



## Exploring the pull and push underlying problem video game use: A Self-Determination Theory approach



Devin J. Mills<sup>a,\*</sup>, Marina Milyavskaya<sup>b</sup>, Jessica Mettler<sup>c</sup>, Nancy L. Heath<sup>c</sup>

<sup>a</sup> Rutgers University, USA

<sup>b</sup> Carleton University, Canada

<sup>c</sup> McGill University, Canada

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### ABSTRACT

Research has revealed that *the push* to engage in video games is in part the perception that they satisfy three basic psychological needs (competence, autonomy, relatedness). However, *the pull* toward a problematic style of video game engagement based on Internet Gaming Disorder symptomatology has been found to be explained in part by the daily frustration of these same needs. Currently, these two areas of gaming research have been conducted within separate studies. Therefore, the objective of the present study was to bridge these two theoretically compatible areas of research in exploring the interaction between gaming need satisfaction and daily need frustration in explaining problem video game use and gaming frequency. An online sample of 922 adults (59.1% males;  $M_{age} = 23.53$  years;  $SD = 6.84$ ) were recruited. Results revealed both gaming need satisfaction and daily need frustration positively contributed to gaming frequency and problem video game use accounting for 19.7% and 23.5% of their respective variances. Furthermore, gaming frequency and problem video game use were highest when both gaming need satisfaction and daily need frustration were high. The implications of these results are discussed within the context of current research and strengths-based clinical approaches.

### 1. Introduction

Video games are popular recreational activities that are enjoyed by millions every year (Entertainment Software Association, 2018). Although the vast majority of video game users demonstrate a healthy style of engagement, others exhibit symptoms similar to substance abuse indicative of what can best be described as a gaming disorder (Griffiths, Kuss, Lopez-Fernandez, & Pontes, 2017). Research has often explored factors that facilitate the appeal of video games and those that promote the risk of engaging problematically in video games within separate studies. This may be largely due to the absence of a theoretical framework that offers an explanation of the mechanisms that facilitate both the appeal (or *Pull*) of video games as well as the risk (or *Push*) of developing a problematic style of video game engagement. Applications of Self-Determination Theory (SDT; Ryan & Deci, 2000, 2017) suggest satisfying basic psychological needs during video game engagement explains the appeal of video games (Peng, Lin, Pfeiffer, & Winn, 2012; Ryan, Rigby, & Przybylski, 2006). On the other hand, the extent to which these same needs are frustrated or thwarted in daily life has been found to explain an increasingly problematic style of video game engagement (Mills, Milyavskaya, Heath, & Derevensky, 2018; Mills,

Milyavskaya, Mettler, Heath, & Derevensky, 2018). The present study bridges these two areas of research within SDT in exploring whether an interaction between gaming need satisfaction and daily need frustration explains both gaming frequency as well as problem video game use beyond what these two constructs explain separately.

#### 1.1. Internet Gaming Disorder

Internet Gaming Disorder (IGD) is a persistent pattern of gaming that directly or indirectly contributes to maladaptive functioning (King, Haagsma, Delfabbro, Gradisar, & Griffiths, 2013). Problem video game use is a secondary term used to describe a pattern of gaming engagement that ranges from minimal to high risk for IGD. Although past research suggests males tend to report greater problem video game use than females (Colder Carras et al., 2017; Lemmens, Valkenburg, & Gentile, 2015), more recent data has failed to provide sufficient evidence of a gender difference for problem video game use (Przybylski, Weinstein, & Murayama, 2017). Not surprisingly, those reporting greater time gaming also report higher problem video game use (Jeromin, Rief, & Barke, 2016; Sim, Gentile, Bricolo, Serpelloni, & Gulamoydeen, 2012), though this is likely due to high enthusiasm

\* Corresponding author.

E-mail address: [devin.mills@rutgers.edu](mailto:devin.mills@rutgers.edu) (D.J. Mills).

