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A Review on "Addictions and its correlation with short term memory loss"

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Abstract- In the twenty-first century, not everyone has this type of time to work on anything. His history is progressing slower than his present. In this difficult environment, everyone is working to keep things stable. Nowadays, most of a person's life is spent online. All of the information was entered by everyone in less than a minute and a click. The Internet is the most important component of contemporary life. But he also makes regular use of the internet and a phone. Everybody owns a smartphone, which they all frequently use. Every person on earth has a cell phone that serves as their secondary identity. However, regular mobile device use and persistent internet access have an effect on human cognitive performance, especially memory function.

Keywords- ***Addictions, Short term Memory loss, Internet, Mobile phone, Human life, College students***

I. INTRODUCTION

Two other negative consequences of smartphone or internet addiction are an increase in loneliness and sorrow. Contrary to what would seem to be the case, losing yourself online won't make feelings of boredom, loneliness, or melancholy go away for good. Even while a computer, tablet, or smartphone can be a very helpful tool, excessive use of these devices can have a negative effect on relationships, employment, and education. If you discover that you spend more time on social media or playing video games than you do interacting with real people, or if you discover that you are constantly checking your messages, emails, or apps—even when doing so has a detrimental impact on your life—it may be time to reconsider how you use technology. [1,23] The term "short-term memory" refers to the memory processes in the brain that allow people to recall facts for a small period of time, usually up to 30 seconds. Trustworthy Source. Short-term memory builds a sort of "visuospatial" sketch of the information the brain has recently ingested and will later convert into memories. The short-term memory has a capacity of around seven items, according to some estimates. In order to permanently retain information for future retrieval, the brain can move information from short-term memory to long-term memory. Long-term memory doesn't seem to have a predetermined upper bound or maximum capacity. Long-term memory often connects information to rules, events, facts, and concepts, or to how a person uses them. The ability to recall little bits of information is referred to as short-term memory. Short-term memory loss can occasionally be a sign of normal ageing, but it can also indicate a range of mental and physical health conditions.If short-term memory loss interferes with someone's ability to function or quality of life, especially if it happens frequently or severely, they should consult a doctor. [5,6]

Causes of short-term memory loss:

1. Aging- A person's brain changes gradually over time as they get older, which can make them forgetfuler than they were previously. But according to research Trusted Source, memory loss is not a necessary element of ageing, and as people get older, their brains can continue to divide and connect new nerve cells.

2. Neurodegenerative diseases- Nerves in the brain and peripheral nervous system begin to degenerate and perish as a result of neurodegenerative illnesses. There are many neurodegenerative conditions that can impair short-term

memory. The following are a few of the most prevalent neurodegenerative conditions linked to short-term memory loss:

1. Alzheimer's disease
2. Huntington's disease
3. Parkinson's disease
4. frontotemporal dementia
5. Lewy body dementia
6. vascular dementia

3. Head injury- Numerous types of trauma can harm brain tissue, which may result in either temporary or permanent short-term memory loss.

4. Infection- Memory loss may result from a severe or persistent illness in the brain or other regions of the body. Examples include encephalitis and HIV.

5. Tumors- Short-term memory may be impacted by tumours, whether they are malignant or benign, as well as by other abnormal growths on the brain.

6. Stroke and cardiac arrest- Because the brain is deprived of oxygen during a stroke or heart attack, brain damage can result.

7. Medications- Many medications that impact brain functioning can cause temporary memory loss as a side effect. Some medications commonly linked with memory problems include:

1. cholesterol medications
2. antianxiety medications
3. anti-seizure drugs
4. tricyclic antidepressants
5. pain relievers
6. high blood pressure medications
7. Parkinson's drugs
8. sedative or sleeping medications
9. incontinence medications
10. antihistamines

8. Lack of sleep can make it harder for the brain to function. Temporary short-term memory loss may follow from this.

9. Chronic pain conditions- Some varieties of arthritis, among other chronic pain-causing illnesses, might result in brain fog, a collection of cognitive issues. People who have brain fog frequently forget things more easily, struggle to learn and remember new knowledge, and have difficulty accurately retrieving memories.

10. Epilepsy- Processing information, creating and storing memories, and recalling information can all be made more challenging by epilepsy.

The following are examples of smartphone addiction's impulse control problems:

- **Virtual connections.** Social media, dating apps, texting, and messaging addiction can advance to the point where online friendships are prioritised over in-person contacts. Everyone has seen couples sat next to one another in a restaurant talking on their iPhones. Even though the internet can be a terrific place to meet new people, get in touch with old friends, or even start romantic relationships, online connections are not a healthy alternative for in-person interactions. Because they usually occur in a vacuum, free from the duties or stresses of messy, real-world encounters, online friendships can be alluring. Compulsively using dating apps can make you less interested in developing long-term relationships and more focused on casual encounters.
- **Information overload**. Isolation and decreased productivity at work or school can result from spending long periods of time alone on the internet, watching films, playing video games, or checking news feeds. Addiction to the internet and mobile devices can cause you to neglect your interests, social life, and interpersonal relationships.

