

Exploration of Self-regulation and Impulsiveness between Problematic Online Gamers and Non-gamers

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Abstract

Self-regulation refers to the basic skills of attention, which is an advanced level process on conscience and effortful inhibitory control (Konstanz, 2009; Liu & Chang, 2018). Previous research studies claimed that self-regulation might be one of the important risk factors for game addiction (Griffiths, 2010; Safarina & Halimah, 2019; Yau et al., 2013). In addition, some research studies also indicated gamers couldn't control gaming behavior due to low self-regulation. Zhou et al. (2012) found that problematic gamers demonstrated good executive controlling skills in only responding to the game-related materials (go) but poor inhibiting when game-related materials as the distractors (no-go). However, two critical weaknesses were made, thus, this study aims at examining the difference of self-regulation between problematic gamers and non-gamers by a revised go/no-go switch task. 25 problematic gamers and 25 non-gamers aged 18-35 were recruited for experimental and control groups, respectively. Brief Internet Game Screen was used to identify the problematic gamers and non-gamers; Barratt Impulsiveness Scale and Brief Self-Control Scale were applied to measure impulsiveness and self-regulation. Paradigm was used for stimulus presentation and data collection. The results found that gamers demonstrated higher impulsiveness ($p < .001$) and higher self-regulation (refers to attention and inhibitory control skills, $p < .001$) than non-gamers. This study rejects Zhou's study that gamers are able to demonstrate good executive controlling skills in differentiating stimuli. This study breaks through the steady concept of the gamers that they probably have lower self-regulation than the non-gamers. Exploring the mechanisms are needed in future.

Keywords: Gaming, Self-regulation, Impulsiveness

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Introduction

Online gamers are commonly viewed as no self-regulation and impulsive individual. However, some previous studies found that online gamers had a higher function of executive control than non-gamers. Till now, there is no consistent conclusion on this issue. Moreover, the problematic online gamers (frequent players, but not an addictive gamer) didn't draw much attention from the academic perspective, however, they had a higher number population than the addictive one. Therefore, the presented study uses an experimental method to examine self-regulation and impulsiveness among problematic online gamers.

Body

Online gaming is a common activity among the children and adolescents, which is a term of an online activity personally or with other gamers through the Internet connection (Kiraly et al., 2014; Kuss & Griffiths, 2012). Online games are commonly defined as the software applications that are installed in some electronic devices, such as personal computers or mobiles, and play through the Internet or other online networks (Adams, 2014; Aleem et al., 2016). Before having the Internet, most of the games only requested a single player with no competition with the real person, but players may compete with AI (artificial intelligence), such as the "TicTacToe" in 1952. The first online game was launched in around 1960s since the networked host-based system was developed. However, the internet interaction was restricted within the same building or a nearby location in the early period.

Executive functioning is a higher-order cognitive ability for setting shift and decision making (Buelow et al., 2015; Lezak et al., 2004). It particularly benefited in processing the complex tasks, such as those requiring participants to deal with different simulations simultaneously in a rapid switched way (Logan & Gordon, 2001; Norman & Shallice, 1986). Other than that, EF also responsible for those game or sports with faster reaction and competitions (Boot et al., 2008). The repeated training by numerous practices on gaming, led to improvement on the executive control skills. For example, respond faster on gaming. However, some may also claim that attention bias, which referred to a type of cognitive bias, actually demonstrated obvious impact on gamers such that gamers increased their attention toward game-related sources and ignored the irrelevant or non-game-related sources (Cox et al., 2006; Jeromin et al., 2016).

In the meanwhile, many studies indicated that low self-regulation was a common characteristic for the gamers, especially the addictive gamers (Trommsdorff, 2009). It seems that self-regulation might be the risk factor that determines whether develop to Internet gaming disorder (Carras et al., 2018; Kuss & Griffiths, 2012; Yau et al., 2013). The internet gaming disorder is a subtype of addictive disorder in DSM 5, which referred to "Persistent and recurrent use of the internet to engage in game, often with other players, leading to clinically significant impairment or distress in a 12-month period (Dong et al., 2017b). To review some statistics, the prevalence of internet gaming disorder ranges from 0.3% to 1%, especially had a high prevalence in Asian countries rather than western countries (Przybylski et al., 2017). However, one important thing is that most of the addictive or pathological gamers were not diagnosed to Internet gaming disorder (Jeromin et al., 2015).

Moreover, the problematic online gamers, who actually had the highest prevalence of gaming disorder than the pathological or addictive gamers (Jeromin et al., 2015). Empirically, many research studies and treatment only focused on the addictive or pathological individuals but

pay less attention on the problematic gamers (e.g., Spada, 2014; Wang, 2014). Other than that, some of the studies, for example, Dong and his colleagues' study in 2017, only recruited male for the target participants. In our presented studies, these research gaps were filled.

Conclusion

In the presented study, there are two significant findings. First of all, to compare the differences on impulsiveness and self-regulation between the gamers and non-gamers, the independent sample t-test was used. The results found that there was a significant difference in impulsiveness and self-regulation between two target groups. In detail, you may see that the gamers had a high impulsiveness than the non-gamers, the mean scores were 98.36 and 63.84. However, the gamers also had a higher self-regulation level than the non-gamers, and the mean were 37.24 and 23.28.

Furthermore, in order to compare the response time between the problematic online gamers and non-gamer, the independent sample t-test was used. The results indicated that there was a significant difference between the gamers and the non-gamers. In detail, the problematic online gamers had a faster response time in both natures of pictures. Importantly, to consider the accuracy rate, the problematic online gamers also had higher accuracy rates in both nature of pictures also. In other word, the problematic online gamers might have a higher level of executive control skill, which may accurately help performing responses, even doing some inhibitions. It may be one of the reasons why the problematic online gamers had a higher impulsiveness, but also had a higher self-regulation level at the same time.

To conclude, our study rejects Zhou's study and also some previous studies that the problematic online gamers demonstrated a good executive controlling skills in differentiating stimuli. This study also breaks through the steady concept of the gamers. Say, the gamer will develop to the Internet Gaming Disorder may due to the a low level of self-regulation. For further studies, we recommend to exploring the reasons or mechanisms that why the problematic online gamers have good controlling and self-regulation skills. Other than that, exploration of the protective and risk factors among the problematic online gamers will also a good idea to increase the understanding among these targets.

Our study has both conceptual and clinical contribution. From a conceptual point of view, our study help increases the understanding of certain behavior pattern among the problematic online gamers and allow for investigation of the risk factors in them in further studies. Moreover, in order to examine the problematic online gamers in a new perspective, the concept of self-regulation was adopted. In some previous studies, some may claim that the online gamers might only have little self-regulation and might easily develop into Internet Gaming Disorder. However, our study found that the problematic online gamers had higher self-regulation than the non-gamers, even the game-related pictures were shown. In light of that, our study may break through the old concept and offer a new idea for investigating game addiction in further studies. Clinically, the findings from our study, could increase public's awareness of the online gaming addiction issue; and guide the screening and identification of the problematic online gamers. Although the problematic gamers have yet to develop into a disorder, it is beneficial to establish certain strategies in order to prevent the problematic gamers from progressing into addiction.

The last but not least, I wish to make good use of this opportunity to give my gratefulness to all respondents, spending time for completing this meaningful experiment.

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