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Antecedents and consequences of game addiction



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ABSTRACT

Antecedents and consequences of game addiction are investigated. Correlation study method is utilized; structural equation modeling is applied to analyze the data. There are eleven hypotheses generated for the model. The data is collected via numerous instruments proven as reliable and valid by the previous studies. There are 159 undergraduate students as participants of the study. Antecedent variables are socio-economic status (SES), computer-ownership, gender, smoking, online and computer gaming, mothers' employment and education level. Consequence variables are grade point average, self-esteem, and self-confidence. The results indicates that socio-economic status, smoking, online gaming, computer gaming, and mother employment status increased game addiction; whereas, gender (female) and mother education level decreased game addiction. SES, gender, online and computer gaming affect game addiction significantly; smoking, mothers' employment status and education level do not have a significant impact. For the consequences, game addiction decreases significantly GPA and Self-Esteem; it does not influence significantly in self-confidence. Parents and educational institutions may be illuminated about prevention or monitoring of excessive online or computer game playing. Further research studies and implications are presented and discussed.

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1. Introduction

By the beginning of the 1990s, computers had come to take up a predominant part in leisure culture (Griffiths & Dancaster, 1995), and video games became a matter of concern for researchers (Keepers, 1990); by the end of the 20th century, online gaming had become one of the most addictive activities on the Internet (Young, 1998) and a subject of enthusiastic research. Griffiths (2000) defined computer-game addiction as an active, nonchemical sub-category of behavioral addiction. Other terms in the literature used interchangeably for game addiction include excessive gaming, engagement in games, problematic usage, video game playing, problematic online game use and video game addiction (Griffiths, 2000; Griffiths, Kuss, & King, 2012; Grüsser, Thalemann, & Griffiths, 2006; Kim & Kim, 2010; King, Delfabbro, & Zajac, 2011; Peters & Malesky, 2008; Skoric, Teo, & Neo, 2009).

In the 2000s, researchers defined excessive activity and addictive activity as two very different things. To Griffiths (2005), exces-

sive gaming does not necessarily mean that a person is addicted; in fact, excessive enthusiasm is considered healthy and to add to life, whereas addiction takes away from it. However, Griffiths (2008) later acknowledged that until addiction researchers agree on what it means to be addicted, there can be no agreement as to whether behavioral excesses like playing video games can be classed as a 'genuine' addiction. Weinstein (2010) argued that online gaming addiction should be characterized by the extent to which excessive gaming impacts negatively on other areas of the gamer's life rather than by the amount of time spent playing. Similarly, it has been claimed that the activity cannot be described as an addiction if there are few (or no) negative consequences in the gamer's life, even if the gamer is playing 14 h a day (Griffiths, 2010).

In 2007, the American Psychiatric Association reviewed video game addiction for inclusion in the next DSM to be released in 2012. It concluded that there was not enough evidence to warrant the inclusion of computer game addiction as a disorder (Weinstein, 2010).

Gaming has since expanded in the online environment to include 'massively multiplayer online role playing games', i.e. 'MMORPGs', such as World of Warcraft and Everquest, which are played as part of a community (Griffiths et al., 2012). According

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to Thomas and Martin (2010), when compared to older video-arcade games, newer computer games and online Internet activities possess more stimulating visual and auditory effects and more rapid event frequency that encourage continuous use (Thomas & Martin, 2010). The authors considered these properties to be worrisome and suggested that these increasingly popular computergaming and interactive-online-media activities are more addictive than older video-arcade games.

2. Antecedents of game addiction

Demographics, leisure-time activities and other addiction behaviors are examined below as antecedents of game addiction.

2.1. Demographics

2.1.1. Hypothesis 1. Higher socio-economic status increases game addiction (H1)

A typical "addict" is a social figure as a teenager, usually male, with little or no social life and little or no self-confidence (Griffiths, 2000). However, the literature clearly shows that computer gaming is spread across the age (and to some extent gender) spectrum and is not limited to adolescents. Players are generally well educated, with approximately 50% already possessing an undergraduate degree and others who are in the educational system and on track to receive one.

Besides all above, an addict may be someone from a higher socio-economic status, on the other hand, accessing the Internet or a video-game play could not be easily affordable for some individuals. Pasquier (2001) indicated that domestic computer ownership was still privilege of high and middle SES families. This statement was also proved by World Internet Users 2015 Population stats which pointed out that only 42.4% of world population had access to the Internet, yet, there was 753.0% increase between 2000 and 2015 (Internet World Stats, Dec 31, 2014). In his study Gunuc (2015) investigated the socio-economic conditions (family structures and demographic backgrounds of the participants) of video game playing and Internet using individuals and he reported that, although they wanted to use the Internet or play video games longer, almost half of them had to restrict their Internet use or decrease the amount of their Internet use due to financial and familyrelated factors. This points out the fact that although individuals are willing to spend more hours for playing games and Internet use, they are restricted with their financial capabilities which affect their access to computers and the Internet.

