

Internet addiction: A summary towards an Integration of Current Knowledge and broad Perspectives

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Abstract: The internet originated as a neutral device that was predominantly created to bring ease to the lives of people by making available all the information needed for the growth and prosperity of human beings, but the misuse of this communication medium has created a lot of challenges and the internet addiction is one of them. Internet addiction is a rapidly growing phenomenon exhibiting alarming prevalence rates and a widely recognized problematic condition around the world. Preliminary findings have shown that the unrestrained availability of this communication medium has unfetteredly increased the rate of various complications including psychological disturbances, neurological problems, and social issues. Moreover, it has accelerated the probability of those having an underlying psychological disorder being at serious risk of becoming addicted to the internet, therefore, it has stirred a hot topic of discussion among the mental health communities. The aim of this paper was to deliberately provide a brief overview of the theoretical considerations and ongoing research on internet addiction. A detailed review analysis was performed addressing the types of internet addiction, epidemiology, comorbidities associated with the excessive use of the internet, and different treatment options. Moreover, future areas of research were highlighted stressing the significance of reaching a consensus on characterizing primary features of internet addiction, and an outlook on the future goals of ongoing research has been demonstrated.

Keywords: Internet addiction, Addict, Behavioral addiction, Problematic internet use

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1. Introduction

1.1. What is internet addiction?

The internet is an essential part of modern life. The phenomenon of the internet is spreading rapidly as it is becoming an indispensable tool of contemporary society. It can be considered a major driver of change more than any other technological medium. Nonetheless, with every prominent innovation and ground-breaking development in technology, several unanticipated and unfavorable consequences have emerged over the last decade. The term “internet addiction” can be attributed to a situation in which the individual loses control over the use of the internet. Internet addiction is reported to have a devastating impact on the self-being, mental health, and psychological functioning of the individual. Although many will believe that simple surfing all day long may be a normal act, the truth is that some people spend excessive time on the internet to an extent that it starts to disturb their daily lives activities. So, when an action or activity becomes an obstacle as it starts to take the place of the major aspects of one’s life, it can be attributed to an addiction (Becker & Montag, 2019).

1.2. Symptoms of internet addiction

There has been a lot of debate regarding the classification of specific behavioral activities associated with the certain extent of internet use that can be attributed to internet

addiction (Block, 2008). The symptoms of internet addictions are evaluated by several alterations in mood, the incapacity to manage the time spend on the internet, the symptoms of withdrawal, an absence of social life, poor grades, a tendency to procrastinate, devastating impact on work performance, and persistent obsession with internet (Young, 1998). Many researchers consider the problematic use of the internet as symptoms of another underlying mental health problem for example anxiety, stress, or depression.

1.3. Prevalence

A recent report in 2020 showed that Northern Europe was on the top of the list in terms of internet penetration rate (IPR) which is used to define the percentage of internet usage in a population (Chia et al., 2020). Western Europe was in the second number followed by Northern America. The region of Southeast Asia was in 9th position according to internet penetration rate. The worldwide prevalence rate of internet addiction has been reported to be 6%. Müller et al. (2015) studied the prevalence rate of gaming disorder in 7 European countries and observed the prevalence rate to be 1.6%. The country with the highest internet users was found to be Greece. Poland was in second place followed by Iceland and then Germany and so on. Gentile, (2009) studied the prevalence rate of online gaming among adolescents in the US and found it to be 8.5%.

The use of the internet rapidly increased in the early 1990s, and the cases of internet addiction were reported in 1998 for the first time in the US. Globally, Korea came on top with more than 1 million internet users reported in 2003. Since then, the number of teenagers immersed in online gaming has been found to be continuously increasing around the world. The extensive use of the internet has raised major concerns regarding internet addiction. Chia et al., (2020) reported the prevalence rate of eleven Southeast Asian countries and found a prevalence rate of 20.0% for IA while 10.1% was associated with online gaming. Among Southeast Asian countries, cases of internet addiction were found to be highest in Brunei, and then Singapore followed by Thailand.

