

Internet addiction: reappraisal of an increasingly inadequate concept

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This article re-examines the popular concept of Internet addiction, discusses the key problems associated with it, and proposes possible alternatives. The concept of Internet addiction is inadequate for several reasons. Addiction may be a correct designation only for the minority of individuals who meet the general criteria for addiction, and it needs to be better demarcated from various patterns of excessive or abnormal use. Addiction to the Internet as a medium does not exist, although the Internet as a medium may play an important role in making some behaviors addictive. The Internet can no longer be separated from other potentially overused media, such as text messaging and gaming platforms. Internet addiction is conceptually too heterogeneous because it pertains to a variety of very different behaviors. Internet addiction should be replaced by terms that refer to the specific behaviors (eg, gaming, gambling, or sexual activity), regardless of whether these are performed online or offline.

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Introduction

Internet addiction has become a very popular term, not only in the lay literature but also in scientific and professional publications. A recent PsycINFO search using “Internet addiction” as a key word for the period between 1995 and 2015 yielded 1079 publications. While this interest in Internet addiction may reflect progress in our understanding of the phenomenon, it may also point to an overuse of the term. The purpose of this article is to re-examine the concept of Internet addiction, discuss the controversies and key issues associated with it, and offer possible alternatives.

Conceptualization, Conundrums, and Criteria

There is no widely accepted definition of Internet addiction. A commonly encountered definition is that Internet addiction refers to “excessive or poorly controlled preoccupations, urges or behaviors regarding computer use and Internet access that lead to

impairment or distress”¹ (p. 353). This definition incorporates excessiveness, poor control, preoccupations, urges, computer use, Internet access, and the consequences in terms of impairment or distress, but it does not explain why the behavior or the disorder in question is referred to as “addiction.” Therefore, it is not surprising that various other terms have been proposed as an alternative to Internet addiction. They include “pathological Internet use,”^{2–5} “problematic Internet use,”^{6–9} and “compulsive Internet use,”^{10,11} among others. These terms have been implicitly, and sometimes explicitly, used as synonyms for Internet addiction, although they do not necessarily refer to the same problem.

Terminological and conceptual conundrums are responsible for the variety of assessment instruments developed to measure Internet addiction and for the frequent lack of concordance between them. These assessment issues, along with the significant differences between study samples and other methodological problems, have resulted in very different epidemiological findings. Thus, point prevalence rates of Internet addiction and related disorders have been reported to range from 0.7% in a general survey of adults in the United States⁶ and in Indian high school students¹² and adolescents¹³ to 25% in a sample of college students in the United States.¹⁴

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One of the main conceptual conundrums is the distinction between heavy but “normative” Internet use required by today’s technology-reliant lifestyle, problematic Internet use that is not necessarily an addiction, and frank Internet addiction. While Internet addiction certainly refers to behaviors that are excessive, excessive Internet-related behaviors do not necessarily denote addiction. If excessiveness means too much time spent online, this does not necessarily indicate problematic behaviors or addiction,^{2,15} and attempts to introduce time-based “cut-offs” to distinguish Internet addiction have not been fruitful. Excessiveness is also hard to define because large proportions of the population are constantly online via smartphones that travel with them. Therefore, negative consequences of Internet use and the associated impairment may be more useful as the key criteria here, but the question arises about the required type and number of the consequences and the extent of impairment. Some studies have drawn attention to a possible distinction between “high engagement” or “high involvement” and addiction in the context of online gaming.^{16,17} Still, the lack of clarity about the boundary between excessive or inappropriate Internet use and Internet addiction has plagued the field, and remains one of the key challenges to the concept of Internet addiction.

Another boundary issue is represented by a view that what is usually labeled Internet addiction does not necessarily constitute a mental disorder and should instead be conceptualized as “compensatory Internet use.”¹⁸ According to this view, Internet addiction is better understood as a “coping strategy,” whereby negative life situations or unmet real life needs motivate individuals to go online to alleviate their negative feelings and meet their needs.