2.1.2. Hypothesis 2. Computer ownership increases game addiction (H2)

Computer ownership is believed to trigger game addiction. Şahin and Tuğrul (2012) found students who have a computer at home have high levels of game addiction. Çakır, Ayas, and Horzum (2011) also found students who have personal computers to show significantly higher levels of Internet and computer-game addiction than students who don't have personal computers. Significantly, recent studies indicate that gaming is the best cross-sectional predictor of Internet addiction (Rehbein & Mößle, 2013; Van Rooij, Schoenmakers, Van de Eijnden, & Van de Mheen, 2010). However, Internet and game addiction are not distinct constructs, as online gaming acts as a behavioral overlap between both concepts. Studies of Internet addiction include video-game addiction in addition to other Internet activities. Thus, the current state of research does not permit a differentiated understanding of the concepts of video game addiction and Internet addiction or a comparative evaluation of the clinical relevance of video game addiction and Internet addiction (Rehbein & Mößle, 2013).

2.1.3. Hypothesis 3. Males are more prone to game addiction (H3)

Past research has highlighted gender differences in terms of level of engagement, age of onset and prevalence of addiction to video-arcade (Fisher, 1994; Thomas & Martin, 2010) and computer games (Tejeiro Salguero & Morán, 2002; Thomas & Martin, 2010; Wood, Gupta, Derevensky, & Griffiths, 2004), with males found to be significantly more affected than females. Video game "addiction" is a problem among adolescents, particularly among males (Hauge & Gentile, 2003), particularly adolescent males and young male adults appear to be at greater risk of experiencing problematic video game play (Griffiths et al., 2012). Compared to video game players, MMO players are more likely to be males (Oggins & Sammis, 2012). For instance, in a self-selected sample of 7000 EverQuest players (mean age 31), most (80%) were males (Williams, Yee, & Caplan, 2008). Analyzing company polls from two EverQuest fan sites, most respondents were found to be again males - approximately 85% (Griffiths, Davies, & Chappell, 2003). Lee et al. (2006) reported that games are frequent and common subjects in conversation in Korean male students. It is obvious that males are overrepresented for video gaming problems (Mentzoni et al., 2011; Rehbein, Psych, Kleimann, Mediasci, & Mößle, 2010). It is suggested that school-adjustment enhancement programs should be developed particularly for boys to prevent Internet game addiction (Kweon & Park, 2012). Cruea and Park (2012) explained this gender disparity due to (a) marketing strategies of video games which are unappealing or even stressful to women due to reasons such as physical violence, excessive competitiveness; (b) social psychological factors discouraging young female gamers from actively participating in the gaming culture, social taboos as mastery of games is a social advantage for boys but not girls; (c) physical factors hindering women of the control of gaming equipment.

Although boys are significantly differentiated from girls for playing games regularly and for being more "dependent" (Griffiths & Hunt, 1998); in a further study Kweon and Park (2012) found that there is a moderate difference between boys and girls in terms of Internet game addiction in a school adjustment enhance program. Similarly, Rehbein and Mößle (2013) contended that there are no differences found between boys and girls regarding Internet activities such as gaming, downloading, gambling and shopping. Indeed, problematic social network users which are mostly girls are more likely to come in contact with free-2-play games implemented in social networking sites. Paraskeva, Mysirlaki, and Papagianni (2010) stated that, particularly, female players are more likely to use the MMORPG environment in order to build supportive social networks to escape from real life stress and to be immersed in a fantasy world. Homer, Hayward, Frye, and Plass (2012) also explained that gender discrepancies spent playing video games is diminishing in time. He provided 2005 and 2010 Kaiser Family Foundation reports as an evidence which pointed out that girls' number increased in time as video game play became more and more ubiquitous (Rideout, Foehr, & Roberts, 2010; Roberts, Foehr, & Rideout, 2005). In fact, Griffiths et al. (2003) envisioned in his study the computer gaming world is no longer directly aimed at younger audiences and includes significant numbers of female players. This situation indicate that girls are on the stage today in the game world and social networking sites trigger the accessibility opportunities of girls' to online games.

2.1.4. Hypothesis 4. Having an employed mother increases game addiction (H4)

The number of Internet addicts is higher among adolescents with employed mothers than among those with unemployed mothers (Doğan, 2013). It is possible that youngsters tend to spend more time playing online games when there is a lack of supervision and monitoring. This idea is supported by a study by

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