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Problematic Internet and mobile phone use and clinical symptoms in college students: The role of emotional intelligence

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ABSTRACT

This study deals with maladaptive use of the Internet and the mobile phone and its relationship to symptoms of psychological distress and mental disorder, as well as to the possible role of Perceived Emotional Intelligence in this relationship. Three hundred and sixty-five undergraduate university freshmen at Ramon Llull University, Barcelona (Spain), majoring in four different studies (Psychology, Education, Journalism and Broadcasting, and Health Studies) replied to scales assessing the negative consequences of maladaptive use of both the Internet (CERI) and the mobile phone (CERM), a self-report scale on Perceived Emotional Intelligence (TMMS-24), and a clinical instrument to check for complaints related to the presence of psychological distress (*Symptom Checklist-90-R*; SCL-90-R). Results indicate that psychological distress is related to maladaptive use of both the Internet use to major study, students of Journalism and Broadcasting showed a more maladaptive use. With respect to major study, students of Journalism and Broadcasting showed a more maladaptive pattern of Internet use than students of other majors. The components of Perceived Emotional Intelligence contributed to the explanation of the variance of the general indicators of psychological distress, but to a lesser degree than maladaptive use of Internet and mobile phone.

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1. Introduction

In the last few years, addiction to the information and communication technologies (ICT) has become a widely discussed, and probably often exaggerated, topic, in the media. Nonetheless, there is an increasing amount of scientific literature about the impact of the new technologies in mental health and how maladaptive use can produce symptoms of psychological distress or disorders. Maladaptive use of the Internet has been shown to be related to different psychological problems. Thus, for instance, Whang, Lee, and Chang (2003) found a significant correlation between degree of Internet addiction and negative psychological states such as loneliness, depression, and compulsive behavior; Niemz, Griffiths, and Banyard (2005) found an association between pathological Internet use and self-esteem, and Black, Belsare, and Schlosser (1999) between compulsive computer use and different psychiatric symptoms as well as general emotional distress. In a recent study, by Yen et al. (2008), adolescents with high Internet use presented more psychopathology as revealed by the Brief Symptoms Inventory (BSI, a reduced version of the Symptoms Checklist, SCL-90) with respect to peers with low use. The authors found that adolescents with Internet addiction as well as those with substance use problems had significantly higher values in the global pathology indices of the BSI (GSI, PST, PSDI) and in other dimensions, such as hostility, depression, phobic anxiety and additional symptoms. However, the methodology and results of the initial studies have been criticized and revised. For instance, Kraut et al. (1998) had claimed that pathological use of the new technologies reduces the individual's social implication in the real world and, as a consequence, his or her psychological well-being, because it produces the kind of isolation, loneliness and depression the individual wants to ease by connecting to the Internet ("Internet paradox"). Spending a great deal of time and money in virtual activities may also reduce the individual's dedication to other social, academic or work activities and therefore produce an impairment in his or her performance. But in a later study (Kraut et al., 2002), the initial proponents of the Internet paradox were not able to repeat their findings, neither could other authors establish a relationship between excessive Internet use and psychological distress (Wästlund, Norlander, & Archer, 2001). Some even found a beneficial effect of its use for community life (Bargh & McKenna, 2004). Thus, the existence of "Internet addiction" as a clinical entity and the question of how Internet abuse can influence psychological maladjustment is still under discussion, but there is an increasing movement to include "Internet addiction" into the next edition of the Diagnostic





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and Statistical Manual for Psychiatric Disorders (DSM-V) (Block, 2008). According to Block, this disorder belongs to the compulsive-impulsive spectrum and has become one of the most serious public health issues in South Korea and probably other Asian countries. Detailed clinical cases have been described not only in the USA (Black et al., 1999; Shapira, Goldsmith, Keck, Khosla, & McElroy, 2000; Shapira et al., 2003; Young, 1996, 1998, 2007), but also in Great Britain (Griffiths, 2000), Italy (Nardone & Cagnoni, 2003), and Spain (Sanz, Carmona, & Marín, 2004; Vaticón, Bayón, Pascual, & García, 2001). Consequently, these patients are susceptible to be treated by cognitive-behavior therapy (Young, 2007). Young argues that Internet addicts present more catastrophic cognitions than non-addicts, which contribute to the compulsive Internet use in providing a psychological escape mechanism to avoid real or perceived problems.

Addiction to or maladaptive use of the mobile phone has received less scientific attention, though Kamibeppu and Sugiura (2005) and Billieux, Van der Linden, D'Acremont, Ceschi, and Zermatten (2007) suggest its addictive potential should not be ignored. Jenaro, Flores, Gómez-Vela, González-Gil, and Caballo (2007) found a pathological use of the mobile phone in 8% of Spanish university students.

