical activity and inadequate sleep) for both boys and girls. Further, it was revealed that watching TV for more or less than 5 hours daily related with daily sugar-sweetened behavior consumption and obesity among both boys and girls, and with physical inactivity among girls but lower physical inactivity among boys.

Thomas, N. et al. (2016) studied screen media exposure and obesity in children and adolescents. The study revealed that screen media exposure leads to obesity in children and adolescents. It revealed that exposure to high calorie, low nutrient food and beverages through media influenced children's preferences, consumption habits, purchase requests and reduced sleep time. Contrary to this some evidences also suggested that interactive media use helped in improving eating and physical activity among children. Huang & Salmon (2012) studied correlates of physical activity and screen-based behaviors in Chinese children. Physical activity and screen-based behaviours were self reported among 303 children. It was found that participation in school team and self-efficacy was positively correlated with the physical activity in boys. Unexpected association of self-efficacy for physical activity and internet use/e-games was found among girls. Video games consoles and physical activity was also found to be positively correlated among Chinese girls but not for boys. School sports were found to be significant correlate for physical activity among children between the age group of 13-18. Stiglic & Viner (2018) systematically reviewed the previous studies to know the effects of screen time on children and adolescents. The reviewers found that there is moderate strong association of screen time with obesity, less healthy diet habits, poor well-being, anxiety, behavioural issues, less sleep, improper cognitive development, and depressive symptoms.

##### **Gaming and Impact on Behaviour**

An investigation carried out by Anderson & Bushman (2001) found positive association of violent video games with heightened level of aggressions among young adults and children. The study also showed negative association between prosocial behaviour of children and violent video games. The study highlighted that exposure to violent video games posed a public-health menace to children and young adults. Sebastian (2010) concluded that exposure to comics containing violent content is putting the prospect generation into danger. It is also making them vulnerable to violent behavior, social segregation, and dejection and they are becoming less sympathetic towards the feelings of others.

## Time Spent on Screens and Personal Possession of Devices is Increasing

A Saudi Arabian study disclosed that due to time displacement, internet has led to changes in social relations significantly. Most of the respondents said that there were no changes in their social attitude but excessive use of internet had impacted their acceptance of cultural norms and social relationships (Alolyan 2015). Roberts (2000) explained that adolescents aged between 8-18 years are exposed to media for more than 7 hours per day. 65 percent of this age group (total 2065 adolescents, including age group 14-18 years) owned TV and 23 percent had computer in their bedroom, while, 15 & 9 percent of them had premium cable connection and internet access, respectively. The research highlighted that 47 percent of the adolescents belonging to 8-18 years age- group had video game player. At the same time, majority of them possessed audio devices (Radio 81%; Tape player 74%; CD player 64%) in their bedroom. It was probed that they are exposed to media for more than 8 hours per day, of which, they spent most of their time watching TV (3.37 hours), then on audio devices (47 minutes). Of their total media time, they spent almost 30 minutes on playing video games and computer, each. It was concluded that on an average, 88 percent of them watch television, whereas, 48 percent adolescents used computer at home or in school. There were around 30 percent of 8-18 years old, who watched TV alone and only 2 percent of them watch TV in parent's presence. According to Roberts et. al. (2004), children between the ages 8 and 18 spend an average of over one hour each day in recreational internet use. Adolescents are online more than any other age group (Subrahmanyam et al. 2001). Canadian Statistics of the year 2004 indicate that the number of children accessing the internet as well as the amount of time spent online is steadily increasing.

## Developmental Issues

Healy (1998) argued the need for young children to have human support and verbal interaction; the use of computers was damaging to young children's development and, therefore, their learning. Przybylski and Weinstein (2017) examined adolescents in United Kingdom to see the relation of digital screen use with mental well being. The authors found that adolescents use digital screens for more time during weekend than the weekdays. Non linear relationship was found between digital screen use and mental well being of adolescents. The authors further said that moderate use of digital screens by adolescents is not harmful rather benefit them as they remain connected to the whole world though they suggested less use of digital screens for adolescents. In the last, they recommended rigorous investigations to know the relationship between digital technology and health of adolescents.

Victor (2017) conducted a study to know the effect of media on psychological health of adolescents. The author found that adolescents who regularly use social media make new friends, get along with their parents very well and stay happy in schools. On the other side, lack of online friends and

peer-rejection lead to depression and poor mental health. They easily get trapped in cyber bullying. Adolescents who like violent media show aggressive behaviour in real life too. The author highlighted the need of awareness among parents/caretakers, teachers and society for working together to discuss the harmful effects of media with adolescents. They also need to monitor the activities of adolescents while they use digital screens.

