

## **Internet Addiction and Psychosocial Factors: An Empirical Perspective**

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### **Abstract**

Addiction can come in various forms, and its current definition has been expanded. Investigators converge on the understanding that internet addiction involves ‘problematic computer usage’, consumes ‘excessive time’ and brings out distress or impairs functioning in various areas of life. The addictive use of internet has a wide range of adverse consequences affecting many domains of the individual’s life. This paper reviews these with evidence from literature as well as trends observed in the clinical setup.

*Keywords:* addiction, co-morbidity, internet, misuse

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In the contemporary world, internet has been used for academic, business, entertainment, and administrative purposes. India which consists of 460 million network users, is globally the second largest virtual marketplace. In 2021, on an estimate, there will be around 635.8 million internet users. In 2015, around 26% of the Indian population had used the internet, which indicates a significant increase when compared with the preceding years. In terms of gender, men (71%) were seen to have higher internet usage when compared to women (29%) in India (Statista Research Department, 2018). There are 8.5% of internet users in India. Mumbai with 3.24 million users holds the first place, and Delhi with 2.66 million users holds the second place in terms of the number of internet users in the age-group of 16-45 years (Internet World Stats, 2011); the internet users are males; in the United States, 87% of teenagers in the age-group of 12-17 years use the internet as compared to 73% in 2000 and 66% of internet users in other western and European countries (Lenhart, Madden, Macgill, Manager, & Smith, 2007).

Internet use has become a modality to augment social interaction. Different theoretical perspectives are available to understand internet use such as gratification theory, learning theory, reward deficiency hypothesis, cognitive behavioral model and social skills deficit theory (Blum et al., 2000; Caplan, 2003, 2010; Caplan & High, 2006; Davis, 2001; Larose, Mastro, & Eastin, 2001; Wallace, 2016; Young, 2007). Self-development, a wider exposure to information, relaxation, surfing for career opportunities, and global exchange are the most common reasons for internet usage. Light and heavy users differ significantly in gratification factor, such as user friendliness and career opportunities (Roy, 2009).

Addiction can come in various forms, usually it is in association with urges that are uncontrollable, mostly accompanied with the loss of control in its usage, where they are preoccupied with its use, and continue its usage despite problems that it causes in behavior. A study by Rachlin (2007) comes across as contrary to the earlier concept that ingestion of

drugs were the only cases referred to using the term addiction. The current definition of addiction has expanded to an extent that behaviors in absence of intoxication are included. For example, Griffiths (1990) explains about compulsive gambling, Keepers (1990) explains about video game playing, Lesieur and Blume (1993) about excessive eating, Shea and Morgan (1979) on exercise, Peele and Brodsky (2019) on romantic relationships, Burns and Anderson (2011) on watching television and internet use. In fact, some academicians allege that high usage of internet can be subsumed under the more “generic label of technological addiction” (Griffiths, 1990).

“Internet addiction” has been generally used to represent a series of behaviors related to the dysfunctional use of computers characterized by “excessive or poorly controlled preoccupations, urges or behaviors concerning computer use and internet access leading to impairment or distress”. Despite the popular attention that internet addiction receives, the scientific understanding has to be addressed especially due to a “lack of a common/mostly considered definition and reliable terminology”. Until now, there have been no commonly acknowledged explanations for the condition. However, investigators converge on the understanding that it involves ‘problematic computer usage’, consumes ‘excessive time’ and brings out distress or impairs functioning in various areas of life. The addictive use of internet has a wide range of adverse consequences affecting many domains of the individual’s life. A brief description of relevant long-term implications is given below.

### **Health and Physical Problems**

Physical consequences of an “addiction to the internet” is minimal when compared with other substance addictions. Generally, users who are “addicted to internet” spend around 40 to 80 hours in a week on the internet which at a stretch sometimes can last even up to 20 hours. This leads to further late-night log-ins to accommodate the excess time spent on the internet affecting sleep patterns. Staying up “late into the night and having to wake up early

for work or school becomes the norm leading to excessive fatigue, further impairing academic or occupational functioning, and possibly decreasing one's immune system". The lack of proper exercise through the extended use of computers in a sedentary position may "lead to an increased risk for problems like carpal tunnel syndrome, back strain, or eyestrain" (Young, 1999).

