

Internet-Passion or Obsession


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Scientists traditionally use the term 'Addiction' for substances that clearly abet physical dependence. However new studies indicate that as far as the brain is concerned a continuous sequence of rewards can even risk the brain to be trapped in a ceaseless chain of compulsion. Irrespective of the reward, it's like a chemical reaction or an experience such as eating, gambling, etc. Internet addiction is the latest form of addiction. Moreover, various studies have shown the escalated influence of excessive internet use on the masses. This attracted the considerable attention of media and researchers. Internet Addiction (IA) causes severe changes in lifestyle. It affects not only physically but also mentally. It hijacks our hormones and causes several disruptions. It can change the basic nature of a person, which could even hassle out real life. This paper aims to provide brief information on IA, its causes, its symptoms including both mental and physical, diagnosis, and its treatment. In this article, the effect of the internet on our society is mentioned. The familiar nature with the benefits of the internet is quite well known, but it is also important to note the second face of the card.

Keywords: Internet, Internet addiction, Compulsive internet use

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Badging of Internet Addiction Disorder

Internet addiction is a subcategory of technology addiction as television addiction, electronic devices, etc. Technology addiction can be defined as caprice and torment use of technical gadgets like mobile phones, tablets, laptops, etc.

There are conflicting reports about whether it's classified as a separate disorder or not. There are various conflicting studies on it. A

Study suggested that internet addiction disorder is a structural abnormality in gray matter.

However, studies observing the effects of internet addiction on microstructural integrity of neuronal fiber pathways evaluated no such kind of changes during the course of addiction [1].

Internet addiction disorder (IAD) or compulsive internet use (CIU) or problematic internet use (PIU) was first theorized in 1995 by Dr. Ivan Goldberg.

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He compared his model to that of pathological gambling [2]. Later, Kimberly Young, PhD proposed a text revision in her seminal 1996 paper [3].

Since then IAD has been the topic of assiduous study. But still, there is a wrangling debate, that if it should be considered as a disorder or not. Yet so far Diagnostic and Statistical Manual of Mental Disorder has not included it as a disorder. In contrast, they accept the fact that scrutiny of the topic is a need of time.

Inducer of internet addiction

In the present scenario, it's onerous to completely avoid the internet use. From emails to web meetings, webinars, dairies, information, etc. The use of the internet is essential. But what causes people to be the gofers of the internet. Here are a few causes:

Hijack center of pleasure [4]

Like any other addiction disorder, IAD also affects pleasure sensations. Every time internet is browsed, dopamine is released. Therefore, slowly and gradually dependency increases, and the person feels low when they are not surfing. To overcome this low feeling person takes the support of the internet and thus this cycle continues and makes that person addicted.

VRRS (Variable Ratio Reinforcement Schedule)- According to this theory net addiction can be the follow up of multiple layers of reward. For example, as the internet is opened, notification of friend requests pop-ups. It feels like a reward that people want to be friends with us. Similar continuous rewards stimulate us to frequently surf through the internet [4]

Biological predisposition- Pre biological deficiency of dopamine and serotonin can also make you addicted. People already suffering from this deficiency entail a more pleasurable experience. The Internet serves their requirements and they become addicts [4].

The corollary of depression and anxiety- Internet addiction disorder can be the consequence of anxiety and depression [4,5].

Virtual World- It is also seen that an addicted person finds a virtual world. In that world, they can achieve all things, which they possibly cannot in the original world. They feel satisfied, and want to spend time in their virtual world, that makes them

Addicted.

Table 1 shows facts of how people spend their time on the internet in different countries.

Table-1: Distribution of internet usage in different countries.

