Beyond the fascination of online-games: Probing addictive behavior and depression in the world of online-gaming

Birgit U. Stetina *, Oswald D. Kothgassner, Mario Lehenbauer, Ilse Kryspin-Exner

Department of Clinical, Biological and Differential Psychology, Division of Clinical Psychology and Health Psychology, University of Vienna, Austria

ARTICLE INFO

ABSTRACT

This study examined problematic gaming behavior and depressive tendencies among people who play different types of online-games. Other game-related variables were investigated to determine if other differences between three game types could be established. Participants in the current research ($n = 468$) can be classified into three independent groups. Subjected users either solely played massive multiplayer online role-playing games (MMORPGs) or they preferred online-ego-shooters (OES) or real-time-strategy games (RTS). Results indicate that MMORPG users show more often problematic gaming behavior, depressive tendencies and lower self-esteem compared to users playing other online-games. MMORPG users reported to playing significantly more often in order to escape from real-life problems, which might be a valuable coping strategy but might also lead to problematic gaming behavior.

© 2010 Elsevier Ltd. All rights reserved.

1. Introduction

"Beyond the gates of mighty kingdoms, lies a vast and unexplored world. A world of honor. A world of mystery. A world of danger". This trailer from World of Warcraft® was the entrance for thousands of online-gamers to a new, unexplored world. These fields were exciting and stimulating, had ancient qualities like glory, courage or commitment, afforded mysterious contacts and established pathways of heroism and danger, mostly embedded in a fantasy tale; full of opportunities and without observing the limits of daily life.

1.1. Overview

Massively multiplayer online role-playing games (MMOPRGs) are virtual environments with a persistent interaction of people playing these games (Ng & Wiemer-Hastings, 2005) using a self-created virtual character – the avatar. Smahel, Sevcikova, Blinka, and Vesela (2009) described three main factors of playing MMORPGs (1) doing quests and achievements, (2) interacting with other players and (3) "leveling-up" the avatar. Compared to other online-games – such as traditional ego-shooters or real-time-strategy games, which follow a bounded storyline and become boring or simply end at some point – MMOPRGs are endless, because of a widespread system of goals, awards and personal achievements. The avatar rises to a higher level or becomes wealthier and stronger, by collecting valuables and weapons. The relationship between the player and the avatar is described by the players' affection to the character, which leads to negative feelings if the avatar is under attack or dies (Wolvendale, 2006). Another important factor is that it is not a simple one-man-show; players have to collaborate in "guilds" (virtual groups of players with their own social rules and structure) to gain higher or more complex goals; sometimes players have to interact in these "guilds" for their own avatars' survival and form some kind of social community (Bilzzard Entertainment, 2008). For many players actually playing the MMORPG is less important than the social in-game interaction (Griffiths, Davies, & Chappell, 2004). Some players tend to consider that social relationships and interaction in online-games are more satisfying than their offline-relationships (Ng & Wiemer-Hastings, 2005). At the same time, some authors (Smahel et al., 2009) emphasize that these players do not automatically develop problematic internet behavior. They could also communicate online without playing MMORPGs and show no problematic online behavior. Nevertheless, there seems to be a growing consensus that a preference of online social interactions over offline face-to-face communication plays a major role in the development of problematic internet behavior (Caplan, 2005; Morahan-Martin & Schumacher, 2003).

Further research shows MMORPG users spend more hours playing than other online game players (Ng & Wiemer-Hastings, 2005). From this point of view the social component could be an important factor for being more in-game. Thus, Yee (2006a) showed several components of player motivation for engaging in

* Corresponding author. Address: Faculty of Psychology, University of Vienna, Liebiggasse 5, 3. Stock, rechte Stiege, 1010 Vienna, Austria. Tel.: +43 4277 47970; fax: +43 1427747979.

E-mail addresses: birgit.stetina@univie.ac.at (B.U. Stetina), oswald.kothgassner@univie.ac.at (O.D. Kothgassner), mario.lehenbauer@univie.ac.at (M. Lehenbauer), ilse.kryspin-exner@univie.ac.at (I. Kryspin-Exner).

MMORPGs. In addition to a (1) social component, there are (2) the achievement component and (3) the immersion component. *Escapism*, a subcomponent of the category immersion; and *advancement*, a subcomponent of achievement could be identified as best predictors for addictive behavior. It is possible to differentiate between players characterized by *escapism*, who play to escape from real-life or to avoid real-life problems and players characterized by *advancement*, who play for power and status. Newer studies of Caplan, Williams, and Yee (2009) showed the immersion motivation and especially the subcomponent of escapism as the strongest predictors for problematic internet use and online-gaming. Regarding these findings Hsu, Wen, and Wu (2009) found five factors of critical user experiences in MMORPGs concerning problematic internet use and online-gaming. The first factor seems to be (1) *curiosity* which leads the user to interaction with the game content, furthermore (2) *rewards* satisfy peoples' needs in the real world or rewards that the real world fails to provide, also (3) *belonging* and (4) *obligation* as factors relating to the online social community should be mentioned, and (5) the *characteristics of role-playing*, especially the development of the character, its progress and also the users' attachment to the avatar.