- **Cybersex addiction**. Spending a lot of time alone on the internet, watching films, playing games or checking news feeds can lead to loneliness and poorer productivity at work or school. You can overlook your interests, social life, and personal connections due to an addiction to the internet and mobile gadgets.
- **Gaming**, gambling, stock trading, online shopping, and placing bids on auction sites like eBay are all examples of internet addictions that commonly lead to problems with money and employment. Despite the fact that there has always been a well-documented problem with gambling addiction, internet gambling has substantially extended access to the game. Compulsive stock trading and online shopping addiction can both have detrimental financial and social implications. Addicts on eBay may get up early in order to participate in the last few seconds of an auction. To experience the exhilaration of placing the winning bid, you can spend cash that you don't have on items that you can't afford.

Internet and smartphone addiction's causes and repercussions:
You might find it difficult to restrain your impulses when using a laptop or desktop computer, but smartphones and tablets help us indulge our compulsions anytime we want thanks to their portability and convenience of use. Most of us never stray more than five feet from our iPhones, in actuality. Like consuming drugs and alcohol, they can alter your mood by releasing the brain chemical dopamine. Furthermore, it is possible to build up a tolerance quickly, which means that utilising these displays will make it harder and harder to get the same satisfying high. A lot of times, excessive smartphone use is a symptom of deeper problems like stress, worry, despair, or loneliness. But it might really exacerbate these issues.

Treatment for smartphone and internet addiction:
- There are now specialised treatment facilities that offer digital detox programmes to help you cut back on your smartphone or internet use if you need further assistance. You can greatly improve your ability to control your technology use with the help of both individual and group treatment.
- Step-by-step methods to cease compulsive behaviours and alter your thoughts of your smartphone and the internet are provided by cognitive-behavioral therapy. Additionally, therapy can teach you healthy methods to deal with unpleasant feelings like stress, anxiety, or despair that can be motivating your smartphone use.
- Counselling for married couples. Counselling can help you work through these difficult issues and rekindle your relationship if heavy usage of internet pornography or online affairs is damaging it.
- Group support. Organisations like Internet Tech Addiction Anonymous (ITAA) and Online Gamers Anonymous offer online support and in-person gatherings to help people who use technology excessively. Of course, you need actual people in order to benefit the most from any addiction support group. Finding options for assistance can be facilitated by online support groups, but it's easy to exploit them as an excuse to use your smartphone even more. You might want to give Sex Addicts Anonymous a try if you're having trouble with a cybersex addiction.

II. LITERATURE REVIEW

[1] Internet and Mobile Phone Addiction Decreases the Capacity of Short -Term Memory Among Youths (2017)- Investigating the relationship between Internet, mobile phones, and short-term memory among college students is the main objective of the current study. The upcoming projections were as follows: There won't be any obvious differences between male and female students in terms of Internet addiction, mobile phone addiction, or short-term memory. Instead, there will be positive correlations between Internet addiction and mobile phone addiction, negative correlations between Internet addiction, mobile phone addiction, and short-term memory. The sample (n = 40) for this study consisted of college-enrolled students from Sangli and Jaysingpur City. The data was gathered using the Internet Addiction Scale, Mobile Phone Addiction Scale, and Short-Term Memory Scale. collected information that Pearson examined.

[2] Cognitive impairment in substance use disorders (2018)- There has been a lot of research on cognitive deficiencies in substance use disorders in the last 20 years since the emergence of cognitive and computational neuroscience as well as neuroimaging techniques. Alterations to the well-known "executive" domains of attention, inhibition/regulation, working memory, and decision-making have been confirmed to occur in substance use disorders, and this suggests that altered cognitive function is a defining feature of these conditions. Poor cognitive (also known as "top-down") modulation of downstream motivational processes, whether appetitive (reward, incentive salience) or aversive (stress, negative affect), is recognised as a fundamental flaw in addiction. Improvements in the detection and management of cognitive dysfunction in drug use disorders may be helpful for a number of reasons, including the fact that cognitive impairment is a transdiagnostic topic that is explored in this special issue.

[3] Research on Adolescents Regarding the Indirect Effect of Depression, Anxiety, and Stress between TikTok Use Disorder and Memory Loss (2021)- This study included 3036 Chinese students in their first and second years of senior high school. The young people were devoted TikTok users. The relationship between memory loss and TikTok usage disorder was examined via the lenses of stress, anxiety, and depression. A forward and backward digit span test was employed to assess memory loss. The analysis was conducted using SPSS Amos and structural equation modelling (SEM), which was chosen as the methodology. The results show that the association between TikTok use problem and forward digit span is partially mediated by melancholy and anxiety. Furthermore, it is shown that the association between backward digit span and TikTok usage disorder is partially mediated by stress, anxiety, and depression. These results also clearly show gender differences. male college students that suffer from depression

[4] Video gaming addiction and its association with memory, attention and learning skills in Lebanese children (2020)- It may be helpful to look at potential connections between kids' cognitive development and video game addiction in order to stop future harm and control it. The purpose of this study was to examine how a sample of Lebanese schoolchildren's learning, memory, and attention skills related to their video game addiction. This cross-sectional survey was carried out from January to May 2019 with 566 kids aged between 9 and 13 years. Three private schools were conveniently chosen for this inquiry. Students were chosen at random from a list provided by the school administration. The parents of the pupils responded to the questionnaire. The results showed that worse episodic memory, problem-solving, and basic skills were significantly connected with a higher salience of video game addiction.

