



## Internet Addiction: A Literature Review

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### Abstract

A detailed literature review on Internet addiction from 1995 to 2023 has been reported in this article. Many psychologists were of the opinion that there might be some existing psychopathologies in people which prompted them to Internet addiction. This observation is extended into viewing the possibility that internet addiction might be masking other issues that need to be dealt with within therapy.

### Key words

transactional analysis. internet addiction, literature review

### Introduction

Internet addiction, colloquially known as “nomophobia” is the fear of being without an electronic gadget. The internet has its own merits as well as demerits. The emergence of Artificial intelligence (AI) and Chat GPT has changed the world a lot. However, it could be a problem if human beings are incapable of understanding that technologies are actually for the benefit of humans and not humans for the benefit of technology.

### Literature Review

The discussion on internet addiction has begun by Goldberg (1995) by putting his observation in psychiatric bulletin board PsyCom.net (which is unavailable now) as similar to substance abuse criteria in Diagnostic and Statistical Manual (DSM-IV), 4th edition of American Psychiatric Association (1994), which has created a challenge in the field of psychology dealing with the overuse of internet.

Young (1996), who has been working on internet addiction for 20 years, reported the addictive use of internet as a pathological condition. In the same year, Griffiths (1996) published an article entitled ‘Technological Addictions’ dealing with gambling, computer use and other technological uses of human beings, and detailed ‘Internet Addiction’ under the wider term ‘Technology Addiction’. Reilly (1996) reported ‘Internet addiction: a new disorder enters the medical lexicon’, where he mentioned Young’s

still unpublished research on internet addiction. Shaffer (1996) elaborated the ‘reward deficiency hypothesis’ stating that people who were not getting the natural rewards turn to internet usages for immediate gratification similar to alcohols or drugs.

Brenner (1997) after a survey conducted with 563 users reported that this addiction happens with the management of time along with normal problems as that of different types of addictions. He also suggested that this internet usage was a support for the tolerance, craving and withdrawal.

Young (1998), in a research article entitled ‘Internet Addiction: Emergence of a new clinical disorder’ reported that online addictions were mainly due to the lack of real life social needs and they feel loneliness and become comfortable when they are online. She also wanted to explore the relation between internet addiction with gambling and other psychopathologies such as bipolar disorder, OCD etc.

Griffiths (1999) expressed that excessive internet usage may not be problematic to some people but in some other cases it will be similar to addiction which needs attention of psychologists for curing the associated social psychopathologies.

A survey report of 277 undergraduate internet users (Martin and Schumacher, 2000) revealed that the pathological users seemed to be lonely and socially inhibited along with escapism.

Davis (2001) differentiated internet users in 2 categories like specific Problematic Internet Users (PIU) who used internet mainly for sex or online gambling, and generalised PIU who search for everything available in the internet. The author added that some existing psychopathologies in them would enhance the psychological conditions. The treatment he suggested were CBT with journaling of internet use, thoughts recording and exposure therapy. In the same year, Beard and Wolf (2001) indicated the need for making alterations in the measures to diagnose internet addiction separately

because the measures reported to identify pathological gambling and problematic internet usage were found to be merged with each other.

Caplan (2002) had designed a scale named as Generalised Problematic Internet Use Scale (GPIUS) to work on Davis (2001) theoretical concept of PIU. The analysis was conducted with 386 undergraduate students and found that GPIUS had reliability and validity. The authors also marked that GPIUS was mainly due to the lack of social connections and other psychopathological issues such as depression, mood shift, self-esteem etc. Kim and Kim (2002) also reported the relationship of internet addiction with individual problems along with the feelings of worthlessness, low self-esteem and loneliness. Due to this people feel insecurity and anxiety which they try to eliminate by spending more time online.

Nalwa and Anand (2003) wrote that among school children (16-18 years old in India), two groups were identified as dependents and non-dependents. Significant behavioural and functional usage differences were revealed between the two groups. Dependents were found to delay their work to spent time online, lose sleep due to late night logons and feel life would be boring without internet to a greater degree than non-dependents. On the loneliness measure, significant differences were found, with the dependents scoring higher than the non-dependents. In the same year, Soule, Shell and Kleen (2003) suggested different names for internet overuse such as pathological internet use, Internet Addiction Disorder, online junkie and compulsive internet use: they also reported that addicted people exhibit symptoms as that of any other addiction.