Country	How people spend their time on the internet			% Of people online at least for an hour
	Social Networking Site (%)	Online Entertainment (%)	Online Shopping (%)	
Brazil	58	25	09	71
Nigeria	57	14	19	66
India	54	18	11	53
Russia	52	24	16	56
South Africa	50	22	09	61
China	47	35	12	36
U. K	41	20	24	45
U. S	39	26	18	51
Germany	36	15	31	40
Japan	32	28	35	39

*According to a new report from business consultancy A.T. Kearney

Manifestation: Things not to be ignored

The symptoms of IA include both mental and physical symptoms. However, the symptoms are person peculiar, but some common symptoms and their reasons are given as follows: -

Physical

Backache and Neck pain: Because of the posture while surfing the internet. Addicted people sit for many hours in front of the screen.

Carpal Tunnel Syndrome: CTS can develop for various reasons. However, it is more likely if the person frequently uses extremes of wrist motion, if they are exposed to vibration, and if they repeatedly use their fingers, for example when typing.

Headaches [6]: Continuously staring at a mobile, laptop, or desktop screen for hours can cause a lack of circulation, exhaustion, eye strain that can cause headaches.

Insomnia: Small amounts of light from the devices pass through the retina into a part of the hypothalamus and delay the release of the sleep-

Inducing hormone, melatonin.

Poor Nutrition and Personal Hygiene: failing to eat and bathe to avoid being away from the computer or to stay online

Dry Eyes and other Vision Problems: It is believed that staring too long without blinking interferes with sufficient stimulation to the oil glands in the eyelids.

Weight Gain or Loss: Weight gain happens for those whose appetite is the same as before their addiction. Because of decrement in physical activities, the weight starts putting on. Opposite of that, if a person decreases his/her diet (i.e. 5th point).

Mental

Depression [7] and Anxiety [4]: Many studies, including research conducted by scientist Young from the University of Pittsburgh, in August 1995, about her new theory that the internet is becoming an addiction to people. It also shows that there is a relationship between internet addiction and depression.

Isolation leads to Loneliness: Spending hours in front of the screen, cut-off all social connections, and isolates us. Moreover, this isolation yanks into loneliness.

Feelings of Euphoria when using the Internet: IAD affects pleasure sensation. Oxytocin, dopamine [04], and serotonin are released during the surfing internet like any other addiction.

No Sense of Time: Addicted people don't notice the time while surfing the internet.

Avoidance of Work: It is found that maximum addicted people try to avoid work and spend that time on the internet.

The IAD causes several more hormonal disturbances which leads to many changes in the mental status of people.

For example Defensiveness, Agitation, Mood Swings, Fear, Dishonesty, Feelings of Guilt, Inability to Prioritize or Keep Schedules, etc.

A Glimpse of an addicted brain

Way beyond these physical and psychological consequences there is a completely biological wreck happening.

Various neuroimaging studies showed the mind of the person suffering from internet addiction disorder showed similar makeup as of those suffering from chemical dependency as drugs.

The examination also showed that there is a complete structural change of a part of the brain. The amount of gray and white matter in the prefrontal brain is affected. There is a decrease in grey matter volume and cortical thickness. Moreover, there is a loss in cortical volume in the striatum when the insular cortex is measured. These structural and functional changes affect the prefrontal brain, which is responsible for details, attention, prioritization, etc.

Diagnosis

According to KFF,

- 21% of youth are heavy media users, spending 16 hours with media a day
- 63% are moderate users, spending 3-16 hours a day
- Rest fall into the light user category, spending less than 3 hours with the media in a day.

Though internet addiction disorder is a much appurtenant issue so far there is no standard technique to diagnose it.

The Internet provides a number of advantages both in professional and personal life which makes it very complex to identify its harming effects. Still, there are few theories endorsed.

The most accepted theory is proposed by K.W. Beard's 2005 article. He gave five criteria's:

- Thinks about the previous online activity or anticipates the next online session, means you are preoccupied with the internet
- Needs to use the Internet with increased amounts of time to achieve satisfaction.
- Unsuccessful efforts to control, cut back, or stop Internet use.
- Restless, irritable, depressed, or moody when attempting to cut down or stop Internet use.
- Has stayed online longer than originally intended. Additionally, at least one of the following must be present.

