

DOES THE CONSTRUCT OF INTERNET ADDICTION REFLECT A SINGLE ENTITY OR A SPECTRUM OF DISORDERS?

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Abstract

Objective: This article aimed to examine the issue of whether the construct of Internet addiction represents a single entity or a spectrum of disorders.

Method: A literature review was performed and a conceptual synthesis was proposed.

Results: Most research supports the notion that Internet addiction is a spectrum of Internet-related disorders, which pertain to addictive online behaviours, such as gaming and sexual activities. Although there are certain similarities between these behaviours, they are often associated with different socio-demographic and psychological variables (e.g., motivations and psychopathological symptoms), suggesting entities that are related, but still distinct. As constructs, addictive online activities are generally less heterogeneous than addictive use of the Internet, i.e., Internet addiction.

Conclusions: The umbrella term “Internet addiction” is inadequate because it overlooks important differences between various addictive online activities. However, it may be unrealistic to expect a demise of the term before determining more clearly the acceptable level of internal heterogeneity of the psychopathological constructs.

Key words: Internet addiction, problematic Internet use, Internet gaming disorder, online social networking, psychopathology

Declaration of interests: none

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Introduction

Despite the popularity of the term, Internet addiction continues to be shrouded in theoretical and methodological controversies (e.g., Pies 2009, Bergmark et al. 2016, Kardefelt-Winther 2014, Kuss and Billieux 2017, Musetti et al. 2016, Starcevic and Aboujaoude in press, van Rooij and Prause 2014). The dilemmas boil down to two issues, both of which are contained in the very name of this entity.

The first question is whether Internet addiction is an addiction disorder. Recent general definitions of addictions have been rather broad (e.g., “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”, American Society of Addiction Medicine 2011), whereas other concepts of addiction (e.g., Griffiths 2005) are more restrictive in the sense that they postulate obligatory presence of the components such as tolerance and withdrawal symptoms. In the realm of Internet addiction, the latter concepts have been increasingly criticised due to lack of convincing evidence (e.g., Billieux et al. 2015a, Starcevic 2016). As there is no consensus on

these issues, terms such as “problematic Internet use”, “pathological Internet use”, “compulsive Internet use” and “Internet use disorder” have often been used as alternatives to Internet addiction, although they are not synonyms. These conceptual and terminological matters have been addressed in detail elsewhere (Kuss et al. 2014, Lopez-Fernandez 2015) and will thus not be the focus of the current article. Internet addiction and alternative terms will be used interchangeably throughout the paper, following the terminology used by various authors.

The second issue is the focus of the present article and pertains to the Internet as the object of addictive or excessive behaviour. The fundamental question posed here relates to the statement made by Widyanto and Griffiths (2006) a decade ago: “Exactly what it is on the Internet that they [Internet addicts] are addicted to still remains unclear” (p. 48). This question, which resulted in debates that are still not solved, is at the root of important dilemmas in the Internet addiction research field: Are people addicted to the Internet as the medium or to the specific online activities? Could someone be addicted to the Internet *per se*, regardless of the purpose of Internet use? Is addictive potential of the specific behaviours (e.g., sexual activities, gambling, playing

video games) enhanced when they are performed online? The current article aims to examine these important questions through a review of the relevant literature. Another aim is to briefly examine the implications of the conceptualisation of Internet addiction for the diagnoses of mental disorders more broadly.

Internet as the medium or delivery mechanism

One of the key issues in the Internet addiction literature is the dichotomy between addiction to the Internet as a medium and addiction to the Internet-related activities. Some authors regard the Internet solely as a medium to fuel pre-existing addictions (Warden et al. 2004, Wells et al. 2006), a “delivery mechanism” (Sim et al. 2012) or a “vector of second order” (Thorens et al. 2012). Others criticise the concept of an addiction to a medium as untenable (Bell 2007, Starcevic 2013a, 2013b). Yet other authors (Shaffer et al. 2000) appear contradictory when stating that the Internet “should not be considered an object of addiction” (p. 164), with the computer being “the mechanism for administering or gaining access to the object of addiction” (p. 164), and then asserting that “in some cases, the computer use itself [including the Internet] may be the object of addiction” (p. 164). On balance, it appears that there is much doubt about the notion that being addicted to the Internet as the medium is conceptually possible.