1.4. Does Internet Addiction Resemble Other Addictions?

From the outset, there has been a deliberate debate over the classification of internet addiction as a type of impulse-control disorder identical to pathological gambling or more analogous in nature to substance abuse disorders (Block, 2008), or even if it is commendable of adding in the category of psychological abnormalities (Swaminath, 2008). Many researchers have argued that the properties of substance addiction can be equally applied to certain other types of behaviors including internet addiction (Pontes & Griffiths, 2014). Kuss et al., (2014) evaluated the resemblance by taking two sample populations including teenagers and young adults. He demonstrated that the attributes of internet addictions are quite identical to excessive substance use. These findings were also supported by other studies (Shapira et al., 2003). Kuss & Griffiths, (2014) suggested that symptoms of pathological gambling usually fall in the similar categories of addiction syndromes as both exhibit the same neurological and behavioral characteristics. Furthermore, Brand et al., (2014) found that the brain of the human responds to the cravings of using more internet in the same way as it reacts to the stimuli produced in a substance-dependent patient.

1.5. Does the type of internet use matter?

Davis, (2001) classified the excessive use of the internet into two types; specific use and generalized use. During the specific use, the individual feels an intense urge to use the internet for achieving satisfaction such as in gambling or pornography. While the generalized use can be attributed to a broader condition that is related to excessive online activities including the use of various social media sites. Furthermore, Widianto & Griffiths, (2006) also focus on developing a broader concept. He highlighted the need to substantially differentiate the “addictions on the Internet” from the addiction to the internet. The difference is more based on the extent of internet users rather than the need to use the

internet to fulfill the urge of particular addiction. It has been reported in many research studies that specific use of the internet is more dominant than generalized use. [Van Rooij et al. \(2010\)](#) reported that the overall time spent on the specific use of online gaming applications was found to be the most common internet addiction type present in their sample population.

2. Different types of internet addictions

The term internet addiction is not only restricted to the excessive use of online games, but the problematic indulgence in watching videos, continuously surfing the internet, excessively using online gambling, or visiting pornographic sites. A few of the major types of internet addiction are as followed ([Cao et al., 2011](#)):

- Gaming addiction
- Gambling addiction
- Pornography addiction
- Online relationship addiction

Nonetheless, due to rapid advancements in digital technologies, there are high chances of appearing more types of internet addictions in the future. Moreover, it is relatively complicated to deal with new types of internet addictions, there is an immediate need for formulating well-defined guidelines specifically for internet addiction.

2.1. Gaming addiction

Gaming addiction is also sometimes referred to as internet addiction which includes compulsive excessive engagement of the individual in gaming activities. This disorder can be diagnosed if the individual is found to be involved in gaming activities to an extent that it costs him daily activities and duties as he continues doing so without caring about its negative consequences. According to ICD-11(International Classification of Diseases), the main diagnosis criterion for this addiction is the inability of the individual to control himself from the excessive use of gaming. The prevalence rate associated with online gaming addiction is quite variable and usually ranges from 0.2-to 50% in various countries ([Petry, 2013](#)). It is not necessary that excessive use of the internet should always be associated with online use, rather various offline gaming activities are also put in the category of internet addiction and can lead to various mental health problems.

Online gaming is a flourishing market. It is estimated that the growth of the gaming industry has been continuously increasing with more than one billion individuals involved in playing different games. Many games require high skills, good attention, adequate reaction time, and high levels of competencies to make real-time strategies. Moreover, gaming also helps in making new friends and relationships while working as a team in the game ([Kerr, 2008](#)). [Karlsen, \(2016\)](#) investigated the consequence of excessive online gaming by conducting an interview with twelve gamers. He observed various behavioral changes in the players including withdrawal symptoms, conflict, low tolerance, and mood alterations. In most cases, the dependency on online games keeps the person awake till late at night, thereby leading to the manifestation of sleeping disorders mainly due to lack of sleep ([Zhou et al., 2011](#)). It has been reported that employees waste a lot of their time playing different games, and it is a major reason behind their reduced productivity ([Griffiths, 2010](#)). To prevent the negative impacts of gaming addiction, many countries have started various initiatives to combat the growing issues of excessive gaming, especially among teenagers ([Starcevic, 2013](#)).