Yoo, Cho, Ha, Yune, Kim, Hwang and Lyoo (2004) have conducted a study to identify any symptoms existing between Internet addiction disorder (IAD) and ADHD with impulsivity among 535 elementary school students consisting of boys and girls, and concluded that there was. In the same year, Young (2004) reported the definition of internet addiction as a new clinical phenomenon. This article also detailed the major impacts of internet usage among students, couples, employees and people of all walks of life. Spending time from 40 to 80 hours per week could be considered as addiction according to Young. The article elaborated that over usage of internet might be an escape hatch for mental problems such as, depression, anxiety, stress or withdrawal.

Beard (2005) conducted structured interviews (based on Beard and Wolf, 2001) with clients who had come for treatment of internet addiction which could differentiate between pathological gambling and internet over usage.

Aboujaoude, Koran, Gamel, Large and Serpe (2006) conducted a telephonic survey among 2513 adults in United States to find out the connection of IAD with Impulse control disorders, OCD and substance abuse disorder. Only 56.3% responded and of them 3.7% to 13% were occupied with problems on internet usage. They noted the need for further study to see the presence of psychopathologies associated with internet addiction.

Atmaca (2007) reported the case of problematic internet use of a client who responded to SSRI–quetiapine combination as treatment mode and the author recommended this combination for the effective treatment of internet addiction disorder. Leung (2007) conducted a study with 717 sample of boys and girls aged 8-18 years and found that there existed a close relation between stressful life and internet usage since it would bring about mood management and social recognition. This author strongly suggested that mental disorders were enhanced by the use of internet. Caplan (2007) reported the result of a study done on 343 male and female undergraduate students aged 8-18 years and found that the lack of interpersonal communication was the main source for being addicted to internet. The author coined that internet addiction could be redefined as deficient self-regulation, which arose out of depression.

Bostwick and Bucci (2008) reported their findings about internet sex addiction and stated that defective functioning of the brain's reward centre is the source of any type of addiction. Dopamine is the driving force for every action. Their finding was that medicine like naltrexone blocks opiates which accelerates the production of dopamine which can suppress the addiction.

Bakken, Wenzel, Götestam, Johansson, and Øren (2009) conducted a study on 3399 Norwegians aged 16-74 years with Young's questionnaire (YDQ) and found that gender, age, education and financial status affected internet addiction. Other factors were time, sleeping disorders, depression and other psychological factors that increased directly with Young's scores. Young (2009) reported that pathological gambling showed similarity with internet usage since both of them had equivalent symptoms. Reviews showed the influence of negative thoughts, negative core beliefs and cognitive distortions played a significant role, and she suggested CBT as a treatment method to overcome the maladaptive internet use.

Du, Jiang and Vance (2010) evaluated the effectiveness of group cognitive behavioural therapy in 56 students having internet addiction with age groups 12-17 years. Cognitive measures were done

on the subjects just after the intervention and a follow-up of 6 months. Improvements were exhibited by the participants for emotional stability, mood management, behavioural and self-management.

Young (2011) had designed a new model of treatment for internet addiction which she named as CBT-IA. It consisted of 3 phases such as behaviour modification as the first phase, cognitive therapy in the second phase and harm reduction therapy (HRT) as the third phase. Young recommended this approach both for outpatient and inpatient clients. In the same year, Yuan, Qin, Liu, and Tian (2011) reported the studies on neuroimaging in internet addicted people and observed that IAD had the same neurobiological mechanisms of substance addiction and also that of behavioural addiction, and stated that this method could pave the way of treatment for IAD and drug abuse.

Fisoun, Floros, Siomos, Geroukalis and Navridis (2012) conducted a study with 1270 young people with ages 14-19 years of the island of Kos, Greece and found a correlation between personality, substance abuse and internet addiction. They reported that if there existed some internet addiction there was a possibility of the increased usage of drugs also. Hence IAD indicated as a precursor to drug abuse. Guadix, George and Calvete (2012) analysed psychometric characteristics of the Generalised Problematic Internet Scale 2 (GPIUS2) for 1491 Mexican adolescents to test the CBT model of problematic internet use. Studies and validated it for internet addiction due to deficient self-regulation. They recommended GPIUS2 for use in schools for the assessment of IAD.

In the same year, Lee and Stapinski (2012) conducted a study on 338 general sample and found a correlation of problematic internet use with social anxiety. The results showed that as a result of internet addiction, one might go away from face to face interaction and get comfort from the online replacement. Also, Cash, Rae, Steel and Winkler (2012) did an overview of work conducted on IAD previously and also their own contributions from their experiences with people with IAD. The article consisted of classification, diagnostic criteria, prevalence, etiology, neurobiological vulnerabilities, reinforcement/reward, biological predisposition, mental health vulnerabilities and various treatment modalities conducted by various psychologists were included.