### **Familial Problems**

Young (1996) found that "significant relationship problems were reported by 53% of those addicted to internet on a survey." Internet addicts, in exchange for "more solitary time in front of a computer gradually spend less time with people in their lives". "By net binges, marriages, dating affairs, parent-child relationships and close friendships have been noted to be severely disturbed." Further, tasks at home are disturbed due to Internet use; and this brings about marriage disturbances as typically, the partner who performs the neglected errands feels like a "Cyberwidow".

Over time, online relationships may replace the "time spent with real life people". The spouse addicted to the internet will socially 'isolate himself or herself', refusing to participate in 'going out to dinner, attending community or sports visits, or travel and preferring the company of online companions which he/she used to enjoy earlier.' Continuation of the 'romantic and sexual relationship online' may further deteriorate the 'stability of real-life couples' leading to the unaffected spouse responding in 'confusion, frustration and jealousy' towards the addicted spouse.

In what can be seen as similar to alcoholics who tried to hide their addiction, internet addicts engage in the same lying behavior about how long their internet sessions really last or they hide bills related to fees for internet service. Similar characteristics produce distrust and over time hurt the quality of once-stable relationships (Young, 1999).

### **Academic Problems**

Though touted as a premier educational tool, the internet has been found to not improve performance in children (Barber, 1997, March) as “information on the internet is too disorganized and detached from the school curriculum and textbooks, and therefore not effective in helping students perform better on standardized tests; there was an association as well shown between internet addition and academic problems” (Busari, 2016; Ghulami, Rashid, Hamid, & Ibrahim, 2018; Hayati, Alavi, & Shafeq, 2014). Fifty-eight percentage of students were found by Young (1996) to show a “fall in study habits, a significant drop in grades, missed classes and being placed on probation because of excessive internet use”. This further brings into question the educational value of the internet. Despite using internet just for productive academic activity, other activities such as surfing on irrelevant websites, conversing in chat rooms, communicating with internet pen pals and engaging in interactive online games are also seen among students.

### **Occupational Problems**

Managers as well as industries report internet misuse as a significant issue among employees. Though the internet benefits employees through support for anything ranging from market research to business communication, it is also seen as a definite distraction for many employees; the negatives are also equally present. Due to easy provision of a tool that can be misused by the employees, managers and corporations, at large, report the problems the internet can lead to in the workplace.

Due to the ready availability of the internet and the easy flexibility in the schedules of the current student population group, they are considered to be vulnerable and at risk due to the danger posed by “excessive internet use”. This has also been indicated in several studies (Moore, 2013). Comparatively, 15- and 16-year-old adolescents show high level of internet addiction than the 11-12 years age-group (Karacic & Oreskovic, 2017).

“Forty seven percent (127) of male and 44.5% (93) of female students showed severe pattern of internet addiction followed by 27.1% (72) of male and 33.9% (71) of female students with moderate internet addiction, while 20.7% of male (55) and 7.7% (16) of female students were found to have mild internet addiction”. There was a significant relationship between “internet addiction and sex ( $p < 0.001$ )”. Also, it was seen that “29.7% (79) of male and 32.5% (68) of female students were found to experience psychological distress”. Further, around 44.7% (119) of male and 41.6% (87) of female students met the criteria for depression. There was significance in terms of “year of study and residential status ( $p < 0.001$ ,  $p < 0.05$ ,  $p < 0.001$ )” and showed significant differences between “internet addiction and psychological depression”. The implication of the study was that undergraduate students were at a higher risk for ‘internet addiction’ and its subsequent impact on ‘psychological distress and depression’ (Uddin et al., 2016).

People with “internet addiction” had significantly “lower scores on social support questionnaire ( $p < 0.01$ ), life purpose scale ( $p < 0.05$ ) and thrill and adventure seeking (TAS) ( $p < 0.05$ ) when compared to the control group”. Scores on “objective support, utilization of support and sensation seeking” were found to be “good predictors of internet addiction.” People with “internet addiction have significantly lower score on the lie scale of EPQ than non-addicts ( $p < 0.01$ )” (Ying & Gao, 2011).

