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Prevalence and determinants of Internet addiction among adolescents

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ABSTRACT

Background: Globally, it is agreed that the internet can serve as a tool that enhances well-being but there is no consensus regarding what constitutes problematic internet use and internet use relationship with offline behavioural addictions. This study was conducted to investigate the prevalence of Internet addiction (IA) among adolescents and to determine whether it is a distinct disorder from offline behavioural addictions.

Methods: Using survey design, a total of 1022 University adolescents comprising undergraduates and postgraduates were selected using stratified random sampling. Data were collected using the Revised Internet Addiction Test (RIAT), a questionnaire made up of EPQR-S Lie Scale, Internet Addiction Test (IAT), Internet Use Reasons, Hypersexual Behaviour Inventory and Problem Video Game Playing Scale.

Results: There was prevalence of IA among the adolescents; the prevalence rate was 3.3%, in a male to female ratio of approximately 3:1. Adolescents' online addiction was mainly influenced by extrinsic reasons for internet use, although there were few whose reasons for going online were mainly intrinsic. Using the internet to communicate on important matters, getting sex-oriented materials, and making money (especially amongst females) seemed to dominate addicts' minds; thus, majority were 'addicts on the internet' and not 'addicts to the internet'.

Conclusions: Offline behavioural addictions was not an IA causal factor but rather a motivating factor, while intrinsic reasons for internet use was not found to be a reliable factor for distinguishing addicts from non-addicts.

1. Introduction

Many empirical studies have raised awareness on the addictive nature of internet use which can be abnormal. However, some researchers argue that a person's excessive use of the internet is a behavioural manifestation of other problematic conditions in their lives, and thus, doubt the reality of the existence of this disorder (Thatcher et al., 2008, as cited in Frangos, Frangos, and Kiohos (2010); Widyanto and Griffiths (2006)). With the emergence of internet technologies, an online absolute and effective communication space drawing people of diverse interests unfolded (Dimple & Christy, 2011; Comer, 2009, as cited in Ogunrewo and Odusina (2010)). It is obvious why internet technology is earning an unavoidable dependency from many, mostly young adolescents (Hoffman, Novak, & Venkatesh, 2004; Kuss & Griffiths, 2012; Ma, 2011).

Excessive and compulsive internet use, also seen as a form of technological addiction (Marks, 1990, as cited in Widyanto and Griffiths (2006)) touches a large scope of behavioural responses characterized by problematic self-control. Therefore, it seems interesting to study, although quite puzzling why more problems that need solving arise as more invention of different technologies to make life easier take place. Internet addiction is a recent and fast growing clinical phenomenon (Saville, Gisbert, Koppo, & Telesco, 2010; Young, 2004), and one of such problems emerging from internet use (Bertagna, 2009; Wan & Chiou, 2007; Murali & George, 2007; Shapira et al., 2003; Young, 1998, as cited in Akin and Iskender (2011); Christakis & Moreno, 2009, as cited in O'Keeffe, Clarke-Pearson and Council on Communications and Media (2011)). Many countries have come to see Internet addiction as a potential threat to public health, with a country like China reporting that about 10 million of its young people test positive to Internet addiction (Block, 2008). Evidence on ground calls for concern, because online addiction to some games, cybersex and viewing of pornography can give rise to harmful behaviours and sexual tendencies (Longe et al., 2007), for the fact that such adult websites and applications present themes of behavioural violence (Flood, 2009).

However, Internet addiction critics disagree with the view of Internet addiction as a distinct disorder, emphasizing that the internet is not a substance but a medium of information exchange (Chakraborty, Basu, & Kumar, 2010). They generally emphasize

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that Internet addiction may have a link to internet user's psychiatric history, which entails attention deficit/hyperactivity disorder (ADHD), depression, impulse control disorders (ICDs), substance overuse, social loneliness and aniety (Yen et al., 2008; Han et al., 2009; Lee et al., 2008; Primack et al., 2009; Caplan, 2007; Parker et al., 2008, as cited in Recupero (2010)). Even Ivan Goldberg who amusingly founded a standard for Internet addiction and the online Internet Addiction Support Group in the 1990s disbelieves in Internet addiction (Suler, 2004a, as cited in Morahan-Martin (2008)). Griffiths (2000a) as cited in Widyanto and Griffiths (2006) also argues that people who are excessive internet users are not internet addicts, stressing that they simply use the internet to stimulate behavioural addictions. He claimed that the internet is only a medium where these people freely manifest their addictive behaviours. He buttressed his claims, explaining that some people may be spending excessive time on the internet out of career fulfilment or keeping online social affair with someone far away, and also pinpoints that the internet's capabilities of allowing users to hide their identities online and its unrestrictive nature encourages addicts to use it as a medium. These views also lead to the proposition that behavioural addictions concerning extreme human–machine communication are technological addictions (Griffiths, 2004; Griffiths, 1997, as cited in Chirita, Ilinca, Chele, and Chirita (2007)). This behaviourists' view of Internet addiction is also supported by Leon and Rotunda (2000) (as cited in Widyanto and Griffiths (2006)), who argued in the same perspective that to assume frequent use of the internet as excessive, pathological or addictive is a naive attempt neglecting dispositional and contextual factors related to the behaviour.