Kuss, Griffiths and Binder (2013) conducted a study on 2257 students of an English University to establish the relationship between the particular activities on the internet which could lead to addiction and which might be connected to the personality of the individual. After the study it was found that 3.2%

of the students were addicted to the internet. In that year, the American Psychiatric Association included Internet Gaming Disorder (APA, 2013) in DSM-V but shown in the Section of Conditions Needing Further Study.

Kuss, Griffiths, Karila and Billieux (2014) had given a detailed review of internet addiction from 2000 onwards. The authors have stated that there existed no standard method of classification but the core symptoms such as compulsive use, negative outcomes and salience were relevant for diagnosis. They suggested the necessity of a nosological approach by which only people in need could be given assistance by changing the scientific evidence made for internet addiction into actual clinical practice. Van Rooij and Prause (2014) reviewed articles in the 5 years before 2014, mainly that of Griffiths' model, Young's IAT and the criteria given by Tao, Huang, Wang, Zhang, Zhang & Li (2010) because of their scientific nature and citations attained. They suggested that the things given in these reviews were not satisfactory and so concluded that the evidence based was not apt for IAD; hence other areas pointed out were focusing on impairments, comfort obtained from internet, neuroimaging studies and also the study of behaviours. Another study by Király, Griffiths, Urbán, Farkas, Kökönyei, Elekes and Demetrovics (2014) showed the relationship between PIU and Problematic Online Gaming (POG) among Hungarian adolescent gamers. There were more PIU than POG; both showed difference mainly in the case of sex. The time taken by POG per day was less on comparison with PIU and hence it was concluded that PIU met the criteria more than POG, but it was not a generalised one. In the case of depressive symptoms PIU had slightly more value. The authors concluded that POG and PIU are different cases.

Liu, Fang, Yan, Zhou, Yuan, Lan, and Liu (2015) conducted a study on 92 subjects involving 46 adolescents with internet addiction having age between 12-18 years with 46 parents of these people with age 35-46 years, with questionnaires and 3 months follow up with six sessions. The family group therapy was found to be effective in the reduction of internet addiction behaviours due to their psychological need satisfaction and communication between parents and children. This experiment demonstrated the necessity of family support system in the growth of children. The authors summarised the findings in such a way that internet addiction invites issues like problems in behaviour, family, education and other psychological issues. In the same year, Shorrock (2015) stated that addiction was mainly due to attachment problems happening in the childhood leading to various psychopathologies like depression, loneliness, low self-

esteem and cognitive dissonance. He recommended the psychodynamic approach and transference process as treatment tools.

Dalal and Basu (2016) did a descriptive research on internet addiction by asking four main questions: 'is it a disorder, is it an addictive disorder, what is the person addicted to, and how to diagnose that condition?'

Mohammadkhani, Alkasir, Pourshahbaz, Dehkordi and Sefat (2017) study with 400 high school class students in the district 5 of Tehran used statistical analysis and the results exhibited showed that there was no considerable difference in the usage of computer among boys and girls, and that there existed a significant relationship between internet addiction and mental issues like psychosis and anxiety.

Cruz, Scatena, Andrade and Micheli (2018) also dealt with the negative impact of internet addiction in an individual's life affecting both physical and mental health. They pointed out the necessity of caring by the family members on such groups also. Kumar and Mondal (2018) reported a study with 200 students from different colleges of Kolkata using Young's Addiction Scale, Symptom check list-90-revised (Derogatis and Savitz, 2000) and Rosenberg's (1965) Self-Esteem Scale. They could understand that depression, anxiety, low self-esteem and interpersonal difficulty were closely associated with internet addiction. They added that internet addicted students were suffering from social anxiety and failure of family relationships. Bisen and Deshpande (2018) have given a detailed review and various treatment methods used for internet addiction, and concluded that the use of internet could be a gratification for many psychological problems, that the symptoms were almost same as that of substance addiction, and it demanded treatment all over the world.

Kurniasanti, Assandi, Ismail, Nasrun and Wiguna (2019) showed IAD could be compared to substance addiction since both showed tolerance, withdrawal, inability to quit and disability in day-to-day functioning. One difference found was the absence of any physiological change which was present in substance use. Neurological and neuroimaging studies indicated that internet addiction caused changes in the prefrontal cortex which was same as other addictions. Brain structure changes were also possible in the temporal cortex and ventral striatum, leading to impulsiveness and inability to control the use of internet.

