



Research Report

An exploratory study of the association between online gaming addiction and enjoyment motivations for playing massively multiplayer online role-playing games



Zaheer Hussain ^{a,*}, Glenn A. Williams ^b, Mark D. Griffiths ^b

^aThe Centre for Psychological Research, University of Derby, Kedleston Road, Derby DE22 1GB, United Kingdom

^bInternational Gaming Research Unit, Nottingham Trent University, Burton Street, Nottingham NG1 4GN, United Kingdom

ARTICLE INFO

Article history:

Keywords:

Massively multiplayer online role-playing games
Addiction
Motivations
Latent Class Analysis
Risk
Online gaming

ABSTRACT

Massively multiplayer online role-playing games (MMORPGs) are a popular form of entertainment used by millions of gamers worldwide. Potential problems relating to MMORPG play have emerged, particularly in relation to being addicted to playing in such virtual environments. In the present study, factors relating to online gaming addiction and motivations for playing in MMORPGs were examined to establish whether they were associated with addiction. A sample comprised 1167 gamers who were surveyed about their gaming motivations. Latent Class Analysis revealed seven classes of motivations for playing MMORPGs, which comprised: (1) novelty; (2) highly social and discovery-orientated; (3) aggressive, anti-social and non-curious; (4) highly social, competitive; (5) low intensity enjoyment; (6) discovery-orientated; and (7) social classes. Five classes of gaming addiction-related experiences were extracted including: (1) high risk of addiction, (2) time-affected, (3) intermediate risk of addiction, (4) emotional control, and (5) low risk of addiction classes. Gender was a significant predictor of intermediate risk of addiction and emotional control class membership. Membership of the high risk of addiction class was significantly predicted by belonging to a highly social and competitive class, a novelty class, or an aggressive, anti-social, and non-curious class. Implications of these findings for assessment and treatment of MMORPG addiction are discussed.

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1. Introduction

Over the last decade, computer technology has greatly advanced to enable rapid interaction with other people in a range of online virtual worlds. This advancement has led to an increasing number of people using the Internet in many different ways and has arguably had a great positive impact on the lives of people that use it. Despite the many positive benefits, there has been an increase in research focusing on the use of the Internet and its negative aspects including both generalized Internet addiction and more specific online addictions such as online gaming addiction (e.g., Lopez-Fernandez, Honrubia-Serrano, Gibson, & Griffiths, 2014; Wang, 2001). Marlatt, Baer, Donovan, and Kivlahan (1988) defined addictive behaviour as:

"A repetitive habit pattern that increases the risk of disease and/or associated personal and social problems. Addictive behaviours are

often experienced subjectively as 'loss of control' – the behaviour contrives to occur despite volitional attempts to abstain or moderate use. These habit patterns are typically characterized by immediate gratification (short term reward), often coupled with delayed deleterious effects (long term costs). Attempts to change an addictive behaviour (via treatment or self initiation) are typically marked with high relapse rates" (p. 224).

This is an all-encompassing operational definition as it can refer to both substance and non-substance behaviours (including gaming addiction). One method commonly used to determine whether a particular behaviour is addictive is to compare it against clinical criteria of more established addictions (Griffiths, 2005). This method makes potential addictive behaviours more clinically identifiable and has been supported by researchers that have carried out research into various 'technological addictions' such as television addiction (Sussman & Moran, 2013), mobile phone addiction (Carbonell et al., 2012), internet addiction (Kuss, Griffiths, & Binder, 2013), and gaming addiction (King, Haagsma, Delfabbro, Gradisar, & Griffiths, 2013). Much of the conceptualization of excessive gaming as an addiction stems back to the work of

* Corresponding author.

E-mail addresses: z.hussain@derby.ac.uk (Z. Hussain), glenn.williams@ntu.ac.uk (G.A. Williams), mark.griffiths@ntu.ac.uk (M.D. Griffiths).

Griffiths in the 1990s who adapted versions of the DSM-III-R for pathological gambling (American Psychiatric Association, 1987) to video game addiction (e.g., Griffiths, 1997; Griffiths & Hunt, 1995, 1998). Other scholars adapted the DSM-IV criteria for pathological gambling to Internet addiction (e.g., Young, 1998).

Furthermore, it can be argued that all types of addictive behaviour have elements in common. For instance, Griffiths (2005) operationally defined addictive behaviour as any behaviour that features the six core components of addiction, which were first outlined by Brown (1993) and later modified by Griffiths (1996, 2005), (i.e., salience, mood modification, tolerance, withdrawal symptoms, conflict and relapse). Under this model, it is argued that any behaviour (such as gaming addiction) that fulfils the six criteria can be operationally defined as an addiction.

To illustrate the level of interest in the area of online addictions, a recent systematic review identified 69 studies examining Internet addiction with sample sizes of over 1000 participants (Kuss, Griffiths, Karila, & Billieux, 2014). Moreover, sophisticated ways of conceptualising and measuring video game addiction, or risk of experiencing it, have been adopted and this has meant some authors (e.g., Kuss & Griffiths, 2012) have been arguing that gaming addiction can best be understood along a continuum, rather than as a dichotomous construct. When using cut-offs for video game addiction, research by Hussain, Griffiths, and Baguley (2012) found that there could be as many as 44.5% of a sample of video game players who are deemed to be at risk of video game addiction, if using a polythetic coding method (i.e. at least four of seven items of a brief Gaming Addiction Scale being endorsed), whereas this estimate could be reduced to as low as 3.6% of all gamers, if using the monothetic coding method (i.e. all seven items being endorsed).