[Griffiths, \(2005\)](#) described the biopsychosocial stages that lead to the development of addictions (including gaming addiction). Various components of this process are as followed.

- Firstly, the behavior is obvious (preoccupation with gaming).

- Secondly, the individual utilizes this behavior to alter his mood (gamers used this behavior to escape reality).
- Thirdly, the individual develops tolerance (the gamer requires more time to get the same feeling of satisfaction).
- Fourthly, the individual shows the symptoms of withdrawal upon disruption in behavior (the gamer feels sad, anxious, and depressed when they are being restricted from playing).
- Fifthly, self-conflict and interpersonal conflict are developed (the gamer develops various issues with their close ones, his workplace and other activities are also impacted).
- Lastly, the individual encounters relapse (the gamer starts playing games again).

The individual's context is a major factor that is necessary to draw a boundary line between excessive gaming and problematic gaming. Depending upon the life situation of an individual, the preferences of gamers are changed. Furthermore, the factor of cultural context is important because it embeds the individual in a culture with collectively similar beliefs and shared practices, giving their gaming a sense of meaning. [Snodgrass et al., \(2013\)](#) investigated the factors associated with motivational achievement in the gameplay. Furthermore, he determined the role of culture under the assumption that games can allow the shaping of cultures. He found that an individual may get motivated by the success and achievements in games and subsequently become a gaming addict if he is less successful in real life, thereby using games as an escape from reality. Moreover, he uses game achievements as compensation to avoid depression and other negative health consequences.

2.2. Electronic Gambling addiction

Online gambling is the fastest way of gambling due to the ease of accessibility facilitated by technological advances, attractive interfaces, and ease of spending money. Online gambling addictions can be defined as the online activity in which two individuals come into an online contact to exchange bets. These kinds of activities are based on the risk of real loss or gain of money ([Gainsbury et al., 2015](#)). The popularity of online gambling is gaining a lot of popularity, thereby taking a major space in the international market share. The annual growth rate of the online gambling market has been expected to rise to 10.1% in the upcoming years ([Betting, 2011](#); [Müller et al., 2015](#)). The largest product related to online gambling is wagering which accounts for almost 53% of the gambling market and includes poker, bingo, and casino games ([Gainsbury et al., 2015](#)).

Online gambling is gaining a lot of popularity as various online platforms are rapidly adding more recreational activities, bonuses, and modern features to attract more users. Many advantages of online gambling include the ease of access, increased value for money, high pay-out rates, multiple options, availability of a wide range of betting products, and a high level of comfort by doing gambling at home ([McCormack & Griffiths, 2012](#)). It has been reported that due to the immersive nature of online gambling, gambler addicts suffer from more problems and faces disruptions in their daily activities as compared to land-based gamblers ([S. Gainsbury et al., 2013](#)). Moreover, it has been propounded that those gamblers only using online platforms for gambling suffer from fewer problems than the ones who gamble offline and those who use both mediums for gambling including offline and online. Gamblers who utilize both modes of gambling have been found to be more prone to greater harm due to their excessive involvement in gambling ([McBride & Derevensky, 2009](#)). [S. M. Gainsbury et al., \(2013\)](#) reported that the most problematic online gamblers are of young age, have money problems, and are not much educated as compared to the non-problematic online gamblers. Another study reported that online gamblers are probably the educated ones with high socio-economic profiles

and suffer from more gambling problems as compared to the non-internet gamblers (Hayer & Meyer, 2011).

