The impact of Internet-based specific activities on the perceptions of Internet addiction, quality of life, and excessive usage: A cross-sectional study

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ABSTRACT

Introduction: Recent research has examined the context in which preference for specific online activities arises, leading researchers to suggest that excessive Internet users are engaged in specific activities rather than 'generalized' Internet use. The present study aimed to partially replicate and expand these findings by addressing four research questions regarding (i) participants' preferred online activities, (i) possible expected changes in online behavior in light of hypothetical scenarios, (iii) perceived quality of life when access to Internet was not possible, and (iv) how participants with self-diagnosed Internet addiction relate to intensity and frequency of Internet use.
Methods: A cross-sectional design was adopted using convenience and snowball sampling to recruit participants. A total of 1057 Internet users with ages ranging from 16 to 70 years (M_{age} = 30 years, SD = 10.84) were recruited online via several English-speaking online forums.
Results: Most participants indicated that their preferred activities were (i) accessing general information and news, (ii) social networking, and (iii) using e-mail and/or online chatting. Participants also reported that there would be a significant decrease of their Internet use if access to their preferred activities was restricted. The study also found that 51% of the total sample perceived themselves as being addicted to the Internet, while 14.1% reported that without the Internet their life would be improved.
Conclusions: The context in which the Internet is used appears to determine the intensity and the lengths that individuals will go to use this tool. The implications of these findings are further discussed.

1. Introduction

According to a recent report by the Internet Society (2014), in the past 10 years, the number of Internet users surpassed one billion and is now close to three billion users. Also during this period, users migrated their fixed Internet access from dial-up on modems to broadband, and shifted their usage patterns from text-based to predominantly video traffic (Internet Society, 2014). While Internet adoption is growing worldwide, so is Internet traffic per connection, due to the increasing move to higher-bandwidth broadband access connections, the corresponding adoption of relatively data-heavy Internet applications (e.g., audio and video streaming), and increased adoption of portable devices that are optimized to access these applications (Internet Society, 2014). These rapid changes in technology are helping shape the way people use and rely on the Internet in their daily lives.

Despite the fact that since its mainstream introduction the Internet has been argued to possess addictive features when used in a non-controlled or pathological way (see Griffiths, 1996; OReilly, 1996; Young, 1998b), it nevertheless represents a virtual world in which several unique environments and/or activities such as gambling, browsing news and information, and social networking can be explored (Griffiths & Szabo, 2014). According to Griffiths and Szabo (2014) the label 'Internet addiction' (IA) fails to take into account the focus of the object of addiction (e.g., gambling, video gaming, social networking, sex, work, shopping, etc.). It has been argued since the late 1990s that most of the people who spend excessive amounts of time on the Internet are not addicted to the medium itself, but use the Internet to fuel other and specific addictions—i.e., most people have addictions on the internet rather than to it (Griffiths, 1999, 2000).

Following the latest (fifth) edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) (American Psychiatric Association, 2013), pathological gambling (which is now known as 'Gambling Disorder') was re-classified from an impulse control disorder to an addictive disorder (i.e., a behavioral addiction) (Griffiths & Pontes, 2014; Reilly & Smith, 2013). As a result, one of the most fundamental

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implications of this transition is that if an activity that does not involve the use of an intoxicant can genuinely become an addiction (e.g., gambling), there are no theoretical reasons as to why other problematic and habitual behaviors (e.g., shopping, work, exercise, sex, video gaming, internet use, etc.) could not also constitute a *bona fide* addiction (Griffiths & Pontes, 2014). Additionally, the inclusion of a subtype of problematic Internet use (i.e., 'Internet Gaming Disorder', hereby IGD) in the Section 3 (i.e., 'Emerging Measures and Models') of the DSM-5, also constituted a milestone to the development of the (behavioral) addictions field on the whole.

However, the way in which IGD was conceptualized has arguably generated more confusion instead of clarifying the controversies surrounding generalized versus specific Internet use disorders (Griffiths & Pontes, 2014). Consequently, as a result of this conceptual ambiguity related to IGD, two immediate problematic issues arise. On the one hand, (i) IGD is clearly equated as IA as the DSM-5 asserts that IA and Internet use disorder are simply other names for IGD, whilst on the other hand, (ii) it is also asserted in the DSM-5 that IGD (which by definition is internet-based) also comprises offline gaming disorders (Griffiths & Pontes, 2014). In light of these issues, recent empirical research suggested that not only it is meaningful to distinguish between generalized Internet addiction and online gaming addiction (Montag et al., 2014), but it is also paramount to distinguish between them since they are two different types of behaviors conceptually distinct from each other, and therefore are two separate nosological entities (see Király et al., 2014).