The previous studies had shown that the digital screens used by adolescents give them immense knowledge and help them to stay connected with the people but at the same time they are ignoring their health and ruining their social life. The investigators of different researchers had suggested that parents, teachers and guardians should teach adolescents about the purposeful use of digital screens and make them busy in such activities which not only help them to stay fit physically but mentally too.

## Research Gap

With the advent of new media technologies, there is lack of availability of systematic study on this issue. Majority of the available studies on this subject are on International context. There is hardly any Indian study that covers such crucial age of 13-18 years , their patterns of using different screens and new media devices.

## Significance of the Study

Adolescents have immense energy and creativity skills which can change their life as well as of the nation for better future. They have ideas and power that can make living healthy and meaningful. But in present times, the teenagers are spending their precious time on different types of digital screens which is not only hampering their growth but also effecting nation at large. The time has come not to ponder upon the bad/ill effects of digital screens on teenagers/adolescents life but to take necessary steps to make their lives more fruitful and healthy. The study will help to understand what type of digital screens are being used by adolescents in Chandigarh along with the content accessed by them and its effect on their overall health and social life. What type of digital screens adolescents use? How much time adolescents spends on different types of digital screens.

## Aim of the Study

The present study aimed at exploring the nature and usage of digital screens by adolescents.

## Objectives of the Study

1. To explore the use of digital screens by adolescents
2. To see how much time adolescents spend on digital screens
3. To check the content accessed by adolescents on digital screens

The study was limited to Adolescents between the ages of 13-18 were included in the present study. The study was delimited to the effect of digital screens on Health and Social life of adolescents. It was further limited to the area of Chandigarh..

### Hypothesis

1. The usage of digital screens is likely to be different in case of boys and girls.
2. More number of digital screens possessed by adolescents is likely to increase their usage of digital screens.

### Methodology

The sample of 200 adolescents was selected purposively from the Government Schools of Chandigarh. The students of age group 13-18 were included in the current study. There were 99 boys and 101 girls in sample.

Investigator kept in mind the major purpose of the study and with the help of previous literature, developed a detailed Interview Schedule for the collection of the data. Due permission from the District Education Office was taken. The students were selected purposively from the age group 13-18. First of all, the researcher built up rapport with them and then the students were made aware about the purpose of the study. Both quantitative and qualitative responses of the respondents were noted on the specified space given in interview schedule by the researcher.

### Results and Discussion

Majority of children had television and smart phones at home. More than 90 per cent students said that they had smart TVs at their homes. 11 adolescents i.e. eight boys and three girls had personal Television sets in their rooms. 192 adolescents used smart phones for different types of works e.g. listening music, working on social media, playing video games, chatting with friends/relatives etc.

**Table 1.1 Electronic Gadgets in Personal Possession**

Digital Screens	Boys	Girls	Total
TV (LC/LED)	8	3	11
Smart Mobile Phone	36	32	68
Computer	26	18	44
Laptop	44	38	82
Virtual Reality Devices	16	6	22
Digital Assistance System	5	3	8
Smart Watch	12	4	16
Ipad	12	4	16
Mp3/Mp4 Devices	4	2	6

(categories are not exclusive)

**Table 1.2 Time spent by adolescents simultaneously on various digital screens**

Digital screens	1-2 hours		2-4 hours		4-6 hours	
	Girls	Boys	Girls	Boys	Girls	Boys
TV	21	23	71	56	8	20
Mobile/Tablet	22	2	76	2	3	95
Computer/laptop	23	29	28	45	1	2
Audio-Video Devices	49	77	1	2	1	10

(categories are not exclusive)

**\*(Audio video devices included Mp3/Mp4 devices, Bluetooth devices, music devices, video games etc.)**

On an average adolescents spent more than four hours on digital screens be it TV, smart phone, computer, laptop etc. 48 per cent boys spent 4-5 hours daily on smart phones for playing video games whereas only 11 per cent girls spent 1-2 hours on smart phones for the same. 43 per cent girls used

68 adolescents i.e. thirty six boys and thirty two girls had their personal smart phones. 22 per cent adolescents had their personal computers for doing different type of activities viz., leisure, educational, entertainment etc. 22 per cent boys and 19 per cent girls had their personal laptops. 8 per cent boys and 3 per cent girls had personal virtual reality devices in their houses. Five boys and three girls had digital assistance system e.g. Alexa, Samsung mini etc. in their possession where as six per cent boys and two per cent girls had smart watches. 6 per cent boys and 2 per cent girls had Ipad and only three per cent adolescents had Mp3/Mp4 devices with themselves.

