

**TECHNOLOGICAL BASED DISORDERS INFLUENCE OF TECHNOLOGY ON ADHD CHILDREN (INDIA)**

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**ABSTRACT**

Growing technology influences children of this generation to a great level. Children spend several hours in front of digital devices like mobiles, iPad, laptop, etc. These technological advancement has an impact on the development of children. The benefits of technology on children is evident but the overuse of technology can lead to sedentary lifestyle, and causes behavioral and developmental issues. ADHD, attention deficient hyperactive disorder, is a brain disorder which is mostly innate. It is a brain disorder in which a child or individual shows patterns of inattention and/or hyperactivity. A child suffering from ADHD had difficulty sustaining focus, wanders off, lacks persistence, is disorganized, excessively fidgets, talks and are extremely restless. There is no cure for ADHD. The treatment for ADHD includes medications, psychotherapy, education and training or a combination of different treatment. With the advancement of technology ADHD children are given activities or games on digital platform to engage them. The aim of this paper is to compare the level of technological addiction and influence on the development of ADHD children. This is a comparative study i.e., there are two groups of children, i) children with ADHD and ii) children without ADHD. The samples are given the same questionnaire and different statistical tools are used to compare the extent to which technology influences these children. The population consisted of 15 children with ADHD and 15 without ADHD. All the samples belonged to different gender, caste, economic background and social background.

*Keyword:* ADHD, brain disorder, psychotherapy, hyperactivity, addiction

**INTRODUCTION**

Children typically spend several hours on digital devices. Even though technology have many positive effects, it effects the development and growth of the child. Over use of technology can cause behavioral issues, learning issues and developmental issues. When it is use limitedly if can help in increase of cognitive and social skills of the child but at the same time the parents and tutors must keep in mind that technology cannot beat hands on activities. With the advancement of technology, we are witnessing a change in the way children interact and play with each other. One of the major issues is that children refuse to go outside and play, which has caused a drastic increase in the rates of obesity. Due to the development of technology many children do not experience the world outside as they gain entertainment for their digital devices. They often do not go in the sun and hence have many skin infections and lack of vitamin D. Technology has also impacted their sleep and caused other diseases and disorders like, the blue light emitted from the screens of phones and tablets has said to have cause eye problems and headaches. It also regulates melatonin which is the sleep-wake hormone and hence the sleep cycle is also disturbed. Other than the impact on the body, technology also has an adverse effect on the mind. Children who often play video games or spend most of their time online have problem being attentive for a long period of time. They can't stay focused on one thing as on the internet they are used to being attentive to several things. Since kids now a days are exposed to high levels of technology they lose the ability to think creatively when a new concept is thought. These children also fail to develop meaningful emotional bonds and relationship with others, and since they spend most of their time on social media they are often diagnosed with low self-esteem and negative thoughts.



### **Attention deficit hyperactivity disorder:**

ADHD or attention deficit hyperactivity disorder is a brain disorder which is characterized by inability to pay attention and/or hyperactivity and impulsivity. Children with ADHD are get easily distracted, are unfocused and fail to follow instructions. These children due to their distractibility and behavioral problems are usually low on intelligence. They also talk relentlessly and are socially immature and indiscreet. They generally show social problems because of their hyperactivity and impulsivity. They have a hard time getting along with their parents as they fail to obey rules. Due to this hyperactive behavior they are often viewed negatively by their peers as well. Many people feel that children with hyperactive disorder are anxious but they are not. An associated disorder is specific learning disability. They show weakness in reading or learning basic subjects in school. This disorder is most common in boys when compared to girls and the symptoms are noticeable at the age of 8 and then it progresses. Another comorbid disorder is oppositional defiant disorder. The cause and factors of this disorder is still not known. It could be biological factors such as genetic inheritance.

### **Sign and symptoms:**

- Not listening when spoken to
- Making careless mistakes in school work, work or other activities
- Having problems withstanding attention while doing a task
- Not following instructions
- Losing things which are necessary for a task. Eg: stationery, books, etc
- Fidgeting or inability to sit in one place
- Running or being impulsive
- Being unable to engage in tasks quietly
- Nonstop talking

### **Treatment:**

- Behavioral therapy
- Cognitive behavioral therapy
- Medication
- Support groups
- Stress management
- Education and training

### **ADHD and technology:**

Children with ADHD tend to struggle with daily living activities like organizing, completing tasks, time management and failure to pay attention. Apps and computer programs can assist people with ADHD in these activities, by helping them to stay organized, reaching their goals, and avoid distraction. Technology can be aided in classrooms for better results. One study found that when ADHD children were taught math using a computer assisted instruction in math, student performed better and had increased on-task behavior. These children are more prone to getting addicted to video games. There is also a significant association between ADHD and internet addiction.