[5] Mobile phones: The effect of its presence on learning and memory (2020)- Our objective was to examine the effects of smartphone ownership on students' memory and learning. Overall, 119 college students completed the Memory Exercise and the Smartphone Addiction Scale (SAS). As expected, those without cellphones did better in terms of memory accuracy than those with smartphones. When asked "how often did you think about your phone," the results showed a significant negative correlation between memory recall and phone conscious thinking, but not between SAS and memory recall. Conscious phone thought was a major predictor of memory accuracy. We found evidence of the negative impacts of having a smartphone nearby on our learning and memory, showing how having a smartphone nearby and having a high phone consciousness hinder one's memory learning and recall.

[6] Brain Drain: The Mere Presence of One's Own Smartphone Reduces Available Cognitive Capacity (2017)- Thanks to our cellphones, we can always be linked to information, entertainment, and each other. We can access the entire world through them, and they hardly ever leave our sides. Although these technologies have a great potential to improve welfare, their persistent presence could be detrimental to cognition. In this study, we investigate the "brain drain" hypothesis, which contends that simply owning a smartphone depletes one's limited cognitive resources, making them less available for other tasks and reducing cognitive function. Two studies found that the sheer presence of these devices reduces available cognitive capacity, even when people are successful at maintaining continuous attention, such as when resisting the impulse to check their phones.

[7] The relationship between addiction to mobile phone and sense of loneliness among students of medical sciences in Kermanshah, Iran (2019)- Addiction to mobile phones is one of the negative impacts of over use of this device. The feeling of loneliness may be affected by this disease and may either get better or get worse. The purpose of the current study was to investigate the relationship between smartphone addiction and loneliness among medical science students. 439 students were recruited for this descriptive-analytical study using stratified random sampling. The mobile phone addiction and loneliness questionnaires from SELSA served as the study's primary data sources. Boys and girls scored on average 73.77 11.48 and 74.64 12.28 out of 100 for their addiction to mobile phones, respectively. There was little to distinguish them from one another. 17.8% of the kids had moderate-to-severe cell phone addiction, according to the evaluation.

[8] Addiction: A Disease of Learning and Memory (2005)- If neurobiology is to ultimately contribute to the development of effective treatments for drug addiction, researchers must pinpoint the molecular mechanisms by which drug-seeking behaviours are consolidated into compulsive use, the mechanisms underlying the long persistence of relapse risk, and the mechanisms by which drug-associated cues come to control behaviour. Evidence for the idea that addiction is a pathological override of the neural mechanisms of learning and memory, which under normal circumstances serve to shape survival behaviours related to the pursuit of rewards and the cues that predict them, is

accumulating at the molecular, cellular, systems, behavioural, and computational levels of analysis. After outlining the convergent evidence in this area, the author addresses the significant outstanding questions.

[9] Influence of Drugs on Cognitive Functions (2017)- Drug-related disorders are a global public health issue as well as an economic and social one. The age group most at risk for abusing drugs and developing a drug addiction is children and teenagers. In this formative stage of life, a crucial moment in the neurodevelopmental process, substance abuse might activate brain plasticity processes, which could result in long-lasting changes in neural circuitry and eventually behaviour. One of the results of these changes is the decline in cognitive abilities, which has a negative academic impact on learning new information. This chapter will cover the effects of utilising prescription drugs on learning and memory as well as the negative effects of misusing illegal narcotics, such as stimulants and depressants.

[10] Addiction and Cognition (2010)- There are significant similarities between the brain regions and neuronal systems that enable cognitive processes like memory, learning, and reasoning and those that lead to addiction. Strong maladaptive linkages between drug use and environmental cues are encouraged in the early stages of drug use, and these connections may serve as the foundation for future cravings and drug-seeking actions. The cognitive impairments brought on by long-term drug use make it harder to maintain abstinence. Abuse-related effects on substances are particularly likely to harm the developing brain; exposures throughout pregnancy, childhood, and adolescence lead to persistent impairments in cognition. Drug or alcohol misuse is more common in people with mental illnesses, and the deleterious effects on cognition may be especially damaging when combined with the cognitive problems brought on by their mental illnesses.

CONCLUSION

Participants' memory recall accuracy suffered significantly while the smartphone was present, demonstrating that it was a significant contributor to the "bandwidth effect" that interfered with their memory functions. According to this review paper, we now know that adolescents are more likely than older generations to use mobile phones or the internet for purposes other than communication. This is because adolescents are more prone to changing fashion trends and styles, which makes them more tech savvy and can lead to certain behavioural disorders. A warning about the harmful consequences of cell phone radiation follows the popularity of mobile phones. The main side effects of excessive mobile phone use are fatigue, headaches, loss of focus, and localised burning and irritation.

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