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## Digital Advancement and its Impact on the Health of Adolescents

**ORIGINAL ARTICLE**



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### **Abstract**

*This study aims to illuminate the impact of digital advancement on adolescent's life. The main focus is on different domains of health including physical, social and mental health. This paper enlightens that how excessive usage of smart devices is impacting the physical health, social health, mental health and dietary lifestyle of adolescents. Digital Advancement have changed the society a lot and have impacted people especially adolescents. Though today's adolescents are more advanced and digital friendly than their previous generation but physical and mental decline is also a brutal fact that has engrossed adolescents into its grip. The need of the hour is to limit the digital usage among adolescents and protect their health. Different lifestyle practices such healthy diet, physical exercise, social interaction and getting sufficient sleep helps adolescents to remain free from different health ailments but these healthy activities are no longer daily activities and as a result the health and well-being of adolescents are affected.*

### **Key Words**

*Impact, Smart devices, Technology, Digital advancement, Health, Adolescents.*

## **Introduction**

Today's world is an era of rapid development where there is constant evolution of technologies. Evolution in the field of technology and its multifaceted function has led to its inclusion in each and every sphere of life. As man developed, his needs increased. To fulfil the need, searches were done which resulted in inventions of technologies. There has been constant invention in technology starting from IBM 650, ENIVAC etc in first generation computers to present day i.e. fifth generation computers such as Desktops, Laptops, Tablets, and Smartphone etc. Digital devices of 21st century are portable and small in size and it is equipped in such a manner that it can even understand the human language. Smart devices are one of the innovations of digital technology. The different kinds of Smart devices that are more commonly used by adolescents are smartphones, smart TV, smart watch, smart speakers, tablets, computers and laptops. Health whether physical or mental is an integral component of human body that underpins our individual and collective abilities to make decisions, build relationships and shape the world we live in. The beginning of this collective abilities starts from childhood. Society as compared to earlier have evolved drastically especially in terms of children. There is a shift in

parenting method, as parents are more attracted towards living and giving a luxurious life to their children, where they forget about the impact that it will have on them as well as on their children's life.

WHO defines 'Adolescents' as individual in the age group of 10-19 years of age. Children are the future of the nation and torch bearer that will continue the legacy of the past and present. Therefore, their being healthy, intelligent, well mannered, social, well educated and skilled is considered very important. Earlier the places for education for children were temples, pathshalas, tols, chatuspadis and gurukuls, the classes were used to be held in forests in pleasant natural environment full of freshness and decent aura. The method of Teaching was largely oral but with the passage of time it switched to books and notebooks. Now traditional method of teaching is being replaced by modern teaching method in the closed class room. Today students are learning different concepts through various online platforms like YouTube, Coursera, Udemy, etc. In earlier times talking while having meal was considered disrespectful but now glaring at screen and taking meals have become common phenomenon among adolescents. Adolescents use a wide range of social media platforms such as Instagram, Facebook, Twitter, Snap chat, YouTube and various applications for entertainment, communication, doing schoolwork, and engage in activities of daily living. Smart devices such as Smartphone, Smart TVs, Tablets, Laptops, etc have engrossed adolescents so much that these smart devices have become a part of their life. It has been found that use of smart devices have become over addictive at present time, the reason behind it is that most students are addicted to different applications on the smart system (Kibona L. et al., 2015). Earlier entertainment was limited to radio and television but now with the innovation of cable networks, satellite and internet people have reach to variety of entertainment activities. The leisure activities of children and adolescents are also affected by technology. The advancement in the entertainment industry has brought variety of options for fun and to spend time. Now there is a trend of watching online movies from online steaming websites. Taking subscriptions and viewing movies, short movies, serials, web series etc., on Smartphone, tablets, laptops, smart TV etc through OTT platforms such as Netflix, Amazon, Hotstar, etc., has received popularity among adolescents. Adolescents today are the most digitally connected generation in history (Odgers, 2020). The adolescents do not distinguish between the benefits and disadvantages of modern technology. According to American Academy of Child And Adolescents Psychiatry (2020) the recommended screen time is 2 hours for the children aged 6-17 years of age and 2-4 hours for the teens and adults of 18 year above age group but it is seen that adolescents exceeds the recommended screen time and they even lose the track of time as a result of which they miss out on important activities related to schools, colleges and other daily activities. Adolescents today spend roughly eight and a half hours a day on digital media which does not include its use for the schoolwork (Rideout et al., 2021). Healthy activities such as exercise, adequate sleep, and face to face social interactions are no longer daily activities and as a result of which health and well-being of adolescents are affected (Rose, et al., 2022). Technology offers many opportunities for children to play, explore, and learn (Linebarger & Piotrowski, 2009) but it this technology that is also posing threat to adolescents. A study by Pew Research Centre survey of nearly 750 children found that 45% of children aged 13 to 17 year old are online almost constantly and 97% uses social media platform, such as YouTube, Facebook, Instagram or Snapchat.

