Research Report

Which psychological factors influence Internet addiction? Evidence through an integrative model

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ABSTRACT

Since the appearance of Internet, several preoccupations have appeared as a result, with Internet addiction being one of the most common. The goals of the present study were twofold. First, to examine which psychological factors are relevant to explain Internet addiction, including impulsivity, passion and social provision. Second, to incorporate all these factors into an integrative model. Based on multiple regressions and path analysis, results revealed a positive relation between Internet addiction and specific impulsivity components (lack of perseverance, urgency) and obsessive passion. Moreover, positive relations were observed between obsessive passion and reassurance of worth, opportunity for nurturance, sensation seeking and harmonious passion. In other words, Internet addiction is related to obsessive passion, but is explained by different psychological factors. Accordingly, both Internet addiction and obsessive passion can be viewed as two important and complementary facets of problematic Internet use.

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1. Introduction

Internet is a technology that has taken up an increasingly large place in our society over time. It is used by more than 2 billion people worldwide (De Argaez, 2012). In light of such a massive use, new issues appear as a result such as the relation between Internet use and isolation, and the issue of Internet addiction (for a review on epidemiological studies, see Kuss, Griffiths, Karila, & Billieux, 2014). Internet addiction can be described as a disorder in which an individual's inability to control his or her use of Internet causes marked distress and/or functional impairment (Shapira, Goldsmith, Keck, Khosla, & McElroy, 1999) and that furthermore creates psychological, social, school and/or work difficulties (isolation, lower grades, conflicts with relatives) (Beard & Wolf, 2001; Gentile et al., 2011). The main tendency that has attempted to explain Internet addiction consists of viewing this disorder as a "behavioral addiction" marked by high impulsivity and that shares most features with drug addictions (e.g., tolerance, withdrawal, craving, loss of control, relapse) (Beard & Wolf, 2001; Block, 2008; Shapira et al., 2003). Other approaches include considering Internet addiction in relation to passion theory (Vallerand et al., 2003), or conceptualizing it as a maladaptive coping strategy to deal with negative life events or psychopathology (Kardefelt-Winther, 2014).

The first tendency is based on criticisms of Young's (1996) definition of Internet addiction, where criteria for pathological gambling (which were themselves based on substance abuse criteria) are used to define dysfunctional Internet use as an addictive disorder in which lack of impulse control is a key feature. Specifically, Beard and Wolf (2001) maintain that Young's criteria for Internet addiction are too rigid, subjective and transparent for self-reported measures. They also explain that if Internet addiction is based on pathological gambling criteria, it should be considered as an impulsivity disorder. In this context, Shapira et al. (2003) proposed to classify Internet addiction as an impulse-control disorder, but this classification has also been criticized for being too restrictive. Authors such as Billieux, Gay, Rochat, and Van der Linden (2010), Billieux et al. (2013) and Mottram and Fleming (2009) argue that impulsivity traits do indeed influence Internet addiction, but that other factors also intervene such as personality traits (e.g., extraversion, neuroticism), motives to use Internet (e.g., socialization, escapism, achievement), comorbid psychopathology, using Internet for professional purposes and the primary activity on Internet (gaming, browsing, communicating, downloading and working). Regarding impulsivity, studies have shown that both lack of perseverance (i.e., the tendency to have difficulties remaining focused on demanding and/or boring tasks) and urgency (i.e., the tendency to act rashly when faced with intentional emotional

states) are related to Internet addiction (Billieux, Gay, Rochat, & Van der Linden, 2010; Mottram & Fleming, 2009). More precisely, Mottram and Fleming (2009) evaluated the following in their sample of 272 university students (average age: 24 years): Impulsivity (using the UPPS Impulsive Behavior Scale; Whiteside & Lynam, 2001), Internet addiction (using the Internet Addiction Test; Young, 1998) and extraversion. Results revealed that lack of perseveration was the only facet of impulsivity positively related to Internet addiction in addition to extraversion and being a non-professional user. On a sample of 95 young adults, Billieux et al. (2010) carried out a study on the effects of urgency on three problematic behaviors: Internet dysfunctional use (using the Internet Addiction Test), problematic use of cell-phones and compulsive buying. Results revealed that both urgency and lack of perseverance positively and significantly correlated with Internet addiction symptoms. On the whole, existing studies support that Internet-related disorders are associated with specific facets of the multi-dimensional impulsivity construct, and that other psychological factors are also involved in its etiology (for a review, see Billieux & Van der Linden, 2012).