Students who use internet for six hours or more in a day reported greater incidence of “psychiatric conditions somatization, obsessive compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychotic episodes”; these were commonly found in people with “internet addiction” (Ying & Gao, 2011). “Internet addiction” predicted levels of depression, anxiety, and stress (Akin & İskender, 2011). There were “significant relationships between internet use and quality of relationships with significant others”. Visiting a “sexually explicit website” was the exemption and it

served a purpose similar to that of substance use (Shields & Kane, 2011). Predominantly the “two-way communication functions available on the internet like chat rooms” (Kheirkhah, Juibary, & Gouran, 2010). Depression, ADHD, social phobia, and hostility predicted the propensity of internet addiction in 2-year follow-up. Among these, hostility and ADHD were the most significant predictors of internet addiction in male and female adolescents, respectively (Ko, Yen, Chen, Yeh, & Yen, 2009).

Internet users were associated with co-morbidities with the prevalence of “14% in ADHD, 7% in hypomania, 15% in generalized anxiety disorder, 15% in social anxiety disorder, 7% in dysthymia, 7% in obsessive compulsive personality disorder, 14% in borderline personality disorder and & 7% in avoidant personality disorder” (Bernardi & Pallanti, 2009). Loneliness, depression, and computer self-efficacy were significant predictors of problematic internet use (Ceyhan & Ceyhan, 2008). Loneliness was found to be more common among “adolescents who reported excessive uses of the internet for web surfing, instant messaging, emailing and online games and had a significantly higher mean score of loneliness (Male=34.685 ± 8.600; Female=37.975 ± 8.731)” than non-users. “Men reported a higher frequency of internet usage and subsequently more loneliness than women whereas women reported higher frequency of emailing (Erdoğan, 2008). Neuroticism, psychoticism, and lie scale scores were relatively higher than the control group (Cao & Su, 2007). Presence of caffeine abuse, sex, relationship submissive, gambling, food starving, and food binging whereas 5.4% of the students had internet addiction (Pallanti, Bernardi, & Quercioli, 2006). Seventy percent had the current diagnosis of bipolar disorder and 80% had a lifetime diagnosis, “35% met the criteria for an Impulse Control Disorder, including intermittent explosive disorder (10%), kleptomania (5%), pathological gambling (5%), and compulsive buying (20%) with Problematic Internet users (Shapira, Goldsmith, Keck Jr.,

Khosla, & McElroy, 2000). Substance use (38%), mood (33%), anxiety (19%), psychotic symptoms (14%) were also noted (Black, Belsare, & Schlosser, 1999).

### **Clinical Observations**

Many research studies have been done by SHUT (Service for Healthy Use of Technology) Clinic, NIMHANS. The findings are: The SHUT Clinic receives 7–8 cases per week about gaming problems. Cyberbullying is experienced by every third treatment-seeker from other online gamers. As the e-sport market is still in its nascent stages in India, there is a scarcity of national surveillance data here. Therefore, cyberbullying is proving to be a risk towards developing psychiatric cases in the young adult group, especially since the population of gamers in this age group is growing rapidly (Holfeld & Sukhawathanakul, 2017).

According to a study by Rajanna et al. (2016), 19.5% (39) of their adolescent sample had an addictive use of gaming and 15.5% (931) of the adolescents had an addictive use of the mobile phone. Further, addiction showed a positive correlation with problems in day-to-day activities like socializing, playing sports, academics and emotional regulation. In another study on addiction (Sharma et al., 2018) reported the presence of pathological gambling 1.2% of the sample, along with the presence of eating, mobile phone, or television addiction. The willingness to alter these behaviours was reported by only 0.3% of the participants.

The indulgence in pornography in relation to cues; problematic use of internet and psychiatric cases was observed by Sharma (2015). Shrivastava et al. (2016) in their study on employees, found that the mobile phone was used by 29.6% of the participants; some participants (58.8%) used the mobile phone in addition to other devices like the desktop, tablet, laptop. Further, a change in workplace productivity as a result of non-work-related use of the internet was reported by 64% of the sample and a delaying of professional activities due to internet usage was conveyed by 42% of the participants. Around 3% to 5% of the



participants also preferred internet usage over daily activities such as working, having meals, maintaining personal hygiene and interacting with family members. Results also revealed that the most frequently used application was WhatsApp followed by Facebook and Gmail. Hike and Hangout, which are messenger and gaming applications were not used very frequently. Participants experienced a delay of 1.6 hours towards bedtime and a delay of 1.5 hours during wake time in the morning as a consequence of internet use (Shrivastava, Sharma, & Marimuthu, 2016).