The possession of digital screens is a very significant indicator of the usage of media screens by young children. Our sampled population was possessing variety of screens at home. The presence of Television and smart phones were seen in almost every household. This shows the conventional media television is still very popular and present in all the houses. Cell phone, smart phones with Internet connectivity has taken huge strides and has reached everywhere. A few respondents also mentioned that they possess their personal televisions and phones. 68 respondents admitted that they possessed their personal phones and rest was using their parents' smart phones. Respondents mentioned that they used it chiefly for entertainment purposes. 22 per cent respondents had personal Laptops and same number had personal desktops. This shows that parents have provided electronic gadgets as these are considered important in today's time. Another trend that is visible from the data is the possession of various virtual devices by adolescents. These are luxury gadgets and are used for entertainment purposes. Our respondents were using different kinds of devices to keep them informed, connected and entertained. One thing that comes out of the data is the availability and usage of various kinds of digital devices by young population. As and when new device gets launched in the market, young population is the first one to explore and buy. Some of the boys respondents also mentioned that they watch youtube videos to keep them informed about the latest in technology. Another area that needs investigation was the time spent by adolescents.

digital screens about 2-3 hours daily for educational purpose whereas only 23 per cent boys used digital screens about 1-2 hours for educational purpose. 51 per cent boys and 39 per cent girls used digital screens about two hours to listen the music on smart phones/computers /laptops etc. 74 per cent

adolescents spent averagely three hours on social networking sites like facebook, snapchat, twitter, whatsapp etc. 79 boys and 63 girls spent nearly 2 hours daily on Youtube.

It is commonly believed that excess of anything is not a good thing. How much to watch is never defined nor one agrees on any instruction on this. Abovementioned data on this aspect clearly reveals that all the respondents were using different screens for 4 hours on daily basis. This is time spent on screens. Screen time is the time which one spends interacting with screens. There are studies that show that the time spent on other digital screens has increased and TV watching has fallen. Technology use patterns have become diverse, children are seen using wide range of technologies like smart phones, digital MP3 and MP4 etc. None of the students had preference for Radio. The use and preference is understandable as these do not perform the activities which other devices offer.

Digital technology can both help and harm children. Our respondents were still not aware of the

potential benefits and the harm it can have on their online and offline life. As mentioned above they were mostly engaged with entertainment purposes. Girls were using the devices for educational purposes whereas boys were using it more for watching youtube videos, listening to music. Another very popular activity mentioned by adolescents was 'Net Surfing' or browsing. This shows that adolescents had no specific aim in mind while browsing the net but were using it without any purpose and spending maximum of their time in moving from one site to another. This has been possible because the smart digital device which they possess is easy to carry and use anytime of the day and anywhere. From the above mentioned data it is apparent that adolescents used various digital platforms throughout the day and were spending good time which was referred as 'screen time'. It is also interesting to know that if respondents were using it for entertainment purposes, what kind of programmes were they watching. Below is the list of programmes adolescents watched on different devices and it included their screen time.

**Table 1.3 Channels and Content Accessed via Electronic Devices**

TV Channel/Content	Boys	Girls	Total
Star Plus	58	44	102
Zee TV	33	37	70
Sony	20	63	83
Colors	56	22	80
Zoom	12	17	29
Mtv	29	5	34
Cartoon	45	41	86
Disney	39	41	80
Movie Channel	47	37	84
Discovery	17	13	30
History	30	42	72
News	25	30	55
Rajya Sabha	23	22	45
Sports Channel	9	4	13
Social Media Sites	89	70	159
Video Games	93	78	171
Music App/Channel	45	31	76
Educational App/s	79	63	142

**(categories are not exclusive)**

More than 50 per cent girls like to watch daily soaps on different channels e.g. chhoti sardarni, yeh rishta kya kehlaya hai, yeh un dinon ki baat hai, kundli bhagya etc. Girls like emotional daily soaps but twenty per cent girls reported that they like action films e.g. baaghi, uri-the surgical strike, bahubali, manikarnika etc., video games e.g. Barbie doll, call of duty, halo etc. and reality shows like emotional atyachar, roadies etc. Girls also liked to watch Fashion TV. Boys had liking towards video games e.g. PUB G, candy crush, car racing, GTA 4/5, call of duty etc. The video games played by boys contained action or violence content. Some boys also liked reality shows like Indian idol, emotional atyachar, roadies, bigg boss, splitsvilla etc. 11 per cent boys and 18 per cent girls liked spiritual channels e.g. aastha, sanskar TV, Bhakti TV etc. 39 per cent boys and 47 per cent girls used digital screen for information and news channels e.g. Kaun banega crorepati, Aaj tak, ABP News etc. 89 boys and 70 girls access social media for connecting with relatives,

