Examining personality factors and character defenses assists in the differentiation between college students with Internet addiction and unaffected controls

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A R T I C L E   I N F O

A B S T R A C T

The purpose of this study is to evaluate the predictive value of personality factors, character defenses and psychopathology indexes in discerning between a clinical sample of Internet-addicted college students and a random sample of non-addicted college students. A discriminant analysis identified the variables which enabled discerning Internet addicts from non-addicts in 78% of all subjects. Internet-addicted students presented with higher frequency of connecting to the Internet, more time spent online, higher impulsivity, higher help-rejecting complaining and lower sublimation. Indexes of overt symptomatology did not assist in discerning clinical cases from controls. In conclusion, employing a test battery which includes not only measures of Internet addiction but also measures of inheritable personality factors and character defenses can be of assistance both in clinical work and in epidemiological research.

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1. Introduction

Internet Addiction Disorder (IAD) has appeared as a clinical concept several years ago with a number of case reports (Young, 1996) and gradually attracted the attention of numerous researchers. According to Kuss, Griffiths, Karila, and Billieux (2014), despite the fact that the field of IAD research includes over 60 epidemiological surveys with a minimum of 1000 participants worldwide, it lacks the necessary nosological precision in order to translate survey data to meaningful clinical information. Defining a mental disorder initially in terms of a clinical syndrome is a first step, yet more insight is ultimately required concerning etiology, ideally with a clear path from health to disease. Comparing clinical cases to unaffected individuals can assist as an intermediary step in this respect, by way of identifying factors that explain a large amount of the between-group variability. Such sources of data on variability include personality typology and psychopathology.

1.1. Personality correlates of IAD

Personality is a concept briefly defined as a complex pattern of deeply embedded individual characteristics that are expressed automatically in almost every area of psychological functioning (Millon, Millon, Meagher, Grossman, & Ramnath, 2004). Following the example of chemical (Gossop & Eysenck, 1980) and other behavioral addictions (Roy, Custer, Lorenz, & Linnoila, 1989), various models of personality have been researched for any possible role in the development and evolution of IAD. The field of personality theory that has been applied more is the one comprised of various trait and factorial models. Although each model is unique, there is a great deal of conceptual overlap between different models, resulting in similar constructs being given varying names, resulting in considerable confusion. A recent review of the subject attempted to group related factors together, so as to provide a clearer picture (Floros & Siomos, 2014). There were positive correlations, in all reviewed studies, of IAD scores with the traits of Psychoticism, Sensation seeking and Neuroticism. Negative correlations were reported in all studies with the traits of Extraversion, Conscientiousness, Reward dependence, Agreeableness and Self-directedness. Studies of personality correlates in clinical cases of IAD however remain scarce. A related study compared 115 patients meeting the criteria for Internet Gaming Disorder (IGD) to 167 control subjects displaying either regular or intense use of online games and to 115 patients meeting diagnostic criteria for pathological gambling (Müller, Beutel, Egloff, & Wölfling, 2013). IGD, a sub-category of IAD exclusively regarding addictive preoccupation with online gaming, was associated with higher neuroticism, decreased conscientiousness and low extraversion. In a related study, the authors

compared personality profiles of a sample of 70 patients with an addiction disorder that additionally met the criteria for IAD to 48 patients suffering from alcohol dependence without comorbid IAD (Müller, Koch, Dickenhorst, Beutel, Duven & Wölfling, 2013). It was shown that patients with comorbid IAD could be discriminated from other patients by higher neuroticism and lower extraversion as well as lower conscientiousness. After controlling for depressive symptoms, lower conscientiousness especially turned out to be a disorder-specific risk factor.

A separate theoretical line of thought, regarding personality, relates to the psychodynamic tradition and the manner in which individual psychological defenses form constellations that come to characterize behavior, functioning like coping mechanisms (Bond, 1992). Although the concept of psychological defenses has shown some value in other addictions, there are no related studies of how it might relate to IAD. Related findings from the existing body of literature were a significant decrease in the mean score for mature defenses and a significant increase in mean score for immature defenses in substance abuse when patients were compared to controls (Comings, MacMurray, Johnson, Dietz, & Muhleman, 1995) higher score on immature defenses found in bulimic women with comorbid alcoholism (Bulik, Sullivan, Carter, & Joyce, 1997), while higher scores on immature defenses predicted alcohol relapse (Evren, Yigiter, Bozkurt, Cagil, Ozcetinkaya, Can, et al., 2013).

Combining these two paradigms in personality research is relatively rare; a recent psychometric study employed both the Zuckerman–Kuhlman trait model and Bond's Defense Styles in a college student population in order to investigate whether a factorial model and a psychodynamically-oriented typology could be combined in a research environment so as to provide with non-overlapping estimates of psychopathology. The authors concluded that this practice led to the prediction of a high degree of variance in psychopathology symptoms while the models did not share a significant amount of variance (Floros, Stogiannidou, Giouzepas, & Garyfallos, 2014).