The major problem associated with online gambling is financial loss and it can further lead to adverse outcomes including loss of all savings, property, or even homeownership. Gambling addicts usually lose control after losing a game and are unable to stop overthinking about the next round to get their lost money back. Apart from money waste, most of the time of the gambler is wasted in such thoughts, thereby neglecting his responsibilities. It has been reported that the frequent use of such games even if there is no loss of real money can also substantially cause addiction. The ease of availability of various online gambling websites greatly increases the chances of young people getting engaged in these kinds of activities. Globally, various jurisdictions are trying to legalize and regulate online gambling. This is followed by the identification of hurdles in enforcing prohibition as well as the working on the advantages of regulation including several measures to minimize damage and increase consumer protection (S. Gainsbury et al., 2013).

2.3. Pornography addiction

The internet has made it quite easier for everyone to access sensitive content including pornography. Pornography addiction can be referred to as an individual who substantially becomes so emotionally attached and dependent on porn content to such an extent that this addiction disturbs his daily life activities, relationship with close ones, and ability to properly function (Taylor, 2019).

Modern pornography is reported to be unequivocally more addictive due to ease of access, availability of a variety of videos and images, and the level of privacy that it offers to its users. People can waste hours on their devices surfing for new pornography content and its omnipresence on the internet allows the individual to easily cross the undivided line into addictions. It has been propounded that this type of addiction can be as devastating as other types of addictions including gambling, gaming, or substance abuse, and can primarily seize the daily life activities of a person. Some therapists consider this type of addiction under the category of hypersexual disorders (Voros, 2009).

Some common signs and indications of a pornography addict include the loss of interest in their real-life partner, engagement in risky situations to watch porn, feeling frustrated after watching porn, ignoring responsibilities to watch porn, unable to control the urge to watch more porn, spending money on porn content and use pornography as a coping strategy to avoid sadness and other mental health issues (De Jong & Cook, 2021).

It has been found that the use of pornography substantially activates the dopamine hormone that gradually leads to addiction. This addiction has an impact on several aspects of the nervous system, gradually inducing certain changes, and eventually, it becomes hard for the individual to avoid this addictive behavior (Niv et al., 2007). Gola et al., (2017) investigated the behavior of male participants who were seeking therapy for problematic pornography use (PPU). Certain alterations were found in the brain regions of these participants that were found to be persistent with addiction. The brain of these individuals reacted discordantly to the porn images as compared to the brain of males without any symptoms of problematic pornography use. Another study reported that the problematic use of pornography sites among the males was associated with the loss of sexual satisfaction in their partners (Poulsen et al., 2013).

2.4. Online relationship addiction

This type of addiction is associated with the excessive use of the internet to continuously look for new online relationships through chat rooms or various SNS (social networking) sites. This type of relationship can be found at any place or anytime through the online interaction of the people. This often comes up with neglecting real-life relationships including family, close relatives, and friends. This type of internet addict tries to hide his identity and looks by faking a personality to persuade another person that they are exactly

the ones they are portraying. After trying so hard to maintain his social life, this type of addict develops various unrealistic expectations from the other person with whom he is interacting through social websites. This often leaves the individual with an inability to make new relationships in real life (Kuss and Griffith, 2014).

3. Does Drug use (smoking, alcohol) precede internet addiction?

Several studies have found that substance abuse is associated with an increased risk of internet addiction and vice versa (Bakken et al., 2009; Padilla-Walker et al., 2010). Lee et al., (2013) investigated the linkage between drug abuse and internet addiction among teenage students. He conducted a survey containing 128 questions in fourteen fields. The questions were mainly related to daily eating habits, drug use, alcohol consumption, traumatic conditions, physical activities, mental disorder, hygienic routine, demographics, and internet use. Among students, the internet users included in the survey were mostly ranging from general users to internet addicts. After adjusting all the factors, all the data collected were subjected to statistical analysis. It was suggested that teenagers with alcohol use or smoking habits are predicted to be at higher risk of becoming internet addicts. Conversely, drug use is also associated with a higher chance of internet addiction. Teenagers suffering from a certain type of addiction (e.g., internet addiction) are considerably vulnerable to other addictive behaviors and comorbidities (e.g., substance abuse) and, therefore, should be treated properly to avoid further damage.