However, some other research studies indicate the prevalence of Internet addiction, and therefore imply otherwise (Canbaz, Sunter, Peksen, & Canbaz, 2009; Fisoun et al., 2012; Liu, Bao, & Wang, 2010; Odaci & Kalkan, 2010; Sepehrian & Lotf, 2011a,b). Research studies concluded that Internet addiction (IA) has similar symptoms with other impulse control disorders (Morahan-Martin, 2005; Shapira et al., 2003), and that it is uncertain if it results from other psychiatric illnesses (Aboujaoude, Koran, Gamel, Large, & Serpe, 2006; Shapira et al., 2003; Shaffer et al., 2008, as cited in Ko, Yen, Chen, Chen, and Yen (2008)). With the existing divergent views over Internet addiction, a strong controversy mounts on whether Internet addiction deserves inclusion into the Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition (DSM-V) or not (Block, 2008; Pies, 2009) as cited in Ameen (2010). However, there is also an indicative prevalence of both Internet addiction and behavioural addiction (Munoz-Rivas, Fernandez, & Gamez-Guadix, 2010).

Internet addiction has been widely identified as an abnormal condition that arises out of internet use. By using pathological gambling as a model, whose predictor-factors gave rise to the criteria for measuring IA, Young (1996) theoretical definition sees IA as excessive time spent on many internet activities to the extent of incurring adverse effects on user's physical and psychological health, expressed in his or her academic, professional, social and marital relationships, and other facets of life (Ozcan & Buzlu, 2007, as cited in Azim, Zam, and Rahman (2009)). Several studies have shown that the factor 'negative outcomes' predicts level of IA among internet users.

However, literature exposed that critics disagree on the existence of IA, doubting the empirical evidence of studies that measured IA, with the major view that the different criteria adopted by most of the studies did not consider two important factors, namely: 'reason for internet use' and 'offline behavioural addictions'. This study therefore aims to investigate if there is prevalence of IA among adolescents with respect to these two aforementioned factors, and whether IA is a distinct disorder not caused by offline behavioural addiction(s). Hardly did any study investigate IA using this approach, even with the existence of the dilemma of co-morbidity of addictions. It is out of this condition that the need to provide a substantial evidence on IA is deemed necessary.

2. Literature review and constructs

2.1. Negative outcomes

By operational definition, Salience is defined by five observable characteristics. It is a preoccupation with thoughts of the internet to the extent that life's disturbing thoughts are blocked with soothing thoughts of the internet, causing an internet user to prefer spending time online rather than socializing with others which continually instills the fear that without the internet, life will go sour and if disturbed by others when online, user becomes upset. Mythily, Qiu, and Winslow (2008) and Liu et al. (2010) surveyed students in Singapore and China. Their studies individually employed random selection of schools and random stratified cluster sampling, using a 69-item questionnaire and the Young's diagnostic instrument for IA. Both found that 'salience' was an addictive internet behaviour exhibited by addicts. This suggests that an addict is disturbed with thoughts of the internet when offline so as to get satisfied once again. More so, a relationship has been established to exist between IA or excessive use and long time spent on internet use. By operational definition, excessive use is the spending of long time online to the length of losing sleep due to internet use at nights, which causes the user to neglect important activity/activities rather than not spending more time online, and accompanied by an attempt to hide extent of internet use and mood modification when user is offline. Evidence of excessive use is seen in the study by Rooij, Schoenmakers, Vermulst, Eijnden, and Mheen (2010) and Isiklar, Sar, and Aksoz (2011). Both studies selected sample from amongst high school students. While Rooij et al. aimed at identifying addicted online gamers, Isiklar et al. examined predictor variables for IA. Both studies added to knowledge that the level of addictive use or excessive use of the internet increases linearly as hourly time spent on online activities rises. This suggests that the more often a user stays online, the higher the likelihood of being addicted. Odaci and Kalkan (2010) whose survey study in Turkey used the Online Cognition Scale and Liu et al. (2010) who surveyed 380 students, observed that excessive internet users felt bored when not online. Thus, feeling bored could be associated to excessive use. On a similar observation, Munoz-Rivas et al. (2010) examined the relationship between time spent connected to the internet and the predictor factors of pathological and addictive use of the internet. They identified irritating and anxious feelings to be symptoms exhibited by excessive users as a result of spending lengthy time on the web. This indicates that moody conditions also relates to excessive internet use (EIU). In addition, Young (2007) conducted a research with the aim of investigating the efficacy of employing cognitive-behavioural therapy for internet addictive users, and 3 years later Frangos et al. (2010) set out to estimate the prevalence rate of IA amongst students in Greek University. Both studies found that addicts exhibited computer/internet use excessiveness, which could have led to sleep deprivation due to late-night internet use. Sleep deprivation therefore may relate to EIU. Still on excessive use, Christakis, Moreno, Jelenchick, Myaing, and Zhou (2011) examined PIU in US college students, and reported that most admitted using the internet above the time they wanted. This is another pointer that IA is could be associated to time duration of internet use. And Yen et al. (2008) before Christakis et al., carried out a study to compare psychiatric symptoms between adolescents with and without IA, as well as between analogs with and without substance use. Nevertheless, evidence from both studies reveal that depression and IA