friends and overseas friends. They share videos, images, recipes etc. on social media. Some adolescents also reported that they indulge in sexting and talk about sexuality with overseas friends via social networking platforms. More than 30 per cent adolescents used music apps like saavan, gaana, wink music etc. for listening different types of music. Mostly boys had liking towards rock music and girls had liking towards soft and romantic songs. More than 70 per cent adolescents used vedantu, BYJU, kindle, unfold U, top rankers etc. apps for educational purposes. Only 4 per cent adolescents reported that they accessed pornographic content on smart phones/computers/laptops etc. via you tube and social networking sites. Out of the total respondents, 4 per cent reported using porn content via different digital screens. It is important to mention here that the pornographic content is not allowed by children below 18 years of age. Our respondents studying in different schools reported That they watched the porn content. Also, it was mentioned that that they got to know

about this content from their friend and also the pop ups appeared on their screens that connected them to this content.

Digital screens were being used by adolescents for education purposes were revealed by 70 per cent of our sampled respondents. They were using different applications for the same. Social media usage was another activity with which the young adolescents indulged. They were communicating and connecting with their friends and relatives. Many respondents mentioned that they liked seeing profiles of others, they love peeping into others pictures. It seems cyber society has offered sophisticated medium of stalking which one prefers and loves to see. It has become one of the popular time pass activity. Whether respondents personally possessed digital screens or not but they were hooked on to the screens. Music was another area which was responded by 30 per cent respondents and they had downloaded special musical Apps for the same on their digital devices. Kind of content accessed by adolescents clearly depicted the kind of impact digital screens had on young adolescents. Gender differences were clearly pointed out in the kind of music and kind of apps being used by both boys and girls.

### Hypothesis

The first hypothesis that the usage of digital screens is likely to be different in case of boys and girls are incorrect as our respondents used various screens irrespective of their gender. Both boys and girls were using variety of technological devices.

The second hypothesis that more number of digital screens possessed by adolescents is likely to increase their usage of digital screens is found to be true. As the number of gadgets possessed by them increased the amount they spent with devices also increased.

How much is screen time not harmful for young population is the moot point here as respondents were using it for more than 4 hours a day. In the other media researches on adolescents and time spent on screens, they considered both positive and negative effects of technology (Neuman 1988). Grondin (2010) mentioned that people are not trained at perceiving the time they spend on screens and there is inaccuracy in self report judgments (Boase & Ling 2013). When we see the data in current study, respondents mentioned their usage of 4 hours in day, it is highly likely that the respondents would be inaccurate in their judgments. As the pull of cyber society is very strong and the activities are very engrossing that one often doesn't remember any kind of limits. Schharkow (2016) too reported that heavy internet users underestimate the amount of time they spend online whereas infrequent users over report this behavior. The presence of digital devices is so powerful that they one can hardly calculate the time one spends with it. The number of devices and applications one is using is increasing day by day which suggests that the chance of technological addiction and various health and social effects are multiplying. We really need to look into this phenomenon and lifestyle of adolescents where

technology is not only dominating but is present in a very big way. Entertainment, education, meeting friends and all other unimaginable activities are happening at the virtual place. We need to think and deliberate on the bombardment and the risk it has created for the real society.

### Conclusion

The study was aimed at finding out the time spent by children on various electronic devices and the kind of channels and content accessed by them. The relationship of time spent is directly made out in the kind of content accessed by children under the displacement thesis and Social Learning theory. As the time spent on digital devices and entertainment programmes is increasing, time spent on other activities is reduced. The other activities include physical activities, education, socializing with friends and family members, etc. Children's presence on social media is increasing and it has become difficult to quantify the time they spend with various devices. Adolescents' everyday interaction with digital technology especially via social networking sites seems as an escape from the real life. The time that children used to spend on physical activities and socializing with others is hijacked by technology. Their pastime activities too revolved around digital devices. Using Digital devices is considered a pleasurable activity and for seeking pleasures, children indulged into variety of content which in turn keep them away from the pleasures of real life. Their increasing presence on the fantasize world is an alarming proposition where the stakeholders need to seriously think the risks and benefits of the cyber society for the young population.

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