Unlike other mediums for addictive behaviours (e.g., cigarettes and pipes in nicotine addiction and gambling machines in gambling addiction), the Internet has some unique characteristics. They pertain to the ease with which the Internet provides access to the relevant reward- and pleasure-related stimuli and its role in facilitating communication and allowing or even fostering anonymity and disinhibition (Cooper et al. 1999, Kuss and Griffiths 2012, Wéry and Billieux 2017). These “structural characteristics” of the Internet may play a crucial role in facilitating addictive behaviours (e.g., Aboujaoude 2012, Griffiths 2003, Morahan-Martin 2005, Northrup et al. 2015, Starcevic and Aboujaoude in press, Thorens et al. 2012,) so that, for example, some individuals without pre-existing addiction to gambling or sexual activity are susceptible to becoming addicted to online gambling or “cybersex”.

The aforementioned structural characteristics that are unique to the Internet explain at least partly why the construct of Internet addiction has been considered useful. In other words, it has been argued that addiction to the Internet may be a plausible concept if certain activities are unlikely to be addictive in the absence of the Internet; the concept may also be viable if there is no offline counterpart to online addictive behaviour (i.e., the construct of “addiction to the Internet”; Griffiths 2000). However, such positions seem to ignore the addictive potential of the specific behaviours *per se*, regardless of whether or not they are mediated by the Internet. Taking into account this perspective and not neglecting the potential role of the medium, it cannot be justified to encompass online gambling addiction or cybersex addiction under the same umbrella term of “Internet addiction”. In fact, it is reasonable to posit that the medium (online versus offline) may be less important than the activity itself (e.g., addictive gambling or sexual activity), yet this hypothesis has received surprisingly little attention from scholars in the Internet addiction field.

Ultimately, there is no evidence to support the existence of addiction to any medium or delivery mechanism, including the Internet (Bell 2007, Starcevic

2013a, 2013b). Therefore, if Internet addiction actually refers to Internet-related activities, this begs the question of what these activities are. Two views have emerged here. One postulates that the activity in question is simply using the Internet, whereby the purpose of this activity is conceptually less relevant; we will call this a “unitary position” as it espouses a view that Internet addiction is a single entity. The other view – a “spectrum position” – pays more attention to the specific behaviours mediated by the Internet and splits the concept of Internet addiction into multiple activity-related entities, i.e., a spectrum of related disorders. In fact, this view challenges the very notion of Internet addiction and potentially makes it redundant by replacing it with addictions to the specific behaviours, regardless of whether or not these are mediated by the Internet.

Internet addiction as a single entity

A view that Internet addiction is a single entity has been articulated in different ways. Dalal and Basu (2016) have argued that the “core behaviour” in Internet use disorder is “using the Internet as a medium (for whatever purpose)” (p. 8). These authors then state that there is “one Internet use disorder” (p. 9) and that its subtypes or specifiers should be based on the “specific applications”, i.e., purposes of using the Internet or activities mediated through the Internet. However, no rationale to support this view has been provided and it remains unclear why people might be addicted to any activity on the Internet rather than to the specific Internet-related behaviours. Some research suggests exactly the opposite, i.e., that people do not tend to be randomly addicted to any online activity, but to the very specific Internet-related activities (Griffiths and Szabo 2014, Pontes et al. 2015).