There is also a question as to whether Internet addiction is a distinct condition or a manifestation of an underlying mental disorder,^{19,20} such as depression, social anxiety disorder, or attention deficit/hyperactivity disorder. The relationships with other disorders could partially explain the high rates of co-occurrence between Internet addiction and other psychopathology, including substance use disorders, attention deficit/hyperactivity disorder, depression, and anxiety disorders, especially social anxiety disorder.^{21,22} Most studies were cross-sectional and unable to establish the direction of any causality between Internet addiction and other psychopathology. Only one study with a prospective design reported that anxiety and depressive symptoms preceded Internet addiction in male South Korean adolescents.²³

Another issue is the nature of the problem and different theoretical and practical implications of the way it is conceptualized. Although Internet addiction is usually regarded as a type of behavioral addiction, there have been other attempts to characterize it. For example,

if Internet addiction is understood as an anxiety-ridden preoccupation with the Internet, whereby the associated repetitive computer-based behaviors alleviate anxiety, it might be related to obsessive-compulsive spectrum disorders. If, on the other hand, Internet addiction denotes an irresistible urge to repeatedly engage in behaviors that are initially pleasurable but subsequently lead to negative consequences and cause impairment, it could be conceptualized as an impulse control disorder.^{19,24} The uncertainty about the essence of the condition is best reflected in a suggestion to refer to Internet addiction as a “compulsive-impulsive spectrum disorder”²⁵ or in using the term “impulsive-compulsive Internet usage disorder.”²⁶

Furthermore, Internet addiction may have become an obsolete concept insofar as the boundaries between the “traditional” Internet and other communication and entertainment media have become blurred with evolution of technology to combine browser windows with text messaging and gaming platforms.¹⁹ As a result, Internet addiction may be less accurate a descriptor of the problematic behavior than, say, electronic media addiction.

In an attempt to understand whether Internet addiction actually constitutes an addiction, it is useful to look at the definition of addiction. One such definition, recently put forward by the American Society of Addiction Medicine (ASAM), is that addiction is characterized by “inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one’s behaviors and interpersonal relationships and a dysfunctional emotional response.”²⁷ This definition is sufficiently broad to encompass both addictive substances and behaviors. Importantly, it does not specifically mention 2 components that have traditionally been considered essential for the concept of addiction: tolerance and withdrawal symptoms. This may be related to a view that tolerance and withdrawal symptoms are better regarded as “evidence of normal adaptation”²⁸ (p. 896) to a long-term use of a substance or to a frequently performed behavior. According to this view, if tolerance and withdrawal symptoms were emphasized and required for the conceptualization of addiction, this might impede the recognition of addiction. In other words, the ASAM definition gives more weight to the other criteria to prevent underdiagnosis of addiction, while stopping short of stating that addiction may occur without tolerance and withdrawal symptoms.

Table 1 compares the frequently used components of and diagnostic symptom criteria for Internet addiction. Some of the criteria were based on the criteria for pathological gambling,^{29,30} 2 were derived empirically,^{31,32} and 1 was proposed on theoretical grounds.²⁵ In addition, the structure of the criteria sets were

