Requirement, Major Causes and Treatments for Internet Addiction: A Systematic Review

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Abstract. Internet is part of individuals' daily life, and it has been growing rapidly worldwide. With the help of the Internet, geographical barriers are removed between humans and many things have become more efficient than ever before. However, efficiency causes humans to become idle and sometimes addicted. These potential problems are prevalent in young people, which refers to excessive usage of the Internet and its interference with everyday activities. Therefore, it is critical to study the factors caused by the Internet should not be ignored in the investigation and research of behavioral addiction. Nowadays, world events have influenced people's real life due to the pandemic, as the result, the Internet has become an essential tool for them to solve problems. However, the origin of Internet addiction is a combination of many aspects. In the study, a theoretical model was tested that hypothesized the extent and effects of Internet addiction at different ages. According to the results of the report, there are more factors contributing to Internet addiction among adolescents than among adults. By researching the points provided below, the horizon will be broadened and lead to a whole new perspective of Neuroscience. The high probability of Internet addiction is a problem that needs to be further discussed.

Keywords: IA (Internet Addiction), Behavioral Addiction, Problematic Internet Use (PUT).

1. Introduction

Behavioral addiction is an extreme condition in which an individual is unable to control a behavior with his or her own consciousness. Behavior cannot be controlled by external or internal influences, so that addicted to a thing or behavior in an individual [1]. This shows that when people have behavioural addiction, their conscious mind is not able to control your behaviours related to a specific activity. It will be the subconscious mind that controls their behaviours, and the signal that sent by the conscious mind will face difficulty into overwriting the subconscious signal. In an article, the causes of behavioral addiction can be attributed to substance use disorders, such as withdrawal or tolerance, which affect the human brain [2]. Even though people know these behaviors have negative consequences, they continue to use such behaviour until they lose control of the activity. [2] From different other researches, it has been shown that the areas where the brain is affected by behavioural addiction is similar to ones by substance addiction. Although drug addiction has been well studied in the fields of neurology and psychology, behavioral addiction has also received a lot of attention, especially the negative effects of the Internet. In addition to fraud, crime and wasting of time on the Internet, the topic of this study about the dependence of the Internet is also emphasized.

Internet addiction is a behavioral addiction in which a person relies too heavily on using the Internet or other electronic gadgets to relieve stress. Since it affects people worldwide, internet addiction is a subject of much discussion and recognition. IA, for instance, has been identified as a national health concern in South Korea. Developed nations like North America and Europe are becoming more interested in Internet addiction studies, despite the fact that the majority of them have been done in Asia. It is evident how addiction functions from a neuroscience perspective from the article "Internet Addiction: A Brief Summary of Research and Practice." The "reward" or "pleasure" pathway in the brain, which is activated by addictions, is a collection of pleasure-related brain regions, it says. Dopamine, opiates, and other neurochemicals are released when they are triggered. The

related receptors may deteriorate with time, resulting in tolerance or the need to increase reward stimulation to achieve a "high," and the ensuing distinctive behavioral pattern required to prevent withdrawal "[4]. The underlying theory behind why addictions don't get better but rather worsen is demonstrated by the evidence above. All addictions fit under the umbrella of this concept of addiction. The aforementioned process is initiated when people play video games or watch movies for pleasure. In particular, the same article claims, "Theoretically, users of digital technology reap differing levels of satisfaction when using different computer programs... These activities support arbitrary and variable incentive systems, regardless of the application (such as general internet browsing, social networks, gaming, email, messaging, cloud apps, etc.). When reward experiences are paired with content that improves mood, they are improved [4]. The study shows that humans become very hooked due to the sensory rewards of the pleasure zones. The various sensory inputs on the Internet make it very addictive.