There are few other types of tests and tools available too. For example, the Internet Addiction Test by Dr. Young.

Young developed an estimated list of eight criteria based on her study. She named it Internet Addiction Diagnostic Questionnaire (IADQ):

- How much one is preoccupied with the internet?
- Is time spent on the internet continuously increasing to gain satisfaction?
- The number of unsuccessful attempts in order to control, reduce, or quit the addiction.
- Effect on mental health (depression or anxiety) while reducing the internet uses.
- Unintentional uses of the internet for long durations.
- Impact on personal life: Like endangering personal contacts, job, relation, etc.
- Is the user using it as an escape route?
- Does the user want to keep his addiction a secret from family and helping professionals?

From the above Internet Addiction Diagnostic Questionnaire (IADQ), Dr. Young developed the most commonly used Questionnaire Called Internet Addiction Test (IAT). It included the twenty-item response scale. Each item was 5 points, scaled from 0 to 5. The maximum score was a hundred, a full hundred indicating severe addiction. According to it, there were four classifications made:

- 0 to 30 ranges on the scale meant the Normal users.
- 31 to 49 meant the Mild Addicts.
- 50 to 79 are Moderate Addicts.
- 80 to 100 are the most dangerous Zone indicating the Severe Addicts.

Dr. Young's IAT Questionnaire [8] has well-founded genuine and reliable responses in many parts of the world. However, there are few more research on this intricate issue. One among these is by Demetrovics Z, Szeredi B, Rozsa S named Problematic Internet Use Questionnaire.

It included various demographic information as age, gender, marital status, race, and the number of hours spent online per work.

The Problematic Internet Use Questionnaire (PIUQ) [8] a self-report, including eighteen items. These items are subdivided into three subscales each including six questions, each question rewarded with 1 to 5 points. The higher the score, the greater the problem. Here is the description of three subscales:

- The first subscale is named the Obsession subscale. It is based on psychological fixation like feelings of distress, anxiety, depression, worry, etc. one may experience when unable to use the internet.
- The second subscale is named as Neglect subscale. This scale defines the level of negligence towards one's own obligatory task as work, family, self-care, etc.
- And the third subscale is the Control Disorder subscale. This scale measures the level of the inability in order to control and reduce excessive internet usage.

The above researcher measured various domains as the effect of physical health issues interference with

Normal social functioning, work functioning, and the physical activities of daily life also the effect of emotional problems interfering with work functioning [9].

Several other diagnostic criteria and theories have been introduced but none has emerged as the ideal one. However, Chen's Internet addiction scale (CIAS), the Internet addiction scale (IAS), and the Compulsive Internet Use Scale are few other reliable concepts. Nevertheless, there is still a cry out for the for-by discoveries.

Handling of Internet Addiction Disorder

The complete snub of the internet is not possible. But assessed balanced use can ease out the things. There are a few steps of treatment cataloged:

Firstly recognize- keep vigilance of the changes you are going through either psychologically or physically. Accept the problem instead of disdaining it.

Resolve it solo- Try to overcome it chaperoned by corrective behavior. If still there is no improvement, then go for the next step.

Medication- Though still there is no specific medicine for this disorder particularly. But medicines for anxiety and depression proved effective enough. In a few cases, screen time has reduced from 35 hours a week to 16 hours through these medicines.

Antidepressant drugs: serotonin [10] reuptake inhibitors, showed some positive aspects of its use in IAD. Escitalopram (20–30 mg/day) has been tested to reduce the time spent online and also

Improve the mood of the addicts. Better evidence from the use of the antidepressant bupropion (150–300 mg/day), (dopamine and norepinephrine transporter inhibitor and nicotinic acetylcholine receptor antagonist, also employed for smoking cessation) has been cited. It causes reductions in desire and the time spent in online gaming. Bupropion also reduces the depression caused due to the addiction to the internet.

Exercise- Endeavour yourself to do more and more physical exercise. During physical activity serotonin hormone is released.