The theory behind the overlapping of internet addiction with substance abuse can be explained by similar predisposing features as well as the attributes of brain regions to respond identically to both types of addictions. It has been widely reported that individuals suffering from substance abuse and IA (internet addiction) demonstrate identical behaviors and temperaments. Furthermore, in a study conducted by Cho et al., (2008) involving 686 participants, it was found that individuals with internet addiction exhibited high self-complacency and low self-transcendence. Lee et al., (2008) reported in their study that teenagers with problematic internet use considerably exhibited high harm avoidance. Andó et al., (2012) conducted a study on alcohol-addicted patients and reported that harm avoidance was inversely linked with the period of sobriety.

3.1. Alcohol use and internet addiction

In recent years, the excessive use of the internet has been widely reported and a large number of its users are found to be teenagers. The excessive use of the internet has negatively impacted social activities, overall health, and school performance (Lee et al., 2013; Van Rooij et al., 2014). Morioka et al., (2017) performed an analysis to determine a correlation between alcohol consumption and internet addiction. A questionnaire survey was conducted at different senior high schools in Japan and responses from the students were collected. A regression analysis was done to determine the association and it was found that the use of the internet (greater than 5h per day) was greatly increased on those days on which excessive alcohol consumption was done. Moreover, a dose-dependent relationship with excessive internet usage was observed. It was propounded that adolescents consumed more alcohol on the days of problematic internet usage highlighting the presence of a close association between alcohol consumption and excessive internet use.

The use of alcohol by teenagers is another public issue that has a long-lasting impact on their cognitive functions, and physical and social activities. Ko et al., (2008) investigated the impact of internet addiction on alcohol consumption in 2,114 students and reported that internet addiction was associated with excessive alcohol use. These findings were in correlation with another study reported by Lee et al., (2013) who found that substance abuse increases the risk of problematic internet addiction. According to the psychological perspective, Jessor, (1987) presented a theory known as Problem-behavior theory and demonstrated that problematic alcohol consumption can lead to various behavioral problems and internet addiction can be one of them. In another theory presented by

Grant et al., (2010) and based on a neurophysiological viewpoint, it was propounded that neurotransmitters possess a pathophysiological relationship between behavioral addictions and alcohol consumption.

4. The negative consequences of internet use

The internet is the biggest repository of information, and it is considered the fastest way of transferring information. But the excessive use of the internet can have a devastating impact on various domains of life including the individual's physical health, social life, mental health, occupation, and relationship with family and friends. Moreover, internet addiction has a negative impact on the overall physical and mental health of the user. IA substantially affects the normal body functionality of the individual and subsequently induces adverse changes in the quality of life. The systems that are widely affected by this disorder include the nervous system, ocular system, and musculoskeletal system (Diomidous et al., 2016). The addict suffers from continuous headaches, obesity, lack of sleep, and fatigue. Among internet addicts, there is a high probability of developing ADHD symptoms. Several symptoms included are poor time management, impulsiveness, trouble focusing, high level of frustration, low tolerance, and difficulty in multitasking. Furthermore, there are high chances of occurrence of multiple underlying disorders in problematic internet users that probably need special treatment and care. Furthermore, excessive use of the internet is associated with feelings of loneliness, withdrawal, and social isolation. Close relationships can be ruined by internet addiction, especially due to the problematic indulgence in online pornography (De Jong & Cook, 2021).

5. How is internet addiction assessed?

The clinical diagnostic criteria for assessing gaming addiction include the excessive need to spend extra time on gaming, playing games to reduce stress, withdrawal, preoccupation with games, unable to reduce game time, and lying to the family about the time spent on gaming (American Psychiatric Association & Association, 2013).

DSM was initially used in 1952 by psychiatrists as an aptitude evaluation of soldiers. This diagnostic criterion was initially used for incorporating some components of gaming disorder in the fifth edition of DSM. The symptom of withdrawal is associated with this disorder followed by excessive indulgence in online games and a rise in various social problems, sleeping disorders, depression, anxiety, poor grades, and disrupted working routines. DSM-5 is substantially used for describing substances that are associated with addiction disorders. This de facto manual is also sometimes used as a diagnostic standard for investigating the symptoms of internet addiction (Perdew, 2014).

