Computers in Human Behavior 51 (2015) 470–475

Contents lists available at ScienceDirect

Computers in Human Behavior

journal homepage: www.elsevier.com/locate/comphumbeh

Exploring the Online Cognition Scale in a Polish sample

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ARTICLE INFO

Article history:

Keywords:
Online Cognition Scale
Problematic Internet use
Internet addiction

ABSTRACT

Internet use is increasing every year and it involves a risk of pathological use that worsens users' quality of life in every aspect. A good instrument to diagnose this problem is essential. The first purpose of this paper is to present the Polish version of Davis's Online Cognition Scale (OCS). The second purpose is to discuss the gender differences in OCS scores that were found in the study. A sample of 626 individuals aged 11–84 years, M_{age} = 21.68 years, SD = 5.15, 40.3% males took part in the study. On this sample, the psychometric properties of the Polish version of the OCS were investigated. The Corrected Item-Total Correlation values ranged from .377 to .679, indicating that the scale's items measured the same construct: pathological Internet use. Also, the internal consistency was very good (α = .817). Consonant with the original version, we obtained a four-factor model comprising impulsivity, loneliness/depression, distraction, and social comfort. Our conclusion is that the Polish version of the OCS is a valid instrument for measuring Internet addiction. Gender differences were discussed.

1. Introduction

In reference to excessive Internet use, Goldberg (1995) used the term Internet addiction as an informal label for this negative phenomenon. Since then, this problem has become an area of concern and investigation for researchers (Kuss, Griffiths, & Binder, 2013). Many of those researchers proposed the inclusion of Internet addiction in DSM-5 in accordance with the online gambling disorder (Kuss, van Rooij, Shorter, Griffiths, & van de Mheen, 2013). This proposal has recently been accepted. Moreover, along with the significant yearly increase in the number of Internet users and faster access time, the number of Internet addicts is on the rise (Hawi, 2012). Consequently, more people than ever are suffering from the consequences of excessive Internet use. Internet addiction has negative impact on social, occupational, and physical life (Young, 2004). It is of paramount importance to build explanatory models, to diagnose the scale of dysfunctional Internet use, and to prevent its further deteriorating impact on people's life.

In the literature, there are some models explaining Internet addiction, such as Davis's cognitive-behavioral model of pathological Internet use (PIU) (Davis, Flett, & Besser, 2002). Another one is the concept of generalized pathological Internet use developed by Caplan (2002) in which a result of pathological Internet use is social anxiety as predictor of preference for online relationships. In the study entitled "The Prevalence Estimates and Etiologic Models of Internet Addiction," Young, Yue, and Ying (Joshanloo, 2011) described the stages of Internet addiction as making up a chain. The chain's stages are: the primitive drive, Internet use, euphoric experience, repeated use, tolerance, abstinence reactions, passive coping – and then again the primitive drive and so on. Moreover, Gasiul (2001) created the emotive-motivational mechanism of Internet addiction, where the main motives in Internet addiction are aspiring to attachment and aspiring to happiness. A three-factor model of Internet addiction comprising obsession, neglect, and control disorder was presented by Demetrovics, Szeredi, and Rózsa (2008).

The cognitive-behavioral model of pathological Internet use is very popular both in diagnosis and in therapy using the cognitive-behavioral approach (Przepiorka, Blachnio, Miziak, & Czuczwar, 2014). Davis's cognitive-behavioral model of pathological Internet use (Davis, 2001) indicated that pathological Internet use is a result of the combination of cognitions and behaviors that intensify maladaptive reactions. The cognitive etiology of depression and the maladaptive cognitions are the sources of this concept. The author discussed two kinds of PIU connected with specific and nonspecific Internet use. The former is a result of previous pathology that is associated with Internet activity. For instance, pornography addiction is a transfer from real life to virtual life. The latter is connected with poor social functioning –

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http://dx.doi.org/10.1016/j.chb.2015.05.028
0747-5632/

for example, a lack of social support or social isolation, which cause PIU manifested by wasting time on the Internet and getting too much involved in virtual relationships. Obsessive thoughts about the Internet, a lowering of impulse control, and the incapability of giving up Internet use are listed as the main symptoms of PIU. This model underlines the significance of cognitive components. Cognitive deformations strengthen PIU symptoms.

One of the measures based on Davis's model of PIU is the Online Cognition Scale (OCS) (Davis et al., 2002). Its advantage over other measures is its multidimensional character and its broad use not only for clinical assessment of Internet addiction but also as a pre-employment screening tool in the organizational context for measuring Internet abuse in the workplace, called cyberslacking. The questionnaire consists of 36 items that capture problematic Internet use. The theoretical framework for this measure is based on procrastination, depression, impulsivity, and pathological gambling (Davis et al., 2002). It comprises four subscales: loneliness/depression, diminished impulse control, social comfort, and distraction. There is also a global measure of problematic Internet use. So far, there have not been many adaptations of the measure. One of the adaptations was conducted on a Turkish sample (Özcan & Buzlu, 2005). The sample included 148 university participants with a mean age of 21.01 years (SD = 1.56). The OCS score was positively related to depression and loneliness and negatively to perceived social support. The scale's reliability was excellent (α = .91). Based on Davis's model of PIU and a realistic situation in China, Lei and Yang (2007) developed the Adolescent Pathological Internet Use Scale. It consisted of six dimensions: salience, mood alteration, social comfort, tolerance, compulsive Internet use/withdrawal symptoms, and negative outcomes. It is worth quoting the results of Jia and Jia (2009) who reformulated a four-factor model of OCS and obtained quite a satisfactory two-factor model comprising dependency and distraction.