TABLE 1. Components of and diagnostic symptom criteria for Internet addiction

	Internet addiction diagnostic criteria ²⁹ – no criterion is obligatory	Internet addiction diagnostic criteria ³⁰ – some criteria are obligatory, others are not	Internet addiction diagnostic criteria for adolescents ³¹ – one criterion is obligatory, other criteria are not	Internet addiction components ²⁵ – all components are obligatory	Internet addiction diagnostic criteria ³² – some criteria are obligatory, others are not	Agreement score (out of 5)*
Excessive effort spent on activities necessary to obtain access to the Internet			YES (not obligatory)			0.5
Recurrent failure to resist the impulse to use the Internet			YES (not obligatory)			0.5
Continued excessive use of the Internet despite problems caused by the Internet use			YES (not obligatory)		YES (not obligatory)	1
Lying to family members, therapist, or others to conceal the extent of involvement with the Internet	YES (not obligatory)	YES (not obligatory)				1
Excessive use of the Internet			YES (not obligatory)	YES [†]		1.5
Use of the Internet as a way of escaping from problems or of relieving dysphoric mood (helplessness, guilt, anxiety, depression)	YES (not obligatory)	YES (not obligatory)			YES (not obligatory)	1.5
Staying online longer than originally intended	YES (not obligatory)	YES	YES (not obligatory)			2
Loss of control over the use of the Internet [‡]	YES (not obligatory)	YES	YES (not obligatory)		YES (not obligatory)	2.5
Preoccupation with the Internet	YES (not obligatory)	YES	YES (not obligatory)		YES	3
Negative consequences of the Internet use [^]	YES (not obligatory)	YES (not obligatory)	YES	YES ^{**}	YES (not obligatory)	3.5
Tolerance ^{††}	YES (not obligatory)	YES	YES (not obligatory)	YES	YES (not obligatory)	3.5
Withdrawal symptoms ^{‡‡}	YES (not obligatory)	YES	YES (not obligatory)	YES	YES	4

* Agreement score is based on assigning a score of 1 when the criterion or component is obligatory (“YES”) and a score of 0.5 when the criterion or component is not obligatory.

[†] This component is “often associated with a loss of sense of time or a neglect of basic drives.”

[‡] Loss of control over the use of the Internet reflects the criterion of a persistent desire or repeated unsuccessful efforts to control, cut back, or stop Internet use.

[^] Negative consequences of the Internet use include loss of a significant relationship, job, educational or career opportunity, arguments, poor achievement, social isolation, fatigue, and loss of interest in previous hobbies and entertainment.

^{**} This component also includes lying.

^{††} Tolerance is defined as a need to increase use of the Internet, which may also involve a need for better computer equipment and more software.

^{‡‡} Withdrawal symptoms are described as restlessness, moodiness, anger, irritability, tension, dysphoric mood, depression, anxiety, or boredom when the person attempts to cut down or stop Internet use or has no access to the Internet.

different in that some required the presence of all the criteria/components,²⁵ others considered certain criteria as more important,^{30–32} and 1 gave equal weight to all the criteria.²⁹ Despite these differences, Table 1 shows that there has been a very high agreement between the authors that the concept of Internet addiction should encompass withdrawal symptoms and tolerance—those very components that the ASAM definition does not consider obligatory for the conceptualization of addiction. A very high agreement also exists for the negative consequences of the Internet use as the criterion for Internet addiction. There is somewhat less agreement about preoccupation with the Internet and loss of control over the use of the Internet as the criteria for Internet addiction, but these criteria, whether obligatory or not, appear in almost all diagnostic criteria/component sets. Other proposed criteria for Internet addiction show lower levels of agreement.

Despite indication of a high agreement about the importance of withdrawal symptoms and tolerance in the conceptualization of Internet addiction, these phenomena have been considered controversial and difficult to apply to behavioral addictions, including Internet addiction.^{24,33,34} Extrapolations from substance addictions to Internet addiction have been particularly problematic in this regard. Thus, an increase in the time spent online (phenomenon most commonly postulated to denote tolerance) is not an adequate counterpart to an increase in the dose of a substance that occurs with substance addiction and is subject to various interpretations, many of which have nothing in common with pharmacological tolerance. Likewise, somatic symptoms that arise after cessation of an addictive substance have not been well documented in the context of stopping heavy Internet use, while emotional reactions to Internet deprivation cannot be considered to suggest withdrawal.

Inclusion of tolerance and withdrawal symptoms as the obligatory diagnostic criteria for Internet addiction would not be in agreement with the ASAM definition of addiction. If the latter is to apply to all addictions, the diagnostic criteria for Internet addiction need to be brought in line with the ASAM definition. Such conceptualization of Internet addiction would be quite broad, possibly inviting criticism that many patterns of excessive Internet use are “pathologized” by being labeled as Internet addiction. The alternative of always including tolerance and withdrawal symptoms in the conceptualization of Internet addiction would be even more controversial in light of the aforementioned lack of evidence that these phenomena are present in Internet addiction.