Furthermore, the issues stemming from the view that IGD can include both online and/or offline gaming addiction have been discussed elsewhere (see Griffiths & Pontes, 2014; Pontes & Griffiths, 2014; Pontes & Griffiths, in press for a more detailed discussion). However, it has been argued by Griffiths (2005) that although all addictions have particular idiosyncratic characteristics, they share more commonalities than differences (i.e., salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse), and likely reflect a common etiology of addiction. This view has received extensive empirical support from different studies (e.g., Brand, Young, & Laier, 2014; Feng et al., 2013; Han et al., 2011; Ko et al., 2013) that showed how behavioral addictions are similar in nature to other substance-based addictions due to their shared neurobiological abnormalities.

A recent study by Griffiths and Szabo (2014) sought to shed light on an important theoretical aspect of research on IA by examining the context in which excessive Internet use emerges whilst also examining the context in which preference for certain activities arises. In this small study, a sample of 130 Hungarian university students was recruited and the results suggested that the time that individuals spend on the Internet was not random or generalized, but contextualized, leading the authors to conclude that in order to better understand IA, more attention should be paid to the attraction that a user has to one or more specific applications online (such as gaming or social networking).

In light of this, it is clear that identifying specific activities that people are attracted to in virtual environments is an essential task in order to understand how and what people become 'hooked' to on the Internet. In Griffiths and Szabo's (2014) study, they also examined how hypothetical changes in the way people used the Internet (by simply removing specific areas of the Internet) could affect peoples' behavior and attitudes towards their own usage. As a result, it was found that hypothetical lack of access to preferred online activities (i.e., asking participants to imagine how their lives would be if they were unable to access their preferred online activities) would decrease not only the desire to access the Internet but also their expected weekly usage. Despite these potentially fruitful insights, the study by Griffiths and Szabo (2014) had several shortcomings, such as a (i) relatively low and non-heterogeneous sample size, and (ii) lack of inclusion of variables related to IA such as self-assessment and/or other indicators of addiction.

Since the study by Griffiths and Szabo (2014) is arguably important to the way in which IA can be conceptualized and thought of as a behavioral addiction phenomenon, the present study sought to partially replicate and extend Griffiths and Szabo's (2014) study by further examining Internet-related perceptions and behaviors in a larger and more heterogeneous sample pool (i.e., not limited to young Internet users). Consequently, the aim of the present study was to investigate the following four research questions: (i) What are the three most popular online activities reported among the Internet users recruited? (RQ1); (ii) What would be the possible expected changes in these online practices if an individual's favorite online activities could not be accessed again permanently for some reason? (RQ2); (iii) How would the perceived quality of life be affected if Internet access was not possible? (RQ3); and (iv) How does the perception of being addicted to Internet relate to intensity and frequency of use and other-related sociodemographic variables? (RQ4).

2. Method

2.1. Participants and procedure

The present study adopted a cross-sectional design and a web-based recruitment strategy that involved the use of opportunity and snowball sampling methods in order to recruit participants. Several online recruitment channels were used to attract potential Internet users to participate, such as forums (e.g., Something Awful, The Student Room, etc.) and social networking websites (e.g., Facebook). Forum threads were created with prior authorization of the forum moderators and systematically checked on a daily basis for a period of four months that spanned from March to June 2014 while additional dissemination of the survey also occurred via Facebook. Throughout the entire recruitment process, personalized feedback was provided to the participants' questions and issues encountered during survey administration.

In order take part in the study, participants had to (i) be at least 16 years of age and (ii) provide individual online written informed consent to participate in the study. After finishing the recruitment process, a total of 1.403 questionnaires were filled out. However, after an initial data screening a total of 346 (24.7%) participants were excluded from the final analyses due to either (i) not completing the survey or (ii) other types of response biases (e.g., acquiescence bias, specifying an unlikely value for age). Consequently, this yielded a final heterogeneous sample of 1.057 self-selected English-speaking Internet users, which translated in a total response rate of 75.3% (of those that began the survey). The sample was predominantly male ($n = 753$, 71.2%) and ages ranged from 16 to 70 years ($M_{age} = 30$ years, SD = 10.84), with no severe selective drop-out cases being observed. All participants were assured of anonymity and confidentiality, and the study was granted with approval of the research team's university Ethics Committee.

2.2. Measures

A single online questionnaire partly based on that used in the study by Griffiths and Szabo's (2014) was employed. This was then slightly modified and extended to conform to the study's aims and research questions. Consequently, the research protocol included questions that examined the participants' demographics (i.e., age, gender, and current relationship status) and Internet use habits (i.e., history, estimated weekly hours, preferred channel of Internet access [e.g., mobile phone, laptop, tablet, desktop computer, etc.]), a specific question inquiring into participants' three most preferred online activities from a list that included: (i) *games and/or gambling*, (ii) *accessing general information and news* (including sports and politics), (iii) *administration* (e.g., banking, paying bills, booking travel, etc.), (iv) *listening to music*, (v) *watching videos and movies*, (vi) *e-mailing and online chatting*, (vii) *meeting new friends*