A survey conducted by Guo, Tao, Li, Lin, Meng, Yang, Wang, Zhang, Tang, Wang, Deng, Zhao, Ma, Li, Chen, Xu, Li, Hao, Lee, Coid, Greenshaw and Li

(2020) among undergraduate students revealed that, in the case of moderate to severe addictions, depression was found associated with internet addiction along with other mental disorders such as psychotism, paranoia and suicidality. Viganò, Molteni, Varinelli, Virzi, Russo, Osso and Truzoli (2020) conducted a study on 522 students including 279 from traditional teaching schools and 243 from online teaching. Only 1.13% of the total sample exhibited internet addiction and 53.83% were at the risk of development of internet addiction. Students having risk of addiction among them spent 4-7 hours in internet by the traditional teaching group while only 1-3 hours by the other group (online teaching group). Hence, no significant difference was found in two teaching modes on internet addiction. They have concluded here that there is no connection between online education and problematic internet usage.

Bickham (2021) reported that internet addiction was prompted by psycho-pathology such as impulsivity, aggressive behaviour and neuroticism. He also suggested the application of CBT and medicine were beneficial for the treatment of associated problems of mind like depression and ADHD produced as a result of internet addiction.

Zenebe, Kunno, Mekonnen, Bewuket, Birkie, Necho, Seid, Tsegaw and Akele (2022) conducted a community based research upon 603 students of Wollo University in Ethiopia to find out the prevalence and other related factors of internet addiction. The study showed that students had high level of internet use and such people spent more time online and possessed mental disturbances and alcohol use. Milková, Kaliba and Ambrožová (2022) studied internet addiction with 3366 undergraduate students of Czech Universities, using the CIAS-R questionnaire, and reported that male students were addicted to internet due to the problems of interpersonal relationships, health issues and time management difficulties, whereas females suffering from tolerance concerns were addicted with internet. Students of various streams were involved in the survey; which 50% were from the education stream and the majority of addicted students were from this stream and the authors pointed out that those students are future teachers. In the same year, Rashmi, Bhavna, Riya, Rajiv, Mehak, Basrat, Taswinder and Sunil (2022) conducted a study with 480 students of 2 professional colleges including medical and engineering streams in the Jammu region. They used questionnaires - Young's internet addiction scale and DASS 42 scale for measuring depression, anxiety and stress. Analyses were conducted with PSPP software and found a positive correlation of internet addiction with psychological disorders such as depression, anxiety and stress.



The authors emphasised the need to develop efficient strategies for the prevention of this disorder.

Powale (2023) has collected data regarding internet addiction from books, journals, e books and different Google sites, and indicated that there was a good amount of connection between internet addiction and psychological health of adolescents. She concluded that addiction to internet can lead to depression, anxiety and poor mental health and she invited the attention of parents and teachers to give awareness to students for the effective use of internet. Mukund (2023) conducted a study on 30 college students (18-23 years) to find out the relationship of their studies with addictions such as internet and social media. He could trace out the results as the negative correlation of academic work with internet addiction and also social media. But a positive correlation existed with internet addiction and entertainment.

### Summary of the literature review

The review collected from 1995 to 2023 revealed that people get addicted with internet mainly due to some existing psychopathologies and these pathologies would be enhanced due to the addiction. There exists a close relationship between internet addiction and different types of psychopathologies such as, depression, anxiety, mood disorder, ADHD etc.

Young, who was a pioneer in the field of studies on internet addiction for several years starting from 1995 and extending to 2016 reported that people go for internet usage as an escape hatch to their psychological issues (Young, 1996, 1998, 2004, 2009). There were many other reports which supported Young's views (Shaffer, 1996; Brenner, 1997; Martin and Schumacher, 2000; Davis, 2001; Caplan, 2002; Kim and Kim, 2002; Leung, 2007; Caplan, 2007; Bakken, 2009; Lee, 2012; Király et al 2014; Mohammadkhani et al 2017; Bisen and Deshpande, 2018; Kumar and Mondal, 2018; Wanjun et al 2020; Bickham, 2021; Milkowa et al 2022; Rashmi et al 2022 and Zeneba et al 2022).

There were reports for the treatment of internet addiction by many psychologists which involved: CBT (Davis, 2001; Young, 2009, 2011; Du, Jiang and Vance, 2010; Bickham, 2021), the use of SSRI-quetiapine by Atmaca (2007); and the family group therapy by Liu et al (2015).

It seems likely that IAD might be masking several disorders like depression, anxiety, fear, loneliness, worthlessness, introversion etc. I have had experience with several teenage clients where treatment has uncovered that their apparent addiction was because the time on the internet meant they were 'distracted' from other problems. When those issues were addressed within the

therapy (Transactional Analysis), the addiction was also resolved.

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