A similar opinion was expressed by Schimmenti et al. (2014a), but from a slightly different perspective. These authors questioned the introduction of the diagnostic category of Internet gaming disorder by the DSM-5 (American Psychiatric Association 2013) for two main reasons. The first is related to a statement from the DSM-5 that Internet gaming disorder is “also commonly referred to as *Internet use disorder* [or] *Internet addiction*” (American Psychiatric Association 2013, p. 796). This statement reflects conceptual carelessness and runs contrary to the evidence that Internet gaming disorder and Internet addiction are different entities (Király et al. 2014, Rehbein and Mößle 2013). The second issue raised by Schimmenti et al. (2014a) is that “the diagnostic category of Internet addiction is more consistent with research findings than Internet gaming disorder” (p. 146). This point is debateable as its rationale is the large difference in the number of publications on Internet gaming disorder and Internet addiction in favour of the latter, leading to an assertion that the “specific construct of Internet gaming disorder has no research tradition” (p. 145). This argument, however, fails to take into account that many studies claiming to focus on “Internet addiction” actually recruited individuals presenting with Internet gaming problems, while others did not specify the types of activities performed on the Internet. Schimmenti et al. (2014a) concluded by suggesting that “a diagnosis of Internet addiction would be even more meaningful for clinical purposes” (p. 146), “regardless of the services which a patient is addicted to (which may however be included as ‘specifiers’)” (p. 146). According to these authors, a dissociative process that protects the self

from aversive or unbearable thoughts, memories or affective states often accounts for Internet addiction clinically, regardless of the online activity (Schimmenti and Caretti 2010, Schimmenti et al. 2014b).

A view that Internet addiction should be considered as one category was also espoused by Cash et al. (2012), although they acknowledged that it is still unclear “whether the underlying mechanisms responsible for the addictive behaviour are the same in different types of Internet addiction disorder” (p. 296). Cash et al. (2012) made this suggestion on the basis of “various Internet specific commonalities (e.g., anonymity, riskless interaction), commonalities in the underlying behaviour (e.g., avoidance, fear, pleasure, entertainment) and overlapping symptoms (e.g., the increased amount of time spent online, preoccupation and other signs of addiction)” (p. 296). However, the question that remains open is whether these similarities between different “types” of Internet addiction outweigh their unique features and whether the Internet as a medium is more important than the addictive online behaviours. Furthermore, different “types” of Internet addiction call for different treatment approaches, making it difficult to justify the otherwise pragmatic concept of Internet addiction and its erroneous implication of a potentially single treatment approach.

Internet addiction as a spectrum of disorders

A view that Internet addiction is an umbrella construct that groups distinct entities is not novel. Shaffer et al. (2000) were among the early proponents of the view that Internet addiction pertains to a variety of the specific activities pursued online. Similarly, Morahan-Martin (2005) proposed that a “focus on the Internet rather than on the specific activity is misleading” (p. 45) and that “it may be more helpful to conceptualize and study disturbed patterns separately according to specific Internet activities” (p. 45). Yellowlees and Marks (2007) also favoured a view that Internet addiction relates to specific online activities. More recently, the heterogeneity of maladaptive patterns within problematic Internet use was considered to contribute to the “conceptual chaos” in this area (D’Hondt et al. 2015).

There is some support for the view that Internet addiction is not a unitary construct, regardless of whether or not Internet addiction itself is regarded as a valid entity. For example, Rehbein and Mößle (2013) demonstrated that Internet addiction and video game addiction were distinct “nosological entities” based on the different levels of distress and different demographic correlates, patterns of Internet use and Internet-related activities. Király et al. (2014) reported very similar findings, suggesting that problematic Internet use is conceptually different from problematic online gaming and concluding that Internet addiction disorder and Internet gaming disorder are “separate nosological entities”.

Numerous studies have reported that individuals with addictive Internet use differ significantly according to the specific behaviour performed online. For example, one study found that individuals only exhibiting pathological online gaming were driven by a need to compensate for their social deficits, shyness and life dissatisfaction, whereas gratification was the primary purpose in those who only exhibited pathological online sexual behaviour (Pawlikowski et al. 2014). These findings led the authors to conclude that pathological Internet use is not a homogenous,