Therapy- Therapies can help a lot in such disorders. A few of these therapies are Equine Therapy, CBT (Therapy), Art Therapy, Reality Therapy, etc. Proper counseling and self-control training can be vital.

Family Therapy: FT [4,10] is also known as Family counseling, it is a form of treatment used to solve specific issues that are responsible for the effect on functioning and health of the family. Although, according to Young, IA is difficult to be treated, in family therapy, each session always gives positive changes in the patients. Research shows [9] that family cohesion plays a vital role in the treatment of problematic online games-playing.

Reality Therapy: [4,11] It is a psychotherapy approach. Its goal is to help patients to accept responsibility for their behavior and take a more desirable action. It creates a mindset that these psychological symptoms occur due to irresponsible behavior, rather than because of any mental illness. This mindset encourages people to improve their lives by changing their irresponsible behavior. According to Kim, RT is a core addiction recovery tool that has a number of uses as a treatment, including Internet Addiction. Another drug named as Methylphenidate (a psychostimulant drug) was also used to treat [4] 62 internet videogame playing children. They were also diagnosed with the attention-deficit hyperactive disorder. After eight weeks of treatment, a major reduction in the time of online gaming was noticed.

Acceptance and Commitment Therapy: Twohig and Crosby introduced this therapy in an article [12]. ACT holds promise as a treatment for Internet pornography viewing because of its focus on processes hypothesized to underlie this maladaptive behavior. They performed their first experiment to treat 6 adults, as they were addicted to Internet pornography viewing and claimed that the addiction

Has started affecting their quality of life. So, they were treated with eight sessions of 1.5 hours each for their addiction. As a result, a reduction of 85 percent in time of addiction, at post-treatment the result is being maintained at three months follow up.

CBT: [4,13] Cognitive Behavioral Therapy, it is a talking therapy that helps to overcome the problem by changing the way of thinking and behaving.

Researchers have found IA to be similar to impulse Control disorders [13]. CBT is the best treatment for impulse control disorders because the focus of this treatment exposes the relationship between behavior and thought. CBT usually requires three months of treatment or approximately twelve weeks of the session. In the early stages, the therapy focuses on specific behavior and situations where the disorder causes major difficulty. Along the time the therapy focuses more on cognitive assumptions and also the distortion that has developed. It also considers the effects of these distortions on the behavior.

Predominantly will power and corrective nature can curb on our internet usage.

An online survey of adults in few countries shown in Table-2 clearly tells the intensity of the addiction.

Table-2: Results from an online survey of adults in different countries about the intensity of addiction.

Country	People who can't live without internet (%)
India	82
Russia	66
China	77
U. K	78
U. S	73
Germany	73
Spain	65
France	64
Italy	62
Japan	62

Online pole of adult (sep-09 to Nov-10 2017)
Source: Ipsos

Cessation

Technological evolution geared up exponentially in the last few decades. There are a number of interesting, exciting, and innovative products introduced. The introduction of the Internet is also

CPT	Cognitive Behavioural Therapy,
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One such byproduct.

The Internet is a huge source of knowledge, fun, information, etc. It plays a vital role in the study, entertainment, news, accessibility, communication, and many more. But it is being used in a very embezzled way. The profusion of anything is always perilous. Today in this modern and technical era, the use of the internet cannot be completely stopped but can definitely be controlled.

Nowadays the IAD is also becoming very common among children. Parents often give their mobile phones or other devices to children to divert the child's mind. Slowly the child gets addicted, and then the child starts demanding. Several young age students get distracted from their goals, some start playing gamble, or some get indulged into cybersex, some in cyber relationships, some in online gaming.

IAD still does not get a separate and definite status of disease or disorder in the Diagnostic and Statistical Manual (DSM), its diagnosis is also in a conflicting situation. Apart from that, this addiction is increasing rapidly, and many kinds of research are still on the way.