### **REVIEW OF LITERATURE**

**Bing-qian Wang, Nan-qi Yao, Xiang Zhou, Jian Liu and Zheng-taoLv (2017) Thr association between attention deficit/hyperactivity disorder and internet addiction: a systematic review and meta-analysis**

The aim of this study was to analyse the link between ADHD and Internet addiction (IA). A moderate association was found between ADHD and IA. Individuals with IA are more associated with severe symptoms of ADHD. Males are more associated with IA and there was no significant relationship between age and IA. The study also gave suggestions to the parents of those suffering from ADHD to keep close monitoring of their internet use.



**Daniel L. King and Paul H. Delfabbro (2012) Clinical Interventions for Technology-Based Problems: Excessive Internet and Video Game Use**

This paper explores the possible interventions for internet over use and video game addiction. There is no direct link between over use of internet and psychological disorders but still a number of addicts have used clinical treatment for over addition of internet and video games. The paper reviews critically the clinical treatment for technology-based disorders. They also throw light on the prevalence of these disorders in Western and Eastern countries.

**Huang Xiugin, Zhang Huimin, Li Mengchen, Wang Jinan, Zhang Ying and Tao Ran (2010) Mental health, personality, and parental rearing styles of adolescents with internet addiction disorder.** This paper focused on a comparison of personality profiles of adolescent males with and without internet addiction and to check if IA is associated with specific parental rearing behaviour. There were 304 subjects who completed three instruments. The results of this study showed that IA often occurs with mental symptoms and personality traits like introversion and psychoticism. Influence of parenting style and family functioning are important factors in developing internet dependency.

**Ju-Yu Yen, Cheng-Fang Yen, Cheng-Sheng Chen, Tze-Chun Tang and Chih-Hung Ko (2009) The Association between Adult ADHD Symptoms and Internet Addiction among College Students: The Gender Difference.** The aim of this study was to find the association between ADHD and internet addiction and which one of inattention, hyperactivity or impulsivity is most associated with internet addiction and whether gender makes a difference in the association between ADHD and addiction among college students. A total of 2793 were administered the test from over 8 colleges in Taiwan. The results showed that ADHD and internet addiction were associated. It was also found that attention deficit was the most associated with internet addiction followed by impulsivity. Furthermore, it was found that the association was stronger in females than in males.

**Kimberly Young (2009) Understanding online gaming addiction and treatment issues for adolescents**

This study points out that massive multi-user online role playing games are the fastest growing forms of internet addiction among children and teenagers. They show classic signs of addiction just like drug or alcohol addicts. They often become preoccupied by gaming, lie about their gaming habits, lost interest in other activities and withdraw from friends and family. This paper explores these addiction habits and its impact on the individual and his/her family. It also discovers the nature and cause for addiction.

**Soo Kyung Park, Jae Yop Kim and Choon Bum Cho (2008) Prevalence of internet addiction and correlations with family factors among South Korean adolescents**

This study focused on the prevalence of internet addiction among the teenagers in South Korean and explored the family factors associated with it. There were 903 middle and high school students who took part in this study. The results showed that these adolescents were at a high risk of addiction and need further assessment and interventions. Parenting attitude, family communication, family cohesion and family violence exposure were associated with internet addiction. the findings indicated that family plays an important role in preventing internet addiction.

**Ju-Yu Yen, Chih Hung Ko, Cheng Fang Yen, Hsiu Yeuh Wu, and Ming Jen Yang (2007) The Comorbid Psychiatric Symptoms of Internet Addiction: Attention Deficient and Hyperactivity Disorder (ADHD), Depression, Social Phobia and Hostility**

This study was conducted to find out the association between internet addiction and depression, ADHD, hostility and social phobia in adolescents. This study was also conducted to find the gender differences in internet addiction and the above mentioned psychiatric disorders. The study was conducted on 2114 subject, using a questionnaire. It was found that there was a high relationship between internet addiction and the above stated disorders. It was further found that male population there was a higher relationship between internet addiction and adhd, depression and hostility whereas in women population it was just adhd and depression.