The technology develops self-confidence in adolescents as they are able to overcome new challenges but at the same time we cannot deny the negative aspect associated with its excessive use. Digital advancement has led to children's isolation, if parents do not take care of their children when they interact with technology leads to adoption of sedentary lifestyle in children. Children's access to unsuitable content via smart devices has exposed children to apps that are not suitable for them and the content to which they are exposed through different social media and social networking sites neither contribute to their learning of new things nor help them in skill development. More an adolescent is attracted towards digital world the more they are getting far from their family. Adolescents are so much active on social media sites these days that it is limiting them from outdoor activities. Unchecked use of digital technology is deteriorating the one or more domains of development

of adolescents. Use of mobile phones, Televisions and other devices for long hours has caused health hazards such as eye strain, musculoskeletal problems, hypertension, etc (Rather, 2019).

### **Impact on Physical Health**

According to WHO, children and adolescents should do at least on an average of 60 minutes per day of physical activity comprising of moderate to vigorous physical activity across the week and should also do physical activities and exercise that helps in maintaining healthy bone and muscles. But today adolescents are seen spending a lot of time with the smart devices and do not bother to do exercise and other physical activity which in turn is opening the door for various lifestyle disorders. Different studies have found that exposure to screen for longer duration of time is detrimental for eyes which could lead to eye strain, eye pain, blurred vision and dry eyes. Studies have found that increased duration of screen time is a major cause of myopia among adolescents. In fact the studies have found that cases of myopia has increased due to excessive use of smart phones and exposure to digital screen and it is predicted that by 2050, 50% of the world population will be myopic (Holden et al., 2000). There has been increased risk of musculoskeletal discomfort and bodily discomfort due to exposure to handheld electronic games among children (Lui et al.,2011).Excessive time spending on screen has been linked with higher BMI (Tremblay et al., 2011), lack of movement in adolescents (Hassan et al.,2019) and it is also related to back pain, neck pain and shoulder pain (Shan et al.,2013) in adolescents, obesity in children (Subrahmanyam et al., 2000). Excessive use of smart devices interferes with the sleeping pattern of adolescents. Blue light from the screen of smart devices interfere with the circadian rhythm which is due to less production of melatonin at night and interferes with the disturbed night sleep of adolescents. Daytime and bedtime use of electronic devices is related to change in sleep pattern, which results in increased risk of short sleep duration, long sleep onset latency and increased sleep deficiency (Hysing et al 2015).Adolescents are so much engrossed in their smart devices that they forget the proper posture which is suitable for their body. Hours spent on mobile phones, tablets, and laptops are leading to Teen Tendonitis that is pain in hand back and neck due to poor body posture (Smith 2012).