Internet Addiction: Addiction to a Medium?

The concept of Internet addiction has been criticized on the grounds that it denotes addiction to a delivery

TABLE 2. Typology of the putative “addictions to delivery mechanisms”

Delivery mechanism	Addictive behavior or substance
Cigarettes ³⁷	Nicotine/tobacco
Blackjack, slot machine ³⁷	Gambling
Video games ³⁷	Gaming/playing video games
Internet ³⁶	Using the Internet
Spoons, forks ³⁶	Eating
Treadmill ³⁶	Exercising
Drinking glasses ³⁶	Alcohol

mechanism,⁴ a medium, a means to an end, or a vehicle for achieving something, with addiction to a delivery mechanism regarded as an untenable concept.^{35,36} In contrast, others have argued that addictions always involve addictions to a delivery mechanism and that, for example, nicotine addiction is inseparable from cigarette addiction.³⁷ Some authors have stated that although the Internet is just the medium, its role in facilitating addictive behaviors should not be underestimated.^{38,39} But exactly what role does the Internet as the medium play in Internet addiction? Surprisingly, this has not received much attention from researchers.

Unlike other delivery mechanisms (Table 2), the Internet is not a simple medium because it appears to have the potential to make certain behaviors addictive due to its provision of pleasure-producing or reward-promising stimuli, facilitation of communication, fostering of anonymity, and/or encouragement of disinhibition. For example, individuals without a history of offline “sex addiction” who gain an easy, limitless, and anonymous access to the Internet sex sites or pornographic material online might become addicted to Internet-related sexual activities. Likewise, if gambling looks more attractive on the Internet than in a casino, it may entice some individuals to gamble online even if they have never gambled in “real” life. Furthermore, the advantages of online social networking (eg, allowing some people to hide behind their online identity) may make this activity addictive for those who do not particularly enjoy social interactions offline.

In these cases, it appears that without the Internet the activities in question might not become addictive. If so, the role of the Internet as a medium might indeed be crucial. However, there have been no prospective studies of the effects of the exposure to the relevant Internet content in individuals with and without offline behavioral addictions. Unfortunately, it may not be possible to conduct such studies in the future because exposure to the relevant Internet content is likely to occur before any offline addiction could develop.

Internet Addiction: Addiction to Internet-Related Activities?

Even when Internet addiction is examined as an addiction to the medium, it still refers to the specific activity on the Internet, whether it is viewing pornography and the accompanying sexual behaviors, gambling, social networking, playing video games, shopping, or just surfing the Web. Therefore, the accurate designation would be an addiction to these specific online activities instead of Internet addiction. This suggestion has received some empirical support. For example, one study has demonstrated significant differences between individuals with “pathological Internet use” who only played video games and those who only visited sex sites and watched pornographic material⁵; if these 2 groups were characterized as only exhibiting “Internet addiction” or “pathological Internet use,” their different characteristics might be overlooked.

In addition, it has been reported that people tend to have a preferred online activity and if they were to be hypothetically prevented from engaging in this activity, they would usually not “switch” to another online activity and their Internet use would decrease substantially.^{40,41} This research supports a notion that online behavior, whether addictive or not, is not “generalized,” ie, that it typically does not involve a variety of activities in any single person. In other words, there seems to be little or no support for the construct of “generalized pathological Internet use” (as opposed to “specific pathological Internet use”), introduced to refer to “a more global set of behaviors”³ (p. 187) and characterized by “wasting time with no directive purpose”³ (p. 192). Further, although there are reports of individuals with both “pathological Internet gaming” and “pathological use of Internet pornography,”⁵ this does not correspond to the pattern of generalized or nonspecific Internet addiction and would still be better characterized via the respective specific behaviors. Therefore, even addiction to multiple online behaviors would not justify the concept of Internet addiction.

