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Pathological video game playing in Spanish and British adolescents: Towards the exploration of Internet Gaming Disorder symptomatology

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ABSTRACT

Research into problematic video gaming has increased greatly over the last decade and many screening instruments have been developed to identify such behaviour. This study re-examined the Problematic Videogame Playing [PVP] Scale. The objectives of the study were to (i) examine its psychometric properties in two European countries, (ii) estimate the prevalence of potential pathological gaming among adolescents in both countries, and (iii) assess the classification accuracy of the PVP Scale based on its symptomatology as a way of exploring its relationship with both the behavioural component model of addiction and the proposed Internet Gaming Disorder. The data were collected via a survey administered to 2356 adolescents aged between 11 and 18 years from Spain ($n = 1132$) and Great Britain ($n = 1224$). Results indicated that the reliability of both versions was adequate, and the factorial and construct validity were good. Findings also showed that the prevalence of pathological gamers estimated with a rigorous cut-off point was 7.7% for Spanish and 14.6% for British adolescents. The scale showed adequate sensitivity, specificity and classification accuracy in both countries, and was able to differentiate between social and potential pathological gamers, and from their addictive symptomatology. The implications of these findings are discussed.

1. Introduction

Across the spectrum of cyber-addictions, video game playing (VGP) – sometimes referred to as video gaming (VG) – was one of the first potential behavioural activities identified as a 'technological addiction' (Griffiths, 1995; 1996; 2008) including video games played offline via arcade machines, consoles, and handheld devices, and played online via personal computers, laptops, tablets, and mobile phones. As the technologies for playing video games have evolved, so too have the genres and formats. Video gaming is also a very popular leisure activity among adolescents (Kuss & Griffiths, 2012), considered a habit that has raised concerns because of its potentially addictive nature (e.g., Kuss & Griffiths, 2012; Prot, McDonald, Anderson, & Gentile, 2012), and has been referred to as 'video game addiction' (VGA; King, Delfabbro, & Griffiths, 2013). This persistent and maladaptive pattern of VGP behaviours has been studied since the early 1980s' first generation of offline video games (Griffiths, 1991; Phillips, Rolls, Rouse, & Griffiths, 1995) through to online video gaming (OVG; Hussain, Griffiths, & Baguley, 2012). In order to understand this potentially addictive and pathological behaviour, a number of studies have examined the behaviour as clinical entity in populations from both Western and Eastern countries across the world (Anderson et al., 2010; Colwell & Kato, 2005).

This line of research has been far from systematic (Salguero & Morán, 2002), and despite the increase of epidemiological studies over the last decade there is still insufficient empirical research to support the notion that VGA could be classed as a psychiatric disorder (King, Haagsma, Delfabbro, Gradisar, & Griffiths, 2013), although the empirical research is rapidly growing (Griffiths, Kuss, & King, 2012). From the mid-1990s to the present day, the

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prevalence of VGA among various populations has differed widely. For instance, some papers have estimated that between 6% and 19% of individuals are addicted to video games (Tejeiro, Gómez-Vallecillo, Pelegrina, Wallace, & Emberley, 2012) with others showing even greater variability of between 0.5% and 46% (King, Haagsma, Delfabbro, Gradisar, & Griffiths, 2013). Some of the main reasons for these wide discrepancies are the different conceptualizations of VGA, the non-standardized scales used to assess VGA, and the use of different methods to estimate the prevalence of VGA. King and Colleagues (2013) noted that the overestimation of VGA prevalence may be due to several factors including: (i) the widespread use of online surveys; (ii) adolescents and young gamers playing more online games (e.g., Massively Multiplayer Online Role Playing Games [MMORPGs]) than middle-aged adults; (iii) cultural differences (e.g., gamers from South East Asia appear to engage in more gaming compared with Western ones and their VGP preferences are different with the first playing more real-time strategy games compared with the second who prefer shooting games); and (iv) high engagement not being sufficiently differentiated from VGA.

As Tejeiro and colleagues (2012) stated, the VGA profile seems to be more heterogeneous and complex. Griffiths (1996) has long written about the biopsychosocial nature of addiction; in relation to VGA, researchers must pay attention to the individual's psychological characteristics (e.g., Haagsma, Caplan, Peters, & Pieterse, 2013), the sociological context of VGP (e.g., Lemmens, Valkenburg, & Peter, 2011), and its cultural dimension (e.g., King et al., 2013). Outside of the individual, to examine the structural characteristics of the video game and other technological features (e.g., King, Delfabbro, & Griffiths, 2011), because the interplay between the individuals, the games they play, and the context in which they play them may help to identify the underlying factors that play a role in the acquisition, development, and maintenance of VGA.