The OCS has been used in many studies and in many countries, the most popular of which was conducted in Turkey. As presented in Table 1, the OCS is related to social variables, in particular to disabled social functioning manifesting itself in weak social skills, shyness, loneliness, low perceived social support, communication anxiety, unpopularity anxiety as well as physiological symptoms of anxiety and dating anxiety, interpersonal rejection, unrealistic relationship expectation, interpersonal cognitive distortions, and low social self-efficacy (Özcan & Buzlu, 2005; Ebeling-Witte, Frank, & Lester, 2007; Günay, 2012; Odaci & Kalkan, 2010; Kalkan, 2012; Nalwa & Anand, 2003). Moreover, the OCS is linked with emotional functioning, for example with negative and positive affect, violent game, and depression (Ozcan & Buzlu, 2007; Senol-Durak & Durak, 2011; Tahiroglu, Celik, Uzel, Ozcan, & Avci, 2008). The results provide confirmatory evidence that the OCS is related to the quality of life, especially to low life satisfaction, low subjective vitality, and low happiness (Akın, 2012; Senol-Durak & Durak, 2011; Çelik & Odacı, 2013). The data gathered in the previous studies suggest that the OCS is associated with academic functioning, particularly with achievement in studies, internal academic locus of control, and external academic locus of control, delayed work, and online procrastination (Nalwa & Anand, 2003; Thatcher, Wretschko, & Fridjhon, 2008; Wang, Kao, Huan, & Wu, 2011; Wu & Li, 2005).

According to our knowledge, our research is the first Polish adaptation of the OCS. It was the scarcity of empirical research on the proposed method that encouraged us to conduct the present study. Consequently, its purpose was to adapt the OCS into Polish as well as to verify its reliability and factor structure. According to our knowledge, our research is the first Polish adaptation of the OCS. It was the scarcity of empirical research on the proposed method that encouraged us to conduct the present study. Only few adaptations of the OCS have been made: in Turkey, South Africa, the US, the Netherlands, and India. Consequently, we wanted to verify whether we could replicate the model obtained by Davis et al. (2002) regardless of some possible cultural differences. We adapted the original scale from English into Polish as well as verified its reliability and factor structure.

Table 1
Studies that used the OCS.

Author(s)	Country	Sample (N)	Variables correlated with the OCS
Özcan and Buzlu[13]	Turkey	148 students	Depression, loneliness, low perceived social support
Ebeling-Witte et al.[16]	US	88 students	Shyness
Günay[17]	Turkey	1411 people	Loneliness, personality as mediator
Odaci and Kalkan[18]	Turkey	493 students	Loneliness, communication anxiety, unpopularity anxiety, physiological symptoms of anxiety and dating anxiety
Kalkan[19]	Turkey	351 students	Interpersonal rejection and unrealistic relationship expectation
Nalwa and Anand[20]	India	100 students	Delayed work, losing sleep, loneliness, irritated when failing to log on at predetermined time
Senol-Durak and Durak[21]	Turkey	521 students	High negative and positive affect, low level of life satisfaction and self-esteem
Tahiroglu et al.[22]	Turkey	3975 undergraduates	Violent games
Ozcan and Buzlu[23]	Turkey	730 students	Loneliness, depression, and low perceived social support
Akin[24]	Turkey	328 students	Low subjective vitality and low subjective happiness
Çelik and Odacı[25]	Turkey	418 students	Interpersonal cognitive distortions and low life satisfaction
Thatcher et al.[26]	South Africa	1399 people	Online procrastination
Wu and Li[27]	China	365 students	Poor achievements
Kim, LaRose and Peng[29]	US	635 students	Loneliness, weak social skills
Meerkerk, Van Den Eijnden, Vermulst, and Garretsen[30]	The Netherlands	447 heavy Internet users	Compulsive Internet use
Rollings[31]	US	231 bloggers and 248 non-bloggers	Bloggers scored higher on extraversion and the OCS
İskender and Akin[32]	Turkey	311	Low social self-efficacy and internal academic locus of control, high external academic locus of control
Özatalay and Uzel[33]	Turkey	884 students	Psychopathology (ADHD)

In the light of the studies performed in recent years, some gender differences may be outlined. Man more often scored higher in Internet addiction scales (Jang & Ji, 2012; Stavropoulos, Alexandraki, & Motti-Stefanidi, 2013). Also, a study of German adolescents indicated gender differences in the patterns of Internet use and negative consequences of Internet use (Wartberg et al., 2014). On the other hand, the relation between attention deficit and Internet addiction is stronger in the female group (Yen, Yen, Chen, Tang, & Ko, 2009). No gender differences were found in the