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Relationship of Internet addiction with impulsivity and severity of psychopathology among Turkish university students

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ABSTRACT

The previous studies have found a relationship between IA and both impulsivity and psychopathology when they were considered separately. The aim of this study was to investigate the relationship of Internet addiction (IA) with impulsivity and severity of psychopathology among Turkish university students. We also wanted to control the effect of impulsivity dimensions on the relationship between IA and psychopathology. A total of 319 university students from two universities in Ankara participated to the study. Students were assessed through the Internet Addiction Scale (IAS), the Symptom Checklist-Revised (SCL-90-R) and the Barratt Impulsiveness Scale-11 (BIS-11). Correlational analyses revealed that severity of IA was related to both SCL-90-R and BIS-11 scores. Among SCL-90-R subscales, severity of obsessive-compulsive symptoms (OCS) was the only predictor for IAS score. Hierarchical regression analysis indicated that interpersonal sensitivity, additional to attentional and motor impulsiveness, was the predictor of IAS score. Although severity of IA is associated with wide range of psychopathology, particularly OCS, interpersonal sensitivity seems to be the main dimension that predict severity of IAS additional to impulsiveness (attentional and motor). Impulsivity seems to be an important construct when considering IA and its treatment among Turkish university students.

1. Introduction

1.1. Internet addiction

Internet use is very common all around the world, especially for academic and recreational purposes (Yen et al., 2007). The research which was conducted in Turkey also has demonstrated the wide and increasing use of the Internet (Turkish Statistical Institute, 2012). Information and communication technology usage survey conducted by Turkish Statistical Institute (2012) has revealed that 47% of households have access to the Internet at home with regular daily-basis use. Internet use of individuals aged between 16 and 74 were 37.8% and the proportion of computer and Internet usage in 16–24 age group was the highest (Turkish Statistical Institute, 2012).

While the use of Internet is wide and increasing, the psychological problems related to maladaptive Internet use has been frequently reported in the literature, especially among young people (Mazhari, 2012). The phenomenon has been called under different names such as computer addiction, compulsive Internet use, internetomania, problematic or pathological Internet use, and last but not least Internet addiction (IA) (Young and Rogers, 1998; Davis, 2001; Shapira et al., 2003; Meerkerk et al., 2009; Ko et al., 2012). The incidence rate of the IA among high school students and university students in Turkey was 11.6% (Canan et al., 2010) and 12.26% (Kayri and Gunuc, 2009), respectively. It was suggested that individuals with IA can lose their control on the Internet use resulting impairments in daily functioning, relationships and emotional stability (Young and Rogers, 1998; Anderson, 2001; Davis, 2001; Ko et al., 2012). However, the underlying mechanisms of the phenomenon have not been clearly defined and there has been lack of diagnostic classification for IA in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) (American Psychiatric

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Association, 2000). Nevertheless, the clinical features of IA have been described in various ways (Young, 1996; Ko et al., 2012).

The description of IA has been constructed from the features of both substance dependence (Anderson, 2001) and pathological gambling (PG) (Young, 1996). It was suggested that the shared characteristics of IA with substance dependence and PG are related to preoccupation, mood modification, tolerance, withdrawal, and functional impairment (Hall and Parsons, 2001; Cao et al., 2007). Moreover whether the phenomenon is an impulse control disorder (ICD) or a behavioral addiction (BA) has still been a debate (Young, 1996; Hollander and Evers, 2001; Ko et al., 2012). The proponents of the ICD stated that IA is a new subtype of ICD (Treuer et al., 2001), which can be classified by considering the diagnostic criteria for ICD as stated in DSM-IV-TR (American Psychiatric Association, 2000). On the other hand, since the neurobiological pathway of IA was found to be different than ICD, others suggested that it is more appropriate to classify excessive Internet use as a BA (Holden, 2001; Van Holst et al., 2010).