5.1. Diagnostic criteria for internet addiction

The diagnostic criteria for identifying the symptoms of internet addictions were presented for the first time by Young, (1998). He proposed the idea of including the excessive use of the computer as the next iteration of addiction in the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*. He proposed the eight points diagnostic criteria by making certain alterations in the already existing criteria of DSM-IV mainly present for pathological gambling. The salient features of diagnostic criteria for declaring the respondent an "internet addict" included preoccupation with the internet, excessive use of the internet to achieve satisfaction, repeatedly unsuccessful attempts to control the internet use, withdrawal symptoms, using the internet longer than it was originally intended, risks of interference with career or responsibilities, concealing behavior to hide the excessive involvement with internet, and finding refuge from problems through internet. Shapira et al., (2003) presented another diagnostic criterion that was consistent with Young's findings.

Several other diagnostic overlapping criteria have been presented in previous studies. Beard, (2005) suggested diagnostic criteria comprising five major points to diagnose

internet addiction including the preoccupation with the internet, requiring more time for internet users to gain satisfaction, feeling depressed with even the thought of not being able to use the internet, staying online longer than it was initially decided, and inability to adequately control the use of the internet. Furthermore, either one of them should be present; excessively using the internet to run away from problems or depression or lying to family members to hide the extent of internet usage.

Over the last decade, extensive studies have been performed to determine the significance of internet addiction as a major public health threat. Many countries are focusing on launching various initiatives to aware people of internet addiction (Block, 2008). The consideration of the internet as a mental disorder is rather ambiguous. Various authors have raised concerns regarding the diagnostic criteria by highlighting the constraints associated with defined symptoms. They argue that a certain level of engagement can be exhibited in many other types of activities, so it might not be correct to link this addiction with something pathological. Moreover, many individuals play games to prevent their mood from getting worse and the above criteria are not sufficient to distinguish gaming addicts from casual gamers. Therefore, a broader conceptualization is imperative to design effective diagnostic criteria for gaming addicts (Rideout, 2015).

5.2. Internet addiction scales

5.2.1. The Generalized Problematic Internet Use Scale

This scale is primarily based on the concept of CBT theory related to internet addiction. It has twenty-nine components in it and each component has a 5-point scale ranging from strongly disagree (=1) to strongly agree (=5). It assesses the impact of internet addiction on the cognitive and behavioral attributes of the individual. Furthermore, it consists of 7 sub-scales with each correlating to a variety of psychosocial health variables including anxiety, stress, self-esteem, depression, and loneliness (Caplan, 2002).

5.2.2. Internet consequences scale

This psychometric scale based on the Likert scale consists of thirty-eight items that are employed to evaluate the consequences of excessive internet use. Furthermore, it constitutes three subscales based on:

- Physical consequences (7 items)
- Behavioral consequences (15 items)
- Psychosocial consequences (16 items)

This scale has been reported to show good validity and high reliability. Clark *et al.* (2004) found that this instrument has good content validity and high reliability.

5.2.3. Internet Gaming Disorder Test

This psychometric test containing 20 questions was developed to evaluate the extent of gaming addictions and the degree of symptoms faced by the individual (Pontes & Griffiths, 2014).

6. Treatment

There are no specific treatments available to treat internet addiction. By observing the severity of the condition and behavioral patterns in the individual, various types of treatments and interventions can be employed.

6.1. Cognitive behavior approach

Most of the treatments that are employed for treating internet addiction involve the use of cognitive behavior therapy. This therapy primarily assists the individual to understand his addictive actions and feelings, thereby helping him to learn coping skills to avoid

a relapse. This therapy allows therapists to treat more patients in less time. [Young, \(2007\)](#) employed CBT for the treatment of 114 patients suffering from internet addiction and observed positive outcomes in the clients in terms of enhanced motivation, ability to perform well at work, certain improvements in refraining from watching sexually explicit content, and ability to properly manage their time spent on the internet. Moreover, [Li & Dai, \(2009\)](#) successfully treated 38 addicted teenagers with the help of CBT.