Research into behavioural addictions (e.g., gambling to gaming addiction), suggests that a minority of users experience symptoms traditionally associated with substance-related addictions (Griffiths, 1991). However, the current focus is on understanding the underlying factors of VGP and the possibility that this excessive behaviour leads to a behavioural addiction among adolescents (Topor et al., 2011). Traditionally, the most common practice has been to adapt criteria from similar conditions (e.g., pathological gambling) in the *Diagnostic and Statistical Manual of Mental Disorders* [DSM] (American Psychiatric Association [APA]) to construct diagnostic criteria for technological addictions. Criteria for VGA have mainly been adapted from the DSM criteria for pathological gambling (Fisher, 1994; Griffiths, 1991; Lemmens, Valkenburg, & Peter, 2009; Lemmens et al., 2011), but sometimes from the DSM substance dependence criteria (Salguero & Morán, 2002). In addition to adaptation of DSM criteria, excessive behaviours associated with addictive symptomatology have been also studied using scales developed using the behavioural components model of addiction (Griffiths, 2005) covering its six symptoms (salience, mood modification, tolerance, withdrawal, conflict and relapse). For example, it has been studied in relation to internet addiction (Kuss, Shorter, Rooij, Griffiths, & Schoenmakers, 2013), exercise addiction (Terry, Szabo, & Griffiths, 2004), work addiction (Andreassen, Griffiths, Hetland, & Pallesen, 2012) and social networking addiction (Andraessen, Tosheim, BrunBerg, & Pallesen, 2012).

At present, the Internet Gaming Disorder [IGD] symptomatology proposed in Section 3 of the latest DSM-5 (APA, 2013) includes nine criteria (i.e., preoccupation, withdrawal, tolerance, unsuccessful attempts to control the OVG behaviour, loss of other activities except OVG, continued OVG despite knowledge of problems, to lie or deceive other people, escape or relieve a dysphoric mood, and to compromise significant relationships). However, it is interesting to note that the DSM-5 uses the terms "internet" and "gaming", and appears to only focus on OVG as a subtype of problematic internet use (Griffiths, King, & Demetrovics, 2014), although IGD it is still considered as a broader term, namely "Internet Use Disorder" [IUD] (King, Haagsma et al., 2013; Petry & O'Brien, 2013); King, Haagsma et al. (2013) state there is still work needed to achieve a terminological consensus between clinicians and researchers, because only three symptoms are consistently measured in the present problematic, pathological or addictive gaming scales (i.e., withdrawal, loss of control and conflict), and only one instrument has shown the capacity to assess the majority of DSM-5 IGD criteria – the Problem Videogame Playing (PVP; Salguero & Morán, 2002) Scale.

The PVP Scale was the first validated scale to measure "problem video game play", developed to detect video game abusers (Tejeiro et al., 2012). The researchers' first intention was to look for adolescent problems associated with the addictive use of all types of video games (offline and online) and video game systems (consoles and computers). Since its development in 2000, it has been used in a few studies (e.g., Collins, Freeman, & Chamarro-Premuzic, 2012; Hart et al., 2009; Kuss, Louws, & Wiers, 2012; Parker, Taylor, Eastabrook, Schell, & Wood, 2008), very few have paid attention to the symptomatology measured. However, most studies using PVP have simply compared if differences between groups (Bioulac, Arfi, & Bouvard, 2008: ADHD children and a controls; Caillon, Bouju, & Grall-Bronnec, 2014: adolescents versus adults).

Using this validated scale, the present study has three objectives: (i) to examine its psychometric properties in two European countries, (ii) to estimate the prevalence of pathological gaming among adolescents in Spain and Great Britain, and (iii) to assess the classification accuracy of the PVP Scale based on its addictive symptomatology as a way of exploring its relationship with both the behavioural component model of addiction and the recently proposed IGD.

2. Method

2.1. Participants and procedure

The study surveyed a convenience sample comprising 2356 adolescents from two sub-samples in Spain (Barcelona: $n = 1132$) and Great Britain (London: $n = 1224$). The selection of these countries was twofold: (i) the PVP has only been developed and published in two languages (i.e., Spanish and English), and (ii) according to international organizations, both countries are among those with the highest addiction rates (European Commission, 2006; United Nations Office on Drugs and Crime, 2013). The sample comprised high school students that were selected from several districts in each city, as well as from different school types (state, public and private) to aid representativeness. Confidentiality and anonymity was assured to all participants. Additionally, permission to participate in the study was obtained. 92.5% of students successfully completed all the PVP items in Spain and 77.5% in Great Britain (Barcelona: $n = 1047$; London: $n = 949$). The participants were aged between 11 and 18 years (Spain: $M = 14.55$, SD = 1.82; Great Britain: $M = 13.56$; SD = 1.50), and the distribution of ages was segmented following Salguero and Morán's (2002) proposal (the age groups: 11–12, 13–15, 16–18): in the Spanish were 15.23%, 49.8% and 34.9%; in the British 26.2%, 64.7%, and 9.1% respectively. More than half of the sub-samples were male (Spain: 53.4%; Great Britain: 67.3%).

2.2. Measures

The paper-and-pencil questionnaire comprised three sections: (a) socio-demographics; (b) video game patterns usage; and (c)