1.2. Internet addiction and psychopathology

Although the IA was considered as a separate disorder (Fu et al., 2010), the excessive Internet use is also comorbid with other psychological symptoms and psychiatric disorders (Ko et al., 2012). Yen et al. (2008) suggested four mechanisms to account for the association between IA and psychiatric symptoms. First, psychiatric symptoms may lead to the onset or persistence of IA. Second, IA may precipitate psychiatric symptoms. Third, IA and psychiatric symptoms may increase vulnerability to each other. Finally, the shared risk factors, either genetic or environmental, may lead to the onset or persistence of psychiatric symptoms and IA. The IA has been found to be associated with attention-deficit hyperactivity disorder (Yen et al., 2007; Carli et al., 2013), low self-esteem (Kim and Davis, 2009), shyness (Treuer et al., 2001), depressive symptoms (Young and Rogers, 1998; Treuer et al., 2001; Ha et al., 2007; Jang et al., 2008), hostility (Ko et al., 2007; Yen et al., 2007), interpersonal sensitivity (Ko et al., 2007), impairments in relationships (Milani et al., 2009), obsessive-compulsive symptoms (OCS) (Ha et al. 2007; Jang et al., 2008; Carli et al., 2013), and last but not least impulsivity (Cao et al., 2007; Mazhari, 2012). Furthermore, the students who reported excessive internet use are characterized by complaints of indecisiveness, preoccupation with details, nervousness, irritability, aggressiveness, and impulsivity (Yang et al., 2005). Other than severity of psychopathology measured with the Symptom Checklist-Revised (SCL-90-R) being higher (Yang et al., 2005; Yen, et al., 2008), personality disorders, particularly those in cluster B known as impulsive personalities, found to be higher in those with IA (Yang et al., 2005).

1.3. Internet addiction and obsessive-compulsive symptoms

The previous studies demonstrated OCS to be associated with severity of IA (Ha et al. 2007; Jang et al., 2008; Carli et al., 2013). Among subscales of SCL-90-R, the severity of OCS was the highest among those with IA (Yang et al., 2005). Obsession is defined as repetitive thoughts (American Psychiatric Association, 2000), whereas compulsivity is defined as actions that are persistently repeated, despite adverse consequences (Robbins et al., 2011). Similarly, impulsivity is characterized by the tendency to act prematurely, without foresight, despite adverse consequences (Robbins et al., 2011). Therefore, some authors argued that impulsivity and compulsivity do not simply lie at opposite ends of a phenomenological and neurobiological spectrum, but rather have a complex intersection (Stein et al.,1996). According to the most recent review (Robbins et al., 2011), impulsive-compulsive tendencies should not be limited to substance abuse and obsessive compulsive disorder, given the growing acceptance of the existence of such BA's as gambling, eating, sexual and IA.

1.4. Internet addiction and impulsivity

The impulsivity has been defined as a predisposition toward unplanned reactions toward internal or external stimuli without regarding the negative consequences of the action (Moeller et al., 2001). It was also suggested that the impulsivity is more salient in particular psychiatric disorders (Hollander and Evers, 2001) such as personality disorders, eating disorders (Loxton and Dawe, 2001), ICDs, substance abuse (Evenden, 1999; Dawe et al., 2004), PG (Lai et al., 2011), and last but not the least IA (Cao et al., 2007; Mazhari, 2012). A previous study found that adolescents with IA exhibit higher impulsivity than controls and have various comorbid psychiatric disorders, which could be associated with IA (Cao et al., 2007).

For those with behavioral inhibition problems, the Internet may serve as an area in which individuals can receive short-term rewards through gaming, surfing or social networking, and be reinforced by immediate gratification (Hall and Parsons, 2001). A previous study suggested that the impulsivity can be considered as an endophenotype of addictive behaviors (Verdejo-Garcia et al., 2008). Consistent with this, recent literature findings consistently supported the relationship between impulsivity and IA. For example, Mazhari (2012) stated that those with IA also had higher impulsivity. Moreover, Lee et al. (2012) revealed that those with IA showed increased levels of trait impulsivity than patients with PG and the severity of IA was associated with the level of trait impulsivity in patients with IA. The authors even suggested that the trait impulsivity could be a marker for vulnerability to IA (Lee et al., 2012).

Regarding the literature, the previous studies have investigated the relationship of IA with impulsivity (Cao et al., 2007; Mazhari, 2012) and psychopathology (Yang et al., 2005; Yen et al., 2008; Koç, 2011) separately. The aim of the study was to investigate the relationship of IA severity with psychopathology and impulsivity among Turkish university students. We also wanted to control the effect of impulsivity dimensions on the relationship between IA and psychopathology. The hypotheses of the present study were that while the severity of IA will be related with the severity of both impulsivity and psychopathology when they are considered separately, whereas the importance of impulsivity may emerge relative to the psychopathology dimensions when they are considered together.

2. Methods

The study was conducted with volunteers from two rather conservative universities in Ankara between December 2011 and May 2012. The Fatih University Faculty of Medicine Ethics Committee approved the study. Written informed consent was obtained from the students after the study protocol was thoroughly explained.

2.1. Participants

Five hundred university students from two universities in Ankara were randomly selected for the present study. The inclusion criteria were to use internet for communicative purposes on a regular basis and willingness to participate in the study. The excluding criteria were refusing to participate in the study, wanting any fee, leaving some parts of the scales unfilled, and not giving the forms back. Sixty-four of them refused to participate in the study because they did not have enough time and there was no

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