During the COVID-19 pandemic, adolescents and young adults are increasingly at risk of developing Internet addiction. As COVID-19 policies force people to reduce social restrictions and interpersonal distance, they have to use the Internet to complete their social activities, leading to an increased risk of Internet addiction. But during this time most of the world's psychologists focused on people with mental anxiety or depression. But in fact, psychologists may also worry about the mental or physical health of Internet addiction. [2] [3]

Before the pandemic went global, the number of young people around the world who had become accustomed to using mobile phones or other electronic devices was growing rapidly. Several studies show that approximately 25% of Internet users meet Internet addiction criteria within the first six months of using the Internet. [4] The prevalence of Internet Addiction Disorder (IAD) worldwide is 6%, with the Middle East accounting for 10.9%, North America accounting for 8%, Asia accounting for 7.1%, South and East Europe accounting for 6.1%, Oceania accounting for 4.3%, and North and Western Europe accounting for 2.6%. [5]. These figures mark the fact that there are already many young people with internet addiction worldwide, and the particular circumstances of the epidemic are highly likely to exacerbate this phenomenon.

Beard, an author of Cyberpsychology & Behaviour, explains internet addiction from a psychological perspective. It stated that in order to be classified as internet addiction, it need to meet different criteria. "

Engages with the Internet (often thinks about previous and next session of Internet usage.

Demand to use the Internet longer and longer to find satisfaction

Unsuccessful efforts to control or limit Internet use

Have negative feelings when trying to limit or stop Internet use

Has stayed online for longer than originally intended.

Has jeopardized any aspects of life or risked losing an important relationship because of the Internet

Has lied to family members, counsellor, or others to hide the degree of his or her Internet use

Uses the Internet to escape from problems or to relieve negative moods (e.g., feelings of loneliness, depression, etc.)" [7]

From the criteria seen above, it would not be unusual for people to think that it's normal to break these criteria. For example, when staying online longer than originally intended, people might just say that they forgot. In addition, when people do not get enough sleep at night, they do not blame it on technology; instead, they blame themselves for not being able to sleep. It is these kinds of ignorance that construct a barrier to internet discipline.

Therefore, it is important to determine the key factors affecting Internet addiction. At the same time, self-control has become an important issue in Internet behavior addiction, and it has become very easy for people to break and exceed the rules. It’s because self-control is the ability to restraint personal behaviors in different situations. Therefore, the main purpose of this study is to explore the different factors that lead to the decline of individuals' self-control ability and the gradual formation of conscious Internet behavior addiction.

2. Self-Control

In simple words, "self-control is known as the ability to administer one's thoughts and behaviors in external situation" [3]. From the brief self-control scale, "self-control can be divided into two aspects: Restraint and Impulsivity" [3]. Thus, when an individual's self-control is challenged by external demands, he must confront the demands that cause him to behave in a certain way and the internal force that motivates him to satisfy his desire. According to impulse theory, some students are more restrained than others and less impulsive [12], so they will be more willing to sacrifice short-term entertainment to commit to long-term goals [3]. In simple words, a student with less restraint is more likely to focus on the short-term feedback than the long-term. For example, a student with a lack of retention is unlikely to study for a test, preferring to watch videos on the Internet. In contrast, students with more retention are more likely to pursue the long-term benefits (in this situation, studying for the test) and avoid using the Internet. There are three main aspects in our lives that Li, S., and all other authors define as influencing self-control (or self-mastery): Culture, age, and gender.

2.1 Culture Factor

Individuals' self-control could be affected by their culture values. For example, "an emphasis on long-term goals can consolidate their importance to students with control, they might devote effort to these long-term goals, thereby reducing the attractivity of short-term Internet amusements and the probability of Internet addiction" [3]. As opposed to, "students that lack self-control are more likely to ignore long-term goals so the cultural values are not likely to influence their mind" [3]. From the evidence provided, different culture values can cause different individuals to have different perspectives on their future goals. Some individuals might prioritize others activities over the Internet while some don't because of what cultures they are living in. It is this type of mindset that makes culture to define the extremeness of Internet Addiction (IA).

2.2 Age Factor

As individuals became mature, so does their brains. "Among the population that lack self-control, younger students might make themselves more exposed to Internet addiction" [3]. This is because "as children mature into adulthood, different parts of their brain also develop; specifically, their anterior insulas became thinner, so they will become less impulsive and plan more" [3]. In the meanwhile, there's a contradiction: "university students' solitude and parental influence might increase their feeling of isolation and the likelihood of seeking belonging on the Internet" [3]. This means that as individuals grow older, it does not necessary mean that they are less susceptible to IA. In different special stages, no matter which age group individuals are in, they can still be expose to IA. It's the feeling of loneliness that is dominant in this type of influencer because different individuals will experience different stages of life where they need to leave others. So, they can only turn towards the internet to fulfil the left out feelings that they have.