Conclusion

There is also a need for an indispensable awareness about Internet Addiction in the masses. The internet should be used in a limited and wise manner. There should be an emphasis on only necessary uses of it. One should stop checking the phone continuously; one may try to leave your phone at home while going outside with the family and spend some time with friends and loved ones. Awareness about its symptoms and effects should be obligatory to all internet users. People going through such sort of addiction need to accept it and should readily take the help of professionals. Restrain the uses of technology else technology will ruin you.

Abbreviation used

Abbreviation used	Full form
IA	Internet Addiction
IAD	Internet Addiction Disorder
CIU	Compulsive Internet Use
PIU	Problematic Internet Use
VRRS	Variable Ratio Reinforcement Schedule
DSM - 5	Diagnostic and Statistical Manual of Mental Disorders
FT	Family Therapy
RT	Reality Therapy
ACT	Acceptance and Commitment Therapy

Reference

01. Yuan K, Qin W, Wang G, Zeng F, Zhao L, Yang X, et al. Microstructure abnormalities in adolescents with internet addiction disorder. PloS one. 2011;6(6)e20708. doi: 10.1371/journal.pone.0020708 [Crossref]
02. Bagby RM, Vachon DD, Bulmash EL, Toneatto T, Quilty LC, Costa PT. Pathological gambling and the five-factor model of personality. Personal Indi Diff. 2007;43(4)873-880. doi: 10.1016/j.paid.2007.02.011 [Crossref]
03. Young KS. Internet addiction- The emergence of a new clinical disorder. Cyberpsychol Behav. 1998;1(3)237-244. Available at [Article] [Crossref]
04. Cash H, D Rae C, H Steel A, Winkler A. Internet addiction- A brief summary of research and practice. Curr Psychiat Rev. 2012;8(4)292-298. doi: 10.2174/157340012803520513 [Crossref]
05. Young KS. Psychology of computer use- XL, Addictive use of the Internet- a case that breaks the stereotype. Psychol Rep. 1996;79(3)899-902. doi: 10.2466%2Fpr0.1996.79.3.899 [Crossref]
06. Young KS. Internet Addiction Manual- Scoring. Center for Internet Addiction Recovery. Available at <http://netaddiction.com/wp-content/uploads/2015/11/IAT-Manual.doc> [Crossref]
07. Rabadi L, Ajlouni M, Masannat S, Bataineh S, Batarseh G, Yessin A. The relationship between depression and internet addiction among university students in Jordan. J Addict Res Ther. 2017;8(6)349. doi: 10.4172/2155-6105.1000349 [Crossref]
08. Demetrovics Z, Szeredi B, Rózsa S. The three-factor model of Internet addiction-The development of the Problematic Internet Use Questionnaire. Behav Res Meth. 2008;40(2)563-574. doi: 10.3758/BRM.40.2.563 [Crossref]

09. Headache Triggers and Tips (website blog). Mount Sinai Center for Headache and Facial Pain, New York. Mount Sinai. Available at [Article] [Crossref]
10. Twohig MP, Crosby JM. Acceptance and commitment therapy as a treatment for problematic internet pornography viewing. Behav Therap. 2010;41(3)285-295. doi: 10.1016/j.beth.2009.06.002 [Crossref]
11. Young KS. Cognitive behavior therapy with Internet addicts- treatment outcomes and implications. Cyberpsychol Behav. 2007;10(5)671-679. [Crossref]
12. Łukawski K, Rusek M, Czuczwar SJ. Can pharmacotherapy play a role in treating internet addiction disorder. Journal Expert Opinion on Pharmacotherapy. 2019;20(11)1299-1301. doi: 10.1080/14656566.2019.1612366 [Crossref]
13. Han DH, Kim SM, Lee YS, Renshaw PF. The effect of family therapy on the changes in the severity of on-line game play and brain activity in adolescents with on-line game addiction. Psychiatry Research- Neuroimag. 2012;202(2)126-131. doi: 10.1016%2Fj.psychresns.2012.02.011 [Crossref]