1.2. Psychopathology and IAD

Accepting the concept of IAD as a clinical entity would entail significant association with overt psychopathology. Numerous studies have been conducted throughout the world reporting correlates of IAD in college students with measures of psychopathology and psychological distress. Recent cross-sectional studies have reported that affected students scored significantly higher on measures of general psychopathology (Sepulveda, Berner, Santander, & Gomez, 2014), however the study design makes it difficult to ascertain whether a causal inference between IAD and psychopathology actually exists. Longitudinal studies have shown that IAD can lead to psychopathology with the reverse being also true; being diagnosed with IAD has been linked to developing symptoms of depression, anxiety and social phobias after two years (Gentile, Choo, Liau, Sim, Li, Fung, et al., 2011) while depression, attention-deficit/hyperactivity disorder, social phobia, and hostility predicted the occurrence of IAD after two years (Ko, Yen, Chen, Yeh, & Yen, 2009). Regardless of whether psychiatric symptomatology preceded the onset of IAD, or vice-versa, ascertaining psychopathology levels would be prudent in case of IAD symptomatology.

1.3. Aim and research hypothesis of this study

Our aim in this study was to expand the body of knowledge on factors related to clinical cases of IAD, by way of assessing the relative importance of possible predictor factors useful in discerning college students with IAD from non-addicted controls. This would assist in the timely diagnosis of IAD both in a research and a clinical setting. Studies of clinical samples are few in number and this study benefits from avoiding any methodological issues associated with designating a subsample of students as 'addicted' while they have not been clinically diagnosed and may in fact be coping well with their workload and social obligations. Our research hypothesis is that in addition to typical measures

of online activity and addiction, like time spent online and scores on a specialized measure for IAD, other sources of information, including measures of personality factors, character defenses and psychopathology, would be useful in discerning affected students from unaffected controls.

2. Method

2.1. Study design and population

This is a comparative study of a clinical population of Internet-addicted college students with non-addicted students, using self-report measures. The sample is compared to a randomly drawn, comparable sample of subjects who do not demonstrate symptoms of IAD. Permission for the study was sought for and granted by the research review board of the Medical School of our University. The clinical sample consisted of the first fifty consecutive college students who voluntarily presented in the student counseling service on problematic use of the Internet and personal computers operated in our University since 2010 under the scientific auspices of the 2nd Department of Psychiatry, and its primary aim is to provide counseling for every student who is diagnosed with IAD. Those first fifty cases were gathered from the time span from January 2010 to December 2013 and would only be confirmed as addicted to the Internet following a clinical interview. The interview process was based on a set of proposed criteria for Internet addiction published elsewhere in detail (Tao, Huang, Wang, Zhang, Zhang & Li, 2010) as well as a comprehensive Psychiatric evaluation. The sample included 39 males (78%) and 11 females (22%), mean age 21.64 years, SE = .218. All students fulfilled the impairment criterion (Tao et al., 2010) due to reduced academic ability. In six cases the students eventually dropped out of college, due to them having missed a considerable number of classes and examinations before seeking help. The vast majority of patients (48/50) presented for counseling under considerable pressure from family and significant others and did not register significant subjective distress in the intake interview.

The total number of possible candidates for the control sample was 367 students of Medicine and Nursing of our University who completed their training rotation class at the 2nd Department of Psychiatry during the same timeframe of 2010–13 (three consecutive classes of students) and were assessed in the same test battery as part of an ongoing research project on IAD. Each student was asked to participate voluntarily in the study by anonymously and privately completing the research battery. It was explained that the assembled data were to be specifically employed as a control sample whenever an affected student presents with problems, in which case he/she completes the same research battery. During the allocation phase all candidates were evaluated for possible addictive tendencies with the Online Cognitions Scale (OCS) questionnaire. Those who were above the threshold values for IAD were excluded from the pool of possible participants. This process removed 44 individuals. Then, fifty individuals were selected with the help of a random number generator while keeping with the sex ratio of the clinical sample. Mean age was 22.28 years, SE = .502 The control sample did not differ statistically significantly with the clinical sample with regards to age, t-test = 1.17, df = 66.793, p = .245.

2.2. Measures

Both cases and non-cases were handed the same test battery consisting of a demographics questionnaire, questions on online activities, the OCS, the Defense Style Questionnaire (DSQ), the Zuckerman–Kuhlman Personality Questionnaire (ZKPQ) and the Symptom Checklist (SCL-90) questionnaire.

The OCS is a theory-driven, multidimensional measure of IAD (Davis, Flett, & Besser, 2002) and its derived Greek version was employed in this study (Floros & Siomos, 2012). It includes thirty-six items scored on a Likert-type scale ranging from 1 to 7. The scale offers a total score and four factors corresponding to the individual's cognitions relative