**HeeJeongYoo, Soo Churl Cho, Jihyun Ha, Sook Kyung Yune, Seog Ju Kim, Jaeuk Hwang, Ain Chung, Young Hoon Sung, and In Kyoonyoo (2004) Attention Deficit and Hyperactivity symptoms and Internet addiction**

The objective of the study was to find the relationship between attention deficit-hyperactivity/impulsivity disorder and internet addiction. The population size was 535 elementary school children. The intensity of the internet addiction was found by administering the Young's internet addiction test and the ADHD by the DuPaul's attention deficit hyperactivity disorder rating scale. The ADHD group had a higher intensity of internet addiction compared to the non ADHD group. Hence there is a significant association between the two.

### **METHODOLOGY**

To compare the influence of technology on ADHD children and normal children.

#### **Operational definition:**

**ADHD:** Attention deficit hyperactivity disorder. It is a brain disorder which is characterized by ongoing patterns of inattention and hyperactivity/impulsivity which interferes in daily functioning or development.

**Addiction:** it is the act of being dependent or addicted to an object or substance.

#### **Plan:**

To administer a questionnaire to children of the age group 6-15years. The population consists of both children with and without ADHD and to compare the results.

#### **Data collection:**

**Primary data:** This study mainly delves on the primary data collected by the survey method for addressing and analyzing the issue. Information has been collected from the population through close ended questionnaire. A structured questionnaire has been made use. The questionnaire has 15 questions.

**Secondary data:** Secondary data is collected from various publications; websites, journals, etc.

#### **Variables:**

**Independent variable:** the nature of the questions given.

**Dependent variables:** the response of the samples.

#### **Sample:**

The questionnaire was given to 30 children out of which 15 had ADHD and 15 did not have ADHD. All the children belonged to different ethnicities, cultural backgrounds, schools, etc. The sampling technique used was snowball sampling or chain sampling or referral sampling. The population was restricted to Bangalore only. Generalizations can be at the macro level but enough care regarding the change in culture, attitude etc. of the groups where results have to be administered need to be taken care.

#### **Materials used:**

A close ended questionnaire was given to the subjects.

#### **Limitations:**

- i. Time was one of the main constrain.
- ii. The study was limited to Bangalore only.
- iii. Sample size (30 children)
- iv. Age group of the samples (6-15years)

#### **Scoring:**

- i. The responses of both the groups are noted down.
- ii. The responses are compared.

#### **Statistical tools:**

The constructed questionnaires were used for the survey purpose. The questionnaire comprised of close ended questions. The recorded observations of the questionnaire have been used





while data interpretation. Statistical techniques: Statistical techniques like drawing percentages for generalizations, use of table for tabulating the primary data and use of graphs and pie charts for better pictorial representation of the analysis had been made use of.

**Procedure:**

The subjects were handed the questionnaire and asked to answer it. They were instructed to answer the questions individually and without over thinking. They were asked to mark the most apt option according to them.

**ANALYSIS AND DISCUSSION**

The aim of this study was to compare the influence of technology on children with ADHD and without ADHD.

**Table 1: responses of ADHD children on their learning preference.**

Reading	Watching videos	Writing	Audio learning	Doing online test
2	9	1	2	1

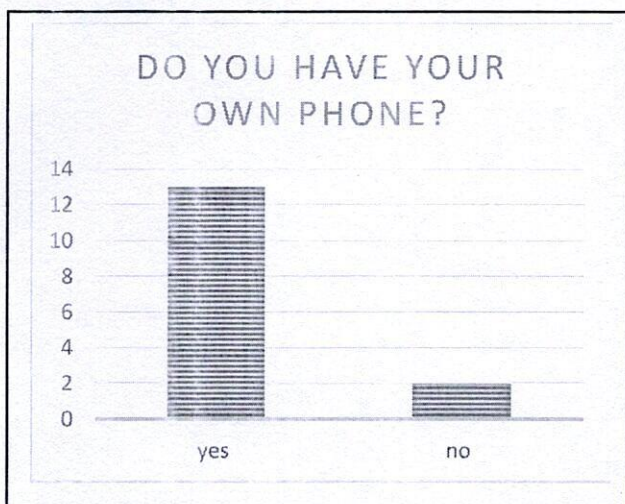
**Table 2: responses of non-ADHD children on their learning preference.**

Reading	Watching videos	Writing	Audio learning	Doing online test
4	9	1	1	0

Table 1 shows the responses of the children with ADHD on the best way they learn. The responses were found to be 2, 9, 1, 2 and 1 for reading, watching videos, writing, audio learning and online tests respectively. From the table it is evident that majority of them like learning by watching videos and the least is by writing or doing online tests. This could be because of the effect of the visuals present in the video. Videos have both visuals and audio hence it enhances the learning experience of the child. Since these children are easily distractible this method of learning helps them focus on their learning.