uniform or “unidimensional” construct and that it should be conceptualised as a “multidimensional” entity. In a study conducted in two Asian and two European countries, Montag et al. (2015) reported the predominantly low correlations between addictive online gaming, online pornography and online shopping and concluded that they were “specific forms” of Internet addiction. Andreassen et al. (2016) also found a low correlation between addictive use of online social networking and online gaming. They noted different motivations for engaging in these addictive behaviours, preponderance of females among individuals with addictive online social networking and preponderance of males among those with addictive online gaming and tendencies for anxiety to be associated with addictive online social networking and for depression to be associated with addictive online gaming. Based on these findings, Andreassen et al. (2016) suggested that Internet addiction as a unified construct was not warranted. Another study broadened the comparisons to include individuals who used the Internet inordinately for the purposes of communication, watching videos and/or listening to music, information seeking, working, sexual activities, gaming, gambling and shopping and also reported significant differences between them (Laconi et al. 2015). Thus, this study found higher levels of depression among individuals addicted to online sexual activities and lower levels of self-esteem and life satisfaction among those addicted to online gambling, underscoring a “need to distinguish each use of the Internet” (p. 242). Other research reported various motives for involvement in addictive or excessive online activities, some of which appear to be specific for certain activities and others may be shared. For example, while “anonymous fantasizing” was a strong and unique motive related to excessive involvement in cybersex activities (Wéry and Billieux 2016) and achievement- and immersion-related motives emerged as important predictors of excessive participation in massively multiplayer online role-playing games (MMORPGs) (Billieux et al. 2011, 2013, Kuss et al. 2012), escapism-related motives predicted the dysfunctional involvement in both cybersex activities and MMORPGs (Billieux et al. 2013, Wéry and Billieux 2016).

Taking together, these data support the existence of a spectrum of related, yet relatively distinct Internet-associated disorders that may have both common and unique aetiological factors (Billieux 2012). Behaviour-level designation is important because the aforementioned differences between individuals with excessive and problematic Internet use might be overlooked if the umbrella term “Internet addiction” were to be applied to all.

Moreover, Northrup et al. (2015) modified the widely used Internet Addiction Test (Young 1998), a measure of addiction to the Internet as “the whole”, into an instrument that assesses the specific Internet-related addictive behaviours: surfing, gaming, social networking, sexual activity and gambling. Their results also support a notion that there are distinct addictive online behaviours rather than a “generalized” addiction to the Internet.

Research further suggests that people using the Internet, as well as those with Internet addiction, usually do not “switch” from one online activity to another; instead, they have a preference for one specific activity (Griffiths and Szabo 2014, Pontes et al. 2015). These findings provide additional support to a view that Internet addiction usually refers to one or more specific Internet-related behaviours rather than a “generalized”

pathological Internet use. This renders the term “Internet addiction” imprecise and inadequate: not only would it be more meaningful to describe the behaviour in question instead of labelling it as Internet addiction, but the same term – Internet addiction – obviously denotes very different behavioural patterns in different individuals (Starcevic and Aboujaoude in press).

Remaining ambiguities

Despite the arguments provided in the previous section, there remains some ambiguity about the concept of Internet addiction. For example, Griffiths et al. (2016) noted that early case reports identified a few individuals using online chat rooms excessively and problematically who “seemed to be addicted to the Internet itself” (p. 194). This is contrary to the statement by the same authors that “it seems highly unlikely that ‘Internet addiction’ exists to any great extent” (Griffiths and Kuss 2015, p. 396). Such inconsistency is puzzling and leaves one wondering whether the only remaining meaning of Internet addiction may pertain to addictive online social networking.

Another source of ambiguity has been the distinction between “generalized” and “specific” pathological Internet use (Davis 2001). The former term refers to a variety of Internet-mediated behaviours such as “spending abnormal amounts of time on the Internet, either wasting time with no directive purpose or spending vast amounts of time in chat rooms” (p. 192). Generalized pathological Internet use was suggested to be associated with a lack of social support and/or social isolation and it was hypothesised that the manifestations of “pathology” would not exist in the absence of the Internet (Davis 2001), thus establishing a link between generalized pathological Internet use and “addiction to the Internet” (Griffiths 2000). Specific pathological Internet use pertains only to the activities like problematic online gaming or problematic cybersex, with the Internet not being used excessively or addictively for other purposes. Empirical support for the dichotomy between generalized and specific pathological Internet use has been mixed to date. For example, one study supported the differentiation between these two forms of pathological Internet use, but failed to demonstrate that generalized pathological Internet use was uniquely associated with underlying social deficits (Pawlikowski et al. 2014). Another study reported that time spent with Internet activity is more “focused”, and not generalized (Griffiths and Szabo 2014). Much of the aforementioned research does not suggest that generalized pathological Internet use is common and casts doubt over the usefulness of this construct.