Based on the theory of Vallerand et al. (2003), Internet addiction may be seen as the consequence of an obsessive passion (Lafrenière, Vallerand, Donahue, & Lavigne, 2009; Przybylski, Weinstein, Ryan, & Rigby, 2009). Passion is defined as a strong inclination towards an activity that people like, that they find important, and in which they invest both time and energy. Further, two kinds of passion may be delineated: harmonious passion versus obsessive passion. Harmonious passion results from an autonomous internalization of the activity into the person's identity that occurs when individuals have freely accepted the activity as important for them without any contingencies attached to it. This type of internalization produces a motivational force to engage willingly in the activity and engenders a sense of volition and personal endorsement about pursuing the activity. The activity moreover occupies a significant place in the person's life, is in harmony with other aspects of his/her life and they feel free to engage in the activity. On the other hand, obsessive passion is the result of a controlled internalization of the activity into one's identity. Such internalization originates from intrapersonal and/or interpersonal pressure either because certain contingencies are attached to the activity (such as feelings of social acceptance or self-esteem) or because the sense of excitement derived from activity engagement becomes uncontrollable. The activity is perceived as being out of control, and they feel compelled to engage in it because of these internal contingencies. In addition, the activity takes up a disproportionate amount of space in the person's identity and causes conflicts with other activities in the person's life. This theory has been mostly tested in the context of video game use, and has not yet been specifically examined in relation to Internet use. Using the passion scale (Vallerand et al., 2003) and based on a sample of 1324 participants (average age: 24 years), Przybylski et al. (2009) reported that having an obsessive passion for video games increases the time spent playing video games. Likewise, using the passion scale and a questionnaire specially designed for the study, Lafrenière et al. (2009) found, in their sample of participants with an average age of 23 years, that obsessive passion was positively related to both time spent playing and problematic behaviors generally associated with excessive gaming (i.e., irritability, agitation, playing as a coping strategy, incapacity to reduce time spent playing). Thus, passion theory makes an important distinction between an adaptive passionate activity (harmonious passion) and a problematic passionate activity (obsessive passion), which, furthermore, has similar consequences of excessive gaming (Lafrenière et al., 2009).

Moreover, changes in social provision are often considered to be a consequence of Internet addiction. Although not referring

specifically to Internet addiction, Weiss (1974) defines social provision as a function that may be obtained from relationships with others and that are needed for individuals to feel adequately supported and to avoid loneliness. Social provision consists of six functions: guidance (advice or information), reliable alliance (assurance that others can be counted upon for tangible assistance), reassurance of worth (recognition of one's competence, skills, and value by others), opportunity for nurturance (sense that others rely upon one for their well-being), attachment (emotional closeness from which one derives a sense of security) and social integration (sense of belonging to a group that shares similar interests, concerns, and recreational activities). A number of studies have examined whether or not Internet use tends to increase or limit social provision, but the results are somewhat contradictory. It seems that studies using a measure that assesses time spend on Internet do not show any effect, or show a positive effect, of Internet use on social provision, supporting the view that high engagement (i.e., the actual number of hours devoted to online activity) has to be distinguished from dysfunctional use (Charlton & Danforth, 2007). For instance, Hampton, Sessions, Her, and Rainie (2009) have shown that Internet users have more confidants outside the couple, more contact from different cultural backgrounds and have more face-to-face contacts, compared to those who do not use Internet. Subrahmanyam and Lin (2007) did not find a significant relation between time spent on Internet per day and loneliness or parental social provision in their sample of adolescents (average age: 16 years). Wangberg et al. (2007), based on their large sample of participants ranging from 15 to 80 years of age, showed that the more time users spent on Internet per day, the greater their perceived social provision. On the contrary, authors using a psycho-pathological measure of Internet use seem to find a negative effect of Internet use on social provision. Based on a sample of university students (average age: 21 years), Engelberg and Sjöberg (2004), using the Internet Addiction Test and the UCLA Loneliness Scale (Russell, 1996), showed that Internet addiction is related to loneliness. Similarly, using the Social Avoidance and Distress scale (Watson & Friend, 1969) and their questionnaire about preference for online interaction, Caplan (2007) observed, in his sample of university students (average age: 19 years) that having social anxiety increased preference for interaction on Internet instead of face-to-face interaction. These findings could support the view that Internet involvement can be viewed as an avoidance behavior since virtual contacts could be perceived as being less stressful for those with high levels of social anxiety. On the other hand, results from Caplan (2007) revealed that a preference for interaction on Internet is positively related to problematic Internet use. Thus, social provision among Internet users is a well-known concern, but it appears that the chosen measure greatly influences the results.

Accordingly, the objective of the current study was to examine which psychological factors are relevant to explain Internet addiction including impulsivity, passion and social provision. Another objective was to investigate, for the first time, the relationship between both kinds of passion and Internet addiction. A final aim was to assimilate all these variables into an integrated model. To the best of our knowledge, no previous studies have taken all these variables simultaneously into account in the context of Internet addiction.

It was hypothesized that Internet addiction is influenced by obsessive passion, impulsivity and social provision. Second, it was hypothesized that obsessive passion is influenced by impulsivity and social provision. More precisely, we postulated that both urgency and lack of perseverance would be significantly related to Internet addiction and obsessive passion. Finally, regarding social provision, it was hypothesized that this would be negatively related to obsessive passion and positively related to harmonious passion.