### **Impact on Social Health**

Earlier there used to be face to face communication in social relations in which there was closeness and love where parents, children and other family members used to spend lots of time with each other in discussing their daily activities and problems. These all activities used to be happened in face to face interaction. But today it has decreased. The communication and closeness that existed between the family members is coming to an end and the method of communication has been taken over by phone and social sites. Today adolescents do not mingle with their relatives, neighbours and society members and thus hampering the social structure, if this continues then the social structure itself will become weak. Excessive use of smart devices is impacting the social aspect of adolescents (Hassan et al., 2019). Increased screen time is leading to social isolation (Ray and Jat 2010). It has been found that individuals who send a large number of texts develops “text message dependency”, in which there is increased worried about why they have not instantly received a reply to their message, this causes increased feelings of isolation or neglect (Lu et al.2011).

### **Impact on Mental Health**

Adolescents are constantly using different Smart devices which in turn are impacting their psychological health negatively (Hassan et al., 2019). Excessive use of smart devices is a risk factor for depression in adolescents (Lemola et al., 2015; Ray & Jat 2010), excessive use of the calling and texting features of mobile phones have been linked to depression, anxiety and stress (Jenaro et al. 2007). Access to Digital devices which are given by the parents to their children for educational purposes serve as a distraction when left to them because most of the time they use it for entertainment instead of learning (Jacob et al., 2014). increased levels of anxiety, loneliness is linked with overuse of internet technology (Wu et al., 2016) and mobile phone use has also been related to tension, fatigue and dizziness (Al-Khlaiwi & Meo, 2004). Recently it has been observed that playing digital games causes Internet Gaming Disorder (IGD). According to Indian Journal of

Community Medicine and Public Health 2020 about 3.5% of Indian adolescents suffer from IGD. The symptom of this disorder includes -dejection, fear, irritation, inability to give up playing, unsuccessful attempts to quit gaming, continuing to play game despite of problems, deceiving family members or others about the amount of time spent on gaming etc. Cyber crimes against adolescents are also increasing in India and as a result of which adolescents are becoming the victim of cyber bullying. Cyber bullying is linked with higher levels of depression, low self-esteem, behavioural problems, substance abuse, and suicidal thoughts among adolescents. (Reid Chassiakos et al., 2016; Cooper et al., 2012 and Hinduja et al., 2010). India has the highest rate of cyber bullying worldwide, more than 85% of children in India have reported cyber bullying (TOI, 2023). Advertisements on different social networking site is one of reason for adolescent's indulgence in the use of substance of abuse such as alcohol, marijuana, tobacco leading to self harm and suicide (Daine et al.,2013).

## Impact on Dietary Lifestyle

Several studies have found that constant attention given to digital screen affects the food intake in adolescents. Fruits and vegetables are disappearing from the plate of adolescents and they are switching more on junk foods and fast foods. Healthy Juices are replaced by carbonated drinks. Eating while glaring at screen or playing mobile games has become a common phenomenon among adolescents as a result of this there is increased energy intake i.e. more food is consumed. There are two reasons behind increased energy intake, the first is that there is delay in normal meal time satiation that is the feeling of fullness and the second is reducing the signals of satiety from the previously consumed food i.e. children do not even stop eating despite of being already full (Bellissimo et al., 2007). Watching television or having eyes on screen while having food serves as a distraction from satiety signals and draws attention away from typical control over food intake.

## Conclusion

With every innovation pros and cons are associated; similar is in the case of digital advancement. Though smart devices are of immense importance in every individual's life but its excessive usage is posing threat to mankind especially the children and adolescents. Over exceeding the screen time and being surrounded by it every time has led to various health ailments. Thus it is important to limit its use and maintain balance between daily activities and digital and smart device use before these devices starts controlling us.

## Recommendations

1. Parents and their children should avoid the use of smart devices for sometime while they are together and motivate their children to play offline and outdoor games with them.
2. Every member of the family should keep their smart phones, tablets and other mobile devices away from them while they are having their meals.
3. While having meals parents should keep eye on their sons and daughters that their full focus is on their food not on their gadgets.
4. Parents and teachers should impart side effects of excessive use of smart devices.
5. Parents should strictly limit the screen time of their children and should periodically check the activities of their children when they are spending time with their smart devices.

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