Regarding questions concerning the psychopathological dimensions of excessive online-gaming several studies showed connections between problematic internet use and problematic online-gaming with major depression, bipolar disorders, anxiety disorders or OCD (Ceyhan & Ceyhan, 2008; Shapira, Goldsmith, Keck, Khosla, & McElroy, 2000; Shapira et al., 2003; Sheperd & Edelmann, 2005; Spada, Langston, Nikcevic, & Moneta, 2008; Ybarra, Alexander, & Mitchell, 2005; Young & Rogers, 1998), and also with aggression (Grüsser, Thalemann, & Griffiths, 2007), low self-esteem (Kim & Davis, 2009; Niemz, Griffiths, & Banyard, 2005), loneliness and depressive tendencies (Amichai-Hamburger & Ben-Artzi, 2003; Caplan, 2003; Morahan-Martin & Schumacher, 2003; Stepanikova, Nie, & He, 2010), social anxiety and social skills deficits (Caplan, 2005, 2007; Liu & Peng, 2008, 2009; Lo, Wang, & Fang, 2005) or other psychopathological problems and personality traits (Meerkerk, Van den Eijnden, Franken, & Garretsen, 2010). Yet not all gamers seem to be affected; according to the early work of Young (1998a, 1998b) these problems appear before these people go online and maybe coexist afterwards in form of a vicious cycle.

Self-esteem seems to be a necessary variable in explaining problematic internet behavior (Kim & Davis, 2009) and maybe also for problematic online-gaming. Bessiere, Seay, and Kiesler (2007) show players with high self-esteem recreate the avatar according to their actual self. Lower levels of self-esteem lead to a creation of an *ideal self based character*. This trend is more prominent among those who were more depressed and had lower levels of self-esteem. Another way to describe excessive online-gaming regarding the players' self, is concerned with the players' perceived self-efficacy based on a desire for control and also the possibility of positive self-presentation; both connected with a strong engagement to the game brand itself (Wan & Chiou, 2006). Considering all; Young (1998a, 1998b) stated that embedded interactive applications appear to play a role in the development of problematic internet use. The results of Caplan et al. (2009) confirm the thesis that using the internet for social interactions, for meeting new people and participating online in social communities are predictors of problematic internet use. As explained above MMORPGs are very social and users of MMORPGs seem to be particularly endangered concerning problematic internet use or problematic online-gaming behavior.

1.2. Aim of the current study

The present research addresses often discussed fundamental questions regarding problematic gaming behavior, depression and self-esteem of online-gamers. The specified assumptions of this research were divided in two separate sections. A first sequence of hypotheses (H1–H4) focuses on differences between three types of online-games regarding problematic gaming behavior, depressive tendencies and several aspects of self-esteem. Additionally the effect of escapism and time were included in this set of assumptions. A second element of this research (RQ2, H5) is based on using cut-off criteria to diagnose conspicuous behavior. Participants were grouped according to the empirically proven cut-off scores for problematic gaming behavior and non-critical gaming behavior (Hahn & Jerusalem, 2001) as well as according to the DSM-IV criteria for Depression (Kühner, 1997). Participants fulfilling either the cut-off criteria for problematic gaming behavior, depression according to DSM-IV or both were considered as a conspicuous sample.

We assume that several types of online-games have different distributions in these variables above, because it can be supposed that participants playing a MMORPG are faced with a completely other game environment than users of online ego-shooters (OES) or real-time-strategy (RTS) due to an omnipresent integration of social interaction, the complex system of achievements and the effect of immersion, especially concerning the component of escapism (Caplan et al., 2009; Griffiths et al., 2004; Ng & Wiemer-Hastings, 2005; Smahel et al., 2009; Williams, Yee, & Caplan, 2008).

- H1: MMORPG users show higher values concerning problematic gaming behavior and depressive tendencies than other inartificial groups of online gamers.
- H2: MMORPG users show lower values concerning social and emotional aspects of self-esteem than other inartificial groups of online gamers.

As noted in former studies time was found as an important variable for investigating MMORPGs (e.g. Caplan et al., 2009; Ng & Wiemer-Hastings, 2005). Also factors of immersion, especially escapism can be identified as predictors for internet use (Yee, 2006a, 2006b).

- H3: MMORPG users show higher values concerning the effect of escapism than other inartificial groups of online gamers.
- H4: MMORPG users spend continuously more time playing the game than other inartificial groups of online gamers.

Whereas the first step announced specific differences of the three types of online-games the second step analyzed the epidemiological data by using a case-control design. We tried to answer questions about MMORPGs as an indicator for conspicuous behavior. Additionally some generic descriptive information about inconspicuous and conspicuous behavior should be considered, because of growing prejudices in society.

- RQ1: How many participants could be characterized as conspicuous or inconspicuous?
- RQ2: Are MMORPGs more related to conspicuous behavior than OES or RTS?

According to the findings of Ng and Wiemer-Hastings (2005) the participants' data is investigated concerning time spent in-game continuously. Following this research a cut-off score of eight hours was chosen to test the assumption that playing online-games over eight hours continuously can be established as an indicator for conspicuous behavior.

H5: Users of online-games spending over eight hours continuously playing the game show more often problematic gaming behavior and depressive tendencies.