2.3 Gender Factor

There is a wealth of literature that thoroughly documents gender variations in Internet usage. There is a ton of evidence showing that guys engage in more problematic Internet behavior than girls [13]. This can be as a result of the diverse reasons that different genders utilize the Internet. Men use the Internet primarily to feel successful when playing games or engaging in other forms of entertainment. Women are more likely than men to utilize it for communication. In other words, women pay more attention to and are more influenced by their friends [9] than men do. Men, on the other hand, rely more on the opinions of their peers since they pay less attention to them and are less influenced by them. As a result, men engage in fewer social activities than women, which leads them to be lonelier than women. As a result, they are more likely to develop IA. Studies that focus on gender have also looked at how various genders' IA, self-esteem, and academic aspirations relate to one another. Given that the majority of the characteristics of IA relate to impairments at the intrapersonal level and that

the development of self-esteem and academic aspirations in men is more influenced by goals characterized by independence, autonomy, and personal achievement [24], it is hypothesized that there is a stronger association between IA and self-esteem in men than in their counterparts.

3. Genetics Influencer

Much research have looked into the genetic predisposition to excessive Internet use. Recent research has revealed strong support for the genetic relationship between PUI/IA (Problematic Internet Use/Internet Addiction) and dopaminergic, serotonergic, acetyl cholinergic, and regulated neurotrophin neurotransmission [11]. The 5HTTLPR is well established for its critical function in controlling serotonin neurotransmission in depression [12] [13] and has demonstrated to be crucial in drug addiction. Additionally, genetic variations that can change the dopamine D2 receptor's availability have repeatedly been linked to other drugs and behavioral addiction [14]. [15]. Additionally, the Taq1A polymorphism of DRD2 (rs1800497), which causes reduced dopamine receptor expression in the prefrontal cortex, is more frequently identified in male teenagers who are obsessed with or addicted to playing online games [14]. [16] [17]. Additionally, Montag et al. demonstrated a relationship between IA in female adolescents and the CC rs1044396 genotype of the CHRNA4 gene, which codes for the nicotinic alpha-4 subunit cholinergic receptor [18] [19] [20]. The corticotropin-releasing hormone receptor 1 (CRHR1) gene has also been linked to an increased risk of developing addiction disorders, according to studies [21]. Unsurprisingly, among Korean adolescents with AI, the genetic relationship between CRHR1 and genotype AA and allele A (rs28364027) has been studied [21]. A study also discovered that, among other things, oxytocin, and its receptor (OXTr) play a significant role in controlling social relationships and behavior [22]. Recent research on social media use by Bonassi [23] points to the potential significance of OXTr gene polymorphism in the etiology of PUI (problematic Internet use) [22]. These findings make it impossible to pinpoint a particular gene that affects the prevalence of Internet addiction. Given the diversity of PUI symptoms, there is genetic overlap with genes that indicate endophenotypes including impulsivity, aggression, etc. [22]. There isn't a dominating kind, though; it all relies on the PUT type.

4. Treatments

There are some pharmacological and psychotherapeutic treatments proposed and recommended for IA. One of the most convincing treatments is cognitive behavioral therapy, which has been proposed in many studies [25] [26]. It emphasizes the relationship between emotions, perspectives, and behaviors and teaches patients to pay attention and be ready to recognize triggers for addictive behaviors through their thoughts and feelings [27]. In addition, group psychotherapy and hospitalization for detoxification are also models for treating IA [28]. These are just some of the most compelling methods for treating Internet disorders. There are some other methods that are still being tested. Anyway, until now, there is no one dominant method to treat IA perfectly, but with the progress of technology, more methods are being explored.

5. Conclusion

In recent research, there are several investigations on conditions listed above, but only a few of them have march a huge step forward in investigating the relationship between self-control and IA. Specifically, much research have only identified various ways about IA and can only now possibly reduce the effect of it. However, there are not much research that provide a clear way in curing IA but instead only on inhibition. For example, numerous amounts of brain circuits are accounted for addiction, and scientists have only identified a few out of the thousands, which means that scientists are just a few steps on the road to cure IA.

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