It is worth noting that one study found that generalized Internet addiction was strongly associated with online social networking addiction and addiction to the activities that can only be performed online (Montag et al. 2015). This may be related to the fact that social networking sites can be used excessively and problematically for multiple purposes (e.g., gaming, chatting, news or information seeking/sharing, “spying” on people, etc), which resembles generalized Internet addiction. Furthermore, addictive use of social networking sites may be as heterogeneous as addictive use of the Internet itself, rendering the former construct similarly vague and limiting its usefulness. This is important to bear in mind with the rise in popularity of the concept of online social networking addiction (e.g., Andreassen 2015).

Conclusion

There are various ways of approaching the heterogeneity of Internet addiction. For example, Internet addiction has been conceptualised as a primary disorder (mostly driven by an “obsessive passion”) or a secondary disorder (as a way of coping with emotional distress) (Billieux et al. 2015b, Burnay et al. 2015, Gentile et al. 2011). Internet addiction can also reflect very different states and levels of psychopathology (Schimmenti and Caretti 2010). This article has focused on the issue of whether Internet addiction (or any of the alternative terms used instead of Internet addiction) represents one or more addictive behaviour-based entities.

The vast majority of authors acknowledge the heterogeneity of the concept of Internet addiction, suggesting that it encompasses a number of online activities. Even the term “cyberaddictions” (Lopez-Fernandez 2015, Suissa 2014), often used in plural, conveys this heterogeneity and multitude of Internet-mediated behaviours. These could be conceptualised as the spectrum of related, albeit relatively distinct entities. Lopez-Fernandez (2015) asserts that “the focus of Internet addiction research has begun to shift from a more generalized construct... to specific online addictive behaviors” (p. 268) and that “each type of Internet addiction is unique” (p. 267).

The disagreements arise in terms of how such heterogeneity is to be captured terminologically and conceptually. Thus, should Internet addiction be retained and its various forms be portrayed as “subtypes” or should Internet addiction be abandoned as a term and be considered redundant as a concept, only to be replaced by addictions to various Internet-related activities? Although there appears to be more support for the latter position, the ultimate decision may be driven by nosological preferences. That is, nosological “lumpers” would probably prefer a broader, heterogeneous term such as Internet addiction, whereas nosological “splitters” would be happier with narrower and more homogenous terms such as online gaming addiction (i.e., Internet gaming disorder) and “cybersex” addiction. Recent trends in psychiatric nosology have generally favoured “splitters” over “lumpers” and a good example of that is a decision to introduce in the DSM-5 Internet gaming disorder instead of Internet use disorder. If these trends continue, it is reasonable to expect that the future will see a move away from Internet addiction (and related terms and constructs) towards addictions to the specific online behaviours (and related terms and constructs). However, a line needs to be drawn in terms of how “miniscule” the diagnostic entities could be because even addictions to the specific online behaviours could be split further, considering for example, a variety of online gaming and sexual activities.

There are two caveats here. The first is about online versus offline addictive behaviours. For example, should problematic online gaming and problematic offline gaming be conceptualised as one or two psychopathological entities? The single entity option may appear more conceptually sound, but there is no clear answer to this question. That is because of the lack of precise criteria that determine the extent of difference that warrants conceptual and diagnostic separation and on the other hand, the lack of precise criteria that determine the extent of similarity that dictates conceptual and diagnostic merging. The second caveat is about the current lack of empirical support for almost all diagnostic entities discussed

in this article, the notable exception being gambling disorder (pathological gambling). This obviously calls for further research that would aim to ascertain the conceptual validity of these entities.

Finally, obstacles on the pathway to abandoning faddish and “catchy”, but imprecise and vague terms such as Internet addiction, have been well identified (Starcevic and Aboujaoude in press). It is the task of the researchers and authorities in the field to promote a view that terminological rigour and conceptual precision do matter and to make an effort to overcome any reluctance about disposing of concepts that lack validity and clinical utility.

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