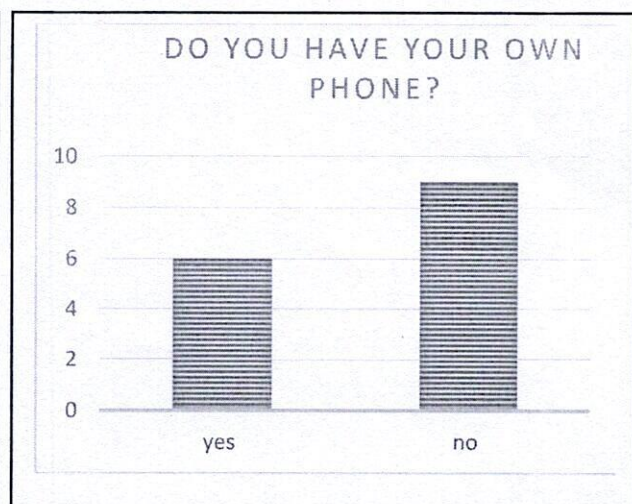
Table 2 shows the responses of the children without ADHD on their learning style. The responses were found to be 4, 9, 1, 1 and 0 for reading, watching videos, writing, audio learning and online tests respectively. From the table it is evident that majority of them like learning by watching videos and the least is by doing online tests.

Comparing table 1 and 2 it is found that the learning pattern of both ADHD and non-ADHD children are similar.



**Graph 1: responses of ADHD children**

Graph 1 shows the responses of the ADHD children when asked if they have their own phone. From the graph it is evident that majority of the children have their own phones. 13 children have their own phone and only 2 do not have their own phone.

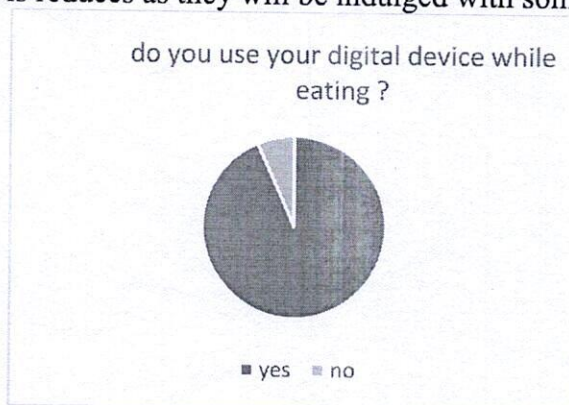


**Graph 2: responses of non-ADHD children**

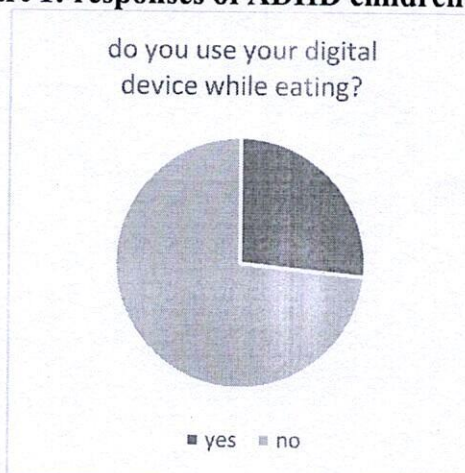
Graph 2 shows the responses of the non-ADHD children when asked if they have their own phone. From the graph it is evident that majority of the children do not have their own phone. 6 children have their own phone and only 9 do not have their own phone.



Comparing the two graphs it can be seen that more ADHD children have their own phone compared to non-ADHD children. This indicates that the parents themselves buy the children phones so that their hyperactive behaviour is reduced as they will be indulged with something.



**Pie chart 1: responses of ADHD children**



**Pie chart 2: responses of non-ADHD children**

Pie chart 1 shows the responses of the ADHD children when they were asked if they use their phones, tablets, iPad, etc., while eating. It is evident from the chart that majority of the ADHD children use their digital devices even while eating. 14 of the children use their phones and one doesn't use it while eating. This shows the parents allow these children to use it so that they do not throw tantrums and sit in one place and eat.

On the other hand, pie chart 2 shows the responses of the non-ADHD children when they were asked if they use their phones, tablets, iPads, etc., while eating. From the pie chart it is seen that majority of the non-ADHD children do not use their phone while eating. Only 4 out of the 15 use it. While comparing the two it is evident that ADHD children are more influenced by technology as they use it even while eating. The parents encourage it as it helps them avoid the hyperactive behavior of the children. From the analysis of the other questions it is evident that ADHD children are more involved and addicted to digital devices when compared to non-ADHD children.