Clearly, there appears to be a wide range of players who could be affected by problematic video game play behaviour, but the true prevalence of video game addiction is still uncertain. This may be due to a range of measures being used to tap into the phenomenon but also the tendency of some researchers to primarily see addiction as an either/or construct with gamers being deemed to be either addicted or not. However, it has been argued that video game play, and problems associated with it, needs to be understood as multidimensional with aetiological factors such as structural characteristics and motivation for game play being just as important as differentiating whether someone is addicted to video games or not (Kuss & Griffiths, 2012).

One form of virtual world activity that has evolved on the Internet is the playing of Massively Multiplayer Online Role-Playing Games (MMORPGs). These games are now a popular form of entertainment used by millions of gamers worldwide, which provide an intense experience of immersion and can be extremely time-consuming (Kuss & Griffiths, 2012). This has also led to an increase of research into the area of online gaming over the past decade. Some of the areas of investigation have included gamer demographics (e.g. Griffiths, Davies, & Chappell, 2003, 2004; Yee, 2006a, 2006b), online gaming addiction (e.g., Hussain et al., 2012; Spekman, Konijn, Roelofsma, & Griffiths, 2013), within-game group formation (e.g., Chen, Sun, & Hsieh, 2008; Ducheneaut, Yee, Nickell, & Moore, 2006; Odrowska & Massar, 2014), and within-game social interaction (e.g., Cole & Griffiths, 2007; Hussain & Griffiths, 2008).

Estimates of video game addiction have varied. One meta-analysis of studies (Ferguson, Coulson, & Barnett, 2011) suggested that it could be approximately 3% among gamers. These authors argued that a useful distinction, which overlaps with the continuum concept of video game addiction, is that gaming can be fully engaging and it can also interfere with one's life, but that a combination of many of these experiences would be needed for full-blown addiction to be present. Another study (Kuss, Griffiths et al., 2013), which focused on internet addiction, also obtained a

similar prevalence rate, as 3.2% of the sample of 2257 participants appeared to have likely characteristics of internet addiction. An interesting finding was that a combination of online gaming and openness to experience increased the risk of addiction.

A larger study by Kuss, van Rooij et al. (2013) investigated the risk for Internet addiction in a sample 3105 Dutch adolescents by looking at the interplay between personality traits and different Internet applications. The adolescents completed questionnaires including the Compulsive Internet Use Scale (CIUS) and the Quick Big Five Scale. It was found that 3.7% of adolescents were classified as addicted to using the Internet. Playing online games increased the risk of Internet addiction by 2.3%. The amount of online gaming (i.e., the number of hours played) and low scores on extraversion predicted Internet addiction.

MMORPGs appear to be highly appealing environments and many gamers are motivated to use them (Griffiths et al., 2003; Griffiths et al., 2004), and they have also been associated with a higher risk of video game addiction (Ng & Wiemer-Hastings, 2005). Gamer motivation is an area of importance as it provides insight into intentions for playing online from casual through to excessive play. Having knowledge about motivations for online gaming has the potential to provide insights about problematic gaming behaviour. One of the more popular theoretical stand-points of those examining gaming motivations is from a 'uses and gratifications' (UaG) perspective (e.g., Sherry, Lucas, Greenberg, & Lachlan, 2006; Wu, Wang, & Tsai, 2010; Yee, 2006a, 2006b). As Sherry et al. (2006) note, UaG research is based in the structural–functionalist systems approach that attempts to understand the interface between biological entities and the context in which they live. Research following a UaG perspective largely shows that the gaming motivations largely comprise personal and social gratifications.

Research by Ryan, Rigby, and Przybylski (2006) involved using a measure of gaming motivations (Yee, 2006a, 2006b). The authors suggested that strong motivators for online gaming were (i) psychological need for relatedness and (ii) autonomy and competence features. Billieux et al. (2011) investigated the psychological predictors of problematic involvement in MMORPG use. Their sample comprised 54 male gamers who were screened using the UPPS Impulsive Behavior Scale, the Motivations to Play Online Questionnaire (MPOQ) and Internet Addiction Test (Young, 1999). The researchers found that problematic use of MMORPGs was predicted by (i) high urgency, and (ii) a motivation to play for immersion. Urgency was defined as the tendency to act rashly when experiencing negative affect states. The findings of the study were potentially useful for understanding predictors and motivations of gamers and the role of immersion as a motivation for playing online. However, the findings were limited by the very small sample size.

However, it is worth noting that urgency has been linked to various problem behaviours including drug abuse (Verdejo-García, Bechara, Recknor, & Pérez-García, 2007), pathological gambling (Smith et al., 2007), problematic mobile phone use (Billieux, Van der Linden, d'Acromont, Ceschi, & Zermatten, 2007; Billieux, Van der Linden, & Rochat, 2008) and problem drinking (Anestis, Selby, & Joiner, 2007). According to Billieux et al. (2011) immersing oneself in a virtual world can lead to negative, real-world consequences (e.g., procrastination, avoiding real-world problems).

Yee (2006a, 2006b) looked at gamer motivations by surveying a sample of 3000 online gamers. An online questionnaire was published on various online forums that catered for popular MMORPGs. Yee (2006a, 2006b) used a 40-item inventory to create a model of player motivations. The results revealed 10 motivation sub-components of Advancement, Mechanics, Competition, Socialising, Relationship, Teamwork, Discovery, Role-Playing, Customisation, and Escapism. These components were grouped into three main motivation components of Achievement, Social,

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