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toward video games rather than evidence of a disorder itself (Charlton, 2002; Charlton & Danforth, 2007; Griffiths, 2009). Finally, problem video game use has been found to be associated with greater loneliness, depression, aggression, and anxiety within adult populations (e.g., Andreassen et al., 2016; Barger & Hormes, 2017; Lemmens et al., 2015; Mentzoni et al., 2011).

Given the numerous studies demonstrating similar associations between problem video game use and indicators of ill-being, the World Health Organization (WHO) has recently announced they are officially including IGD in the upcoming revision of the International Classification of Diseases (WHO, 2018). At this time, the American Psychiatric Association (APA) continues to consider a 2013 proposal of IGD as a condition for further study in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; APA, 2013). The DSM-5 proposal includes a set of nine symptoms. Endorsing five or more symptoms is a suggested threshold for IGD diagnosis. However, there remains a great deal of debate by scholars on the merits of IGD as a diagnostic category as well as its corresponding symptoms (Aarseth et al., 2016; Griffiths et al., 2016; Kardefelt-Winther, 2015; Przybylski et al., 2017). The larger issue of whether IGD is a diagnostic category will not be addressed in the present study. Rather, the focus will be on whether greater problem video game use (PVGU) can be explained by key assumptions embedded within Self-Determination Theory; a theoretical framework that is guided by social psychological principles.

### 1.2. Self-Determination Theory

Self-Determination Theory (SDT) proposes that the satisfaction of three basic psychological needs during activity engagement will result in greater intrinsic motivation and overall enjoyment in the activity (Ryan & Deci, 2000, 2017). The three basic psychological needs include competence (possessing adequate knowledge or skill), relatedness (feeling a sense of belonging), and autonomy (perceiving ownership of one's decisions). Studies have shown that video games have the potential to satisfy these three needs, which in turn contributes to users spending more time gaming and reporting greater enjoyment in these video games (Johnson, Gardner, & Sweetser, 2016; Peng et al., 2012; Ryan et al., 2006; Tamborini, Bowman, Eden, Grizzard, & Organ, 2010). Moreover, the principles of SDT were used in designing the highly praised *Middle-earth: Shadow of Mordor* video game to maximize the satisfaction of competence, relatedness, and autonomy needs through gameplay (Graft, 2015). Thus, like many other activities, need satisfaction plays an essential role in facilitating the appeal of video games. However, it is likely that the extent to which basic needs are perceived to be satisfied through video games only explains one side of PVGU, the pull into playing video games, but not the push to play video games.

Recent advances in SDT suggest experiencing daily obstructions to need satisfaction is a better predictor of problematic behaviors such as PVGU. Vansteenkiste and Ryan (2013) refer to daily obstructions to need satisfaction as *need frustration*. This includes perceiving external pressures that make one feel untalented or unknowledgeable (competence frustration), feeling forced to do something or behave in certain way (autonomy frustration), or experiencing rejection from peers or colleagues (relatedness frustration). In theory, the emphasis on external pressures distinguishes need frustration from low need satisfaction in that the environment must, in some way, obstruct experiences of need satisfaction (Costa, Ntoumanis, & Bartholomew, 2015). For instance, someone engaging in an activity he or she is not skilled in may experience low satisfaction of competence needs during engagement, but would not necessarily experience a frustration of these same needs. As a result, low need satisfaction might occur without feeling obstructed by the environment, thus implying a lack of need frustration. Nonetheless, an expected negative association between need frustration and need satisfaction does exist.

Further, several recent studies have shown that need frustration and

need satisfaction are largely associated with contrasting outcomes. Need satisfaction is positively associated with greater adaptive outcomes such as positive affect and subjective vitality, whereas need frustration is positively associated with maladaptive outcomes such as depressive symptoms and negative affect (Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011; Chen et al., 2015; Gunnell, Crocker, Wilson, Mack, & Zumbo