It seems to be established that maladaptive Internet use and, probably to a lesser degree, maladaptive mobile phone use, can produce psychological disorders in a certain type of users. The challenge in the future will be to identify users who are at risk, to establish which are the variables that predisposes them to developing Internet-related pathology, and, if possible, to develop preventive measures. One of the risk factors under discussion is personality. Black et al. (1999) in a sample of compulsive computer users found that approximately half of them fulfilled criteria for a personality disorder, being the borderline personality disorder the most frequent, followed by the antisocial. Another risk factor these authors could identify was a clinical history of affective disorder, anxiety and substance abuse. In this sense, psychological problems can as well be not only a consequence but also a cause or a concomitant of maladaptive Internet use. On the other hand, it is well established that negative emotional states and emotion dysregulation can lead to a variety of addictive and compulsive behaviors.

The ability to perceive, process, and understand emotions (one's own and others') has been termed emotional intelligence (EI) by Salovey and Mayer (1990), and in the last two decades, this construct has emerged as an important predictor of subjective wellbeing (e.g. Austin, Saklofske, & Egan, 2007) and psychological adjustment in general. In change, mental disorder was found to be associated with low scores in emotional intelligence measures (Lizeretti, Oberst, Chamarro, & Farriols, 2006). Although EI was initially criticized for lacking construct validity (e.g. Davies, Stankov, & Roberts, 1998) and although there is still no consensus about the components of EI, some of the different models proposed are now well established in the scientific community. For the purpose of our study, we adhere to one of the most frequently cited models, the ability model developed by Mayer, Salovey, and Caruso (2002), in which EI is considered to be a set of cognitive-emotional abilities divided into four hierarchically ordered branches (perception, appreciation and expression of emotions; emotional facilitation of thought; understanding, analysis and use of emotional knowledge; reflexive regulation of emotions). A variety of studies have shown a positive relationship between EI and physical and psychological health, psychological adjustment as well as success in life (Brackett & Mayer, 2003; Charbonneau & Nicol, 2002; Extremera & Fernández-Berrocal, 2006; Palmer, Donaldson, & Stough, 2002). With respect to substance use, some authors found a relationship between low emotional intelligence and substance use problems (Limonero, Tomás-Sábado, & Fernández-Castro, 2006; Reay, Hamilton, & Kennedy, 2006; Riley & Schutte, 2003). Concerning the use of the Internet, there are still few studies that deal explicitly with Internet addiction and emotional intelligence (Engelberg & Sjöberg, 2004). While in non-addicted Internet users, college students who spent more time e-mailing had a higher overall emotional intelligence score (Woods, 2001), other studies found a relationship between maladaptive Internet use and lower EI scores. In Engelberg and Sjöberg's (2004) study, use of the Internet was significantly related to loneliness and adherence to idiosyncratic values and, more weakly, to emotional intelligence. The authors conclude that frequent Internet users tend to be lonely, have deviant values and lack a certain degree of emotional and social skills. Parker, Taylor, Eastabrook, Schell, and Wood (2008) found that (low) EI was a moderate to strong predictor of addiction-related behavior (gambling, Internet use, and video game playing).

To summarize, low El has proven to be a predictor of or a mediator for psychological maladjustment. We therefore hypothesize that low El could also play a mediating role in the development of psychological distress related to Internet or mobile phone use, expressed for example as a deficit in the regulation of affective states. Young (2007), for instance, argues that compulsive behavior in patients with Internet addiction serves to reduce an underlying emotional tension as well as a reward for future behavior. In this sense, and according to Young, Internet addicts turn to the computer in order to find relief from moments of painful tensional states present in their lives.

1.1. Purpose of this study

The purpose of this study is to establish the degree to which maladaptive use of the Internet and the mobile phone is related to psychological distress, expressed as self-perception of symptoms that appear in different mental disorders, using a sample of college students. It also aims at clarifying the role of emotional factors, expressed as the self-perception of subcomponents of emotional intelligence, in the development of psychological problems related to ICT abuse. Furthermore, the study tries to establish whether there are differences with respect to gender and major studies enrolled.

2. Materials and methods

2.1. Participants

The sample consisted of 404 undergraduate students in their first year at Ramon Llull University (Barcelona, Spain), majoring in four different studies: Psychology (20%), Education (31.5%), Journalism and Broadcasting (12.9%), and Health Studies (consisting of Speech Therapy, Physical Activity and Sports, Physical Therapy, Nursing, and Nutrition and Dietetics; 35.6%). All students possess mobile phones and have access to Internet and use it as part of their academic activity. Questionnaires were administered to the participants in a classroom setting during the academic years 2005–2006 and 2006–2007 by a team of trained graduate students. Participation was voluntary; six students declined participation, 33 had to be excluded for not replying properly to all questionnaires, so the final sample consisted of 365 participants, 91 males and 274 females, with a mean age of 21.37 years (SD = 5.463).

2.2. Instruments

CERI – *Cuestionario de Experiencias Relacionadas con Internet* (Questionnaire of Experiences related to Internet); the CERI is a 20-item 4 point-Likert scale questionnaire. It is based on a Spanish questionnaire developed by de Gracia, Vigo, Fernández Pérez, and Marco (2002), the *Cuestionario de Problemas relacionados con el uso de Internet* (PRI, Questionnaire of Internet use related prob-

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