Another dichotomy has been between addiction *to the Internet* and addiction *on the Internet*.⁴² The former was suggested to refer to the activities that can only be performed online (eg, addiction to viewing online pornographic material or “cybersex addiction” and addiction to online social networking). However, these are also addictions not to the Internet as such, but to the specific activities, even if they can only be performed online. Consequently, addiction to the Internet does not appear to be conceptually sound: it implies addiction to the Internet as a medium and neglects the behaviors that one is addicted to.

Addiction on the Internet was suggested to denote use of the Internet as a medium to fuel other addictions, such

as gambling addiction.⁴³ Stated differently, addiction on the Internet is about addiction to the activities that can be performed both online and offline (eg, gambling, shopping, or gaming). Considering that addiction on the Internet and addiction to the Internet both refer to the specific activities performed on the Internet, a distinction between them does not seem useful. Whether these activities can be performed only online or both online and offline appears to be of less importance than the nature of the activities themselves. Therefore, addictions to the specific activities (eg, gambling, gaming, and sexual activities), regardless of whether they are performed online or offline, would be a more adequate designation than Internet addiction.

A move toward a designation of an addiction to the specific activities instead of Internet addiction is reflected in the decision by the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition (DSM-5)⁴⁴ to replace the initially proposed diagnostic category of Internet use disorder by Internet gaming disorder (albeit in Section III, as a condition for further study). Unfortunately, the text accompanying the diagnostic criteria for Internet gaming disorder is surprisingly inconsistent and confusing because it equates Internet gaming disorder with Internet use disorder or Internet addiction. This is contrary to the evidence that problematic online gaming (or Internet gaming disorder) is not synonymous with problematic Internet use (Internet use disorder or Internet addiction)⁸ so that the two terms should not be used interchangeably. Furthermore, DSM-5 suggests that Internet gaming disorder also involves “non-Internet computerized games”⁴⁴ (p. 796), which begs the question of why the condition is called Internet gaming disorder and not just gaming disorder. Future editions of the DSM should make it more clear that the diagnostic concepts such as gaming disorder or gambling disorder pertain to problematic behaviors, regardless of whether these are performed online or offline. Such conceptualization would obviate both a need to specify the medium (online vs. offline) in the name of the disorder and a need for the concept of Internet addiction.

Conclusion

The term Internet addiction and the corresponding concept are not adequate for several reasons. First, addiction may be a correct designation only for those individuals who meet the general criteria for addiction; the majority of people considered to be Internet addicts may not have an addiction disorder. Second, there is no evidence that addiction to the Internet as such (ie, as a medium) exists, although the Internet as a medium may play an important role in making some behaviors addictive. Third, Internet addiction should be replaced

by addictions to the specific behaviors, regardless of whether these are performed online or offline; however, this may be done only if such behaviors follow a pattern of an addiction disorder and meet the general criteria for it. In the absence of addiction, terms such as “dysfunctional use” or “disorder” would be more appropriate. Fourth, Internet addiction is a vague and overinclusive term because it refers to the endless variety of behaviors performable online, making the concept too heterogeneous. Finally, the DSM-5, in its inclusion of a rather confusingly defined “Internet gaming disorder,” missed an opportunity to offer diagnostic clarity and consistency and may have contributed to the disorientation in the field.

Abandoning Internet addiction will not be easy because the term has been popularized to the extent that it permeates everyday vocabulary. In addition, many publications on Internet addiction have given it a quasiscientific status. Although vague, Internet addiction often seems to be regarded as a self-explanatory term. It is also uncertain what the general definition of addiction should encompass. Despite all this, it is important to promote conceptual rigor. That means that the term “addiction” in reference to online behaviors should be used very sparingly, if at all, while the term “Internet” should be replaced by the specific behaviors in question (eg, gaming, gambling, or sexual activity). It is a matter of consensus whether these behaviors, if performed excessively online or offline, but without the characteristics of an addiction, are referred to as “problematic” or “pathological.” Whether such activities constitute the core of the distinct disorders or whether they are no more than a manifestation of an underlying psychopathology also remains to be determined by future research.

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