6.2. Pharmacological treatment

Many clinicians employ psychopharmacology to treat internet addiction although there is no solid evidence regarding the efficacy level of pharmacological treatments. Previously, the use of selective serotonin reuptake inhibitors (SSRIs) has been reported to effectively treat the psychiatric symptoms of internet addictions including depression, stress, and anxiety ([Arisoy, 2009](#); [Atmaca, 2007](#)). One SSRI known as “Escitalopram” has been reported to show a reduction in the overall internet usage among individuals diagnosed with internet addiction ([Dell'Osso et al., 2008](#)). Another study conducted by [Han et al. \(2011\)](#) employs bupropion which is an antidepressant drug to alleviate the longing for playing more video games.

6.3. Group and family therapies

[Peukert et al., \(2010\)](#) recommended the involvement of family and other relatives to be effective in improving the motivation of an internet addict to decrease the time of its internet usage. It has been reported that individuals with a lack of social support shift to the internet for making new relationships. Helping those individuals to make a healthy social circle in real life, will ultimately assist them to rely less on the internet. It has been reported that many internet addicts are also alcohol addicts, so different support therapy programs can help them efficiently overcome their feelings of loneliness and inadequacy. Moreover, through a support system, the chances of their recovery will be enhanced. There are also many web-based support group networks that help the clients to recover the health and well-being of individuals suffering from internet addiction. Moreover, Family interventions can also be helpful for the individual to recover fast ([Murali & George, 2007](#)).

7. How to prevent internet addiction?

Despite the presence of bulk of studies focusing on the treatment of internet addiction, there have been not many findings regarding the prevention of internet addiction. Educators and therapists have put much emphasis on the immediate need for accompanying evidence-based prevention strategies along with the treatment methods for confronting the IA problems by also addressing several risk factors prior to addiction that gradually lead to more serious problems. Many researchers have agreed that children should be the focus of designing preventive interventions as they are in their formative years. Moreover, the prevalence rate of internet addiction is higher among children and teenagers. Educators can give presentations to their students to aware them of the adverse impacts of internet addiction by employing numerous prevention interventions. [Busch et al., \(2013\)](#) reported the introduction of prevention interventions in schools, thereby promoting the importance of health and discouraging the use of drugs, alcohol, smoking, and excessive internet use. The result subsequently showed the success of these interventions as major positive changes were found in students' behavior. [Young, \(2010\)](#) suggested the importance of parents' involvement in monitoring the online activities of the children as well as understanding the basic needs of their children regarding the use of the internet. [Frangos and Sotiropoulos, \(2010\)](#) emphasized spreading awareness among the employees regarding internet addiction and encouraged companies to assist their employees in coping with the early signs of internet addiction. [Xu et al., \(2012\)](#) recommended the use of switching attention as a prevention intervention. It was propounded that diverting the

attention of the individuals towards more healthy activities can help them to avoid excessive indulgence in gaming activities.

8. Conclusion

Over time, technological breakthroughs have remarkably reshaped the importance of the internet in our lives. As the use of the internet has become indispensable in the modern world, the cases of internet addiction are rapidly increasing. Nonetheless, the advantages usually outweigh the disadvantages despite the ever-growing number of internet users. There is an immediate need of employing effective interventions along with treatments to prevent the adverse impact of internet addiction. The symptoms of internet addiction are relatively identical to the types of behavioral addictions. There has been a lot of debate to reach a consensus over the diagnostic criteria that can be able to distinctly diagnose internet addiction, but the use of different measurement tools employed in different studies makes it quite hard to generalize all findings. Furthermore, it is still obscure to this day that either the underlying symptoms or behavioral patterns of all types of internet addictions are similar. Nonetheless, more research is needed to find the answers to the above questions.

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All data generated or analyzed during this study are included in this article. Further enquiries can be directed to the corresponding author.

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