### Conclusion

The aim of the study was to find the influence of technology on ADHD and non-ADHD children. The questionnaire was administered on 30 children: 15 with ADHD and 15 without ADHD. These children were of the age group 6-15 years. They were all studying in different schools and educational institutions. The results of the study show that ADHD children are more influenced by technology when compared to non-ADHD children.

- i. On an average it was found that majority of the ADHD children have their own phone. When compared to non-ADHD children, a greater number of ADHD children had their own phone.
- ii. When comparing the two groups ADHD children would use their phones even while eating when compared to non-ADHD children.



- iii. Hence on an average and generalization, it was found that ADHD children are more influenced by technology when compared to non-ADHD children.
- iv. From the secondary study it is evident that ADHD children are more prone to addiction of any form, and hence internet addiction is majorly found in ADHD children.

#### REFERENCE

1. Bing-qian Wang, Nan-qi Yao, Xiang Zhou, Jian Liu and Zheng-taoLv (2017) The association between attention deficit/hyperactivity disorder and internet addiction: a systematic review and meta-analysis, *BMC psychiatry journal*.
2. Daniel L. King and Paul H. Delfabbro (2012) Clinical Interventions for Technology-Based Problems: Excessive Internet and Video Game Use, *Journal of cognitive psychotherapy*.
3. HeeJeongYoo, Soo Churl Cho, Jihyun Ha, Sook Kyung Yune, Seog Ju Kim, Jaeuk Hwang, Ain Chung, Young Hoon Sung, and In Kyoonyoo (2004) Attention Deficit and Hyperactivity symptoms and Internet addiction, *Psychiatry and clinical neurosciences*.
4. Huang Xiugin, Zhang Huimin, Li Mengchen, Wang Jinan, Zhang Ying and Tao Ran (2010) Mental health, personality, and parental rearing styles of adolescents with internet addiction disorder, *Cyberpsychology, behaviour and social networking*.
5. James N. Butcher, Jill M. Hooley, Susan Mineka and Chandra B. Dwivedi (2018) ABNORMAL PSYCHOLOGY 16<sup>th</sup> edition.
6. Ju-Yu Yen, Cheng-Fang Yen, Cheng-Sheng Chen, Tze-Chun Tang and Chih-Hung Ko (2009) The Association between Adult ADHD Symptoms and Internet Addiction among College Students: The Gender Difference, *Cyberpsychology and behavior*.
7. Ju-Yu Yen, Chih Hung Ko, Cheng Fang Yen, Hsiu Yeuh Wu, and Ming Jen Yang (2007) The Comorbid Psychiatric Symptoms of Internet Addiction: Attention Deficient and Hyperactivity Disorder (ADHD), Depression, Social Phobia and Hostility, *Journal of adolescent health*.
8. Kimberly Young (2009) Understanding online gaming addiction and treatment issues for adolescents, *The American journal of family therapy*.
9. Leo Sang-Min Whang, Sujin Lee and Geunyoung Chang (2004) Internet Over Users' Psychological Profiles: A Behavior sampling analysis on internet addiction, *Cyberpsychology and behavior*.
10. Soo Kyung Park, Jae Yop Kim and Choon Bum Cho (2008) Prevalence of internet addiction and correlations with family factors among South Korean adolescents, *Journal of adolescent behaviour*.
11. Ricardo A. Tejeiro Salguero and Rosa M. (2002) Measuring problem video game playing in Adolescents, *The society for the study of addiction*.

#### Websites

1. <https://kindergartenprepchildcare.com/technology-impact-early-childhood-development/>
2. <https://medium.com/thrive-global/will-technology-ruin-your-childrens-development-663351c76974>
3. [https://www.huffingtonpost.com/cris-rowan/technology-children-negative-impact\\_b\\_3343245.html](https://www.huffingtonpost.com/cris-rowan/technology-children-negative-impact_b_3343245.html)
4. <https://www.nimh.nih.gov/health/topics/attention-deficit-hyperactivity-disorder-adhd/index.shtml>
5. <https://www.psycom.net/adhd-and-technology>
6. <https://www.mentalhelp.net/articles/adolescents-with-adhd-and-the-risk-of-internet-addiction/>
7. <https://www.psycom.net/iadcriteria.html>
8. <https://www.psycom.net/gaming-disorder>



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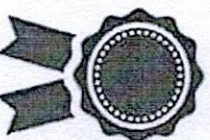
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