Another study by Shrivastava et al. (2018) aimed to explore internet use and addiction at the workplace. The sample consisted of Indian employees (N=250) with a mean age of 30.4 years. Results showed that 9% of the sample were found to be 'at risk' of developing addiction due to internet usage. Further, it was found that a majority of those in the 'at risk' category reported a delay in professional activities and an alteration in productivity rates. Moreover, those participants belonging to this category also showed postponement of sleep, family time, personal hygiene activities and meal times.

A study by Sharma et al. (2017) intended to explore the link between the use of social networking sites and psychological outcomes such as self-esteem, interpersonal relationships and social capital. The sample (N=93, 17-37 years) included participants from the general population (63) and the clinical population (30). Findings indicated a positive association between use of Facebook; and online bonding and bridging capital. A majority of participants belonging to the clinical group were found to experience problem use of the internet. Further, such participants scored higher on online bridging capital and interpersonal conflicts; and scored lower on self-esteem and real-life bonding capital; in comparison to average Internet users.

Sharma et al. (2016) in their study found that internet users experienced internet addiction along with addiction to video game as well. A qualitative investigation indicated

that a interlink among easy availability/accessibility of internet-equipped devices, loneliness and free time. Ramachandra et al. (2016) found a 5.2% of problematic internet usage in their sample. With respect to preference of internet applications, Gmail was used more than Hangout, gaming apps and other online messaging apps. Further analysis also revealed a significant correlation between problematic internet use and loneliness. Also, 1.3% of the participants experienced problems with respect to the status of food, television and shopping.

There is a need to sensitize mental health professionals for screening excessive use of technology devices, developing evidence of exploring its addictive properties as well as developing psychosocial intervention for users and caregivers (Sharma et al., 2017). It is necessary to screen technology use as a co-morbid condition with psychiatric disorder and educate users to promote technology use in a healthy manner (Sharma, Tadpatrikar, Anand, Kannekanti, & Haleemunnissa, 2016). Offline modalities of receiving psychological/psychosocial support should be encouraged amongst users in addition to developing productive coping strategies that can be used without making use of technology (Sharma, Chaturvedi, & Mellor, 2017).

### **Discussion**

Majority of the internet users were 18–29 years (98%) (Statista Research Department, 2018). Recent literature had a consistent finding that most of the internet users were males than females (Cao & Su, 2007; Çardak, 2013; Carli et al., 2013; Lin, Ko, & Wu, 2011; Wu et al., 2013); Post-graduates and those who belonged to an urban background had more usage of internet (Smith & Anderson, 2018). “Age, gender, income and education were the key factors of internet access” (Zhou, Fong, & Tan, 2014). In India, internet use through mobile phone was 79% (Telecomlead, 2017, March) whereas 20% of US adults were using internet (Smith & Anderson, 2018).

Recreational or leisure activity used voluntarily or in free time, outdoor activities are

also one of the essential components of a healthy lifestyle (Xin et al., 2018) whereas subjective well-being may be improved through involving leisure activities which could be fulfilling life values and needs (Brajša-Žganec, Merkaš, & Šverko, 2011; Hamburger & Ben-Artzi, 2000; Lee, 2009; Leung, 2008; Zhou et al., 2014). There were various kinds of associations between leisure activity and internet use; there was no significant impact especially negative and minimal engagement in terms of physical activities (Zhou et al., 2014).

“Excessive/addictive use of internet occurred due to lack of self-esteem, lack of motivation, fear of negative evaluation, social avoidance experiential in depressed individuals (Cash, Rae, Steel, & Winkler, 2012) while ‘pathological internet use was associated with loneliness (Morahan-Martin & Schumacher, 2003) and academics, low self-esteem, social as well as interpersonal problems” (Niemz, Griffiths, & Banyard, 2005).

The reviews suggest that internet use or internet addiction were associated with various psychosocial factors across age-groups. Associations were seen for psychological depression/distress, anxiety, stress, loneliness, interpersonal sensitivity, paranoid ideation, psychoticism and sensation seeking, subsequently psychiatric co-morbidities were related with “obsessive compulsive personality disorder, borderline personality disorder and avoidant personality disorder and impulse control disorders like intermittent explosive disorder, kleptomania and pathological gambling.” Internet use and/or internet addiction also had co-morbidities like alcohol use/substance use, gambling and food bingeing as well as personality disorders like borderline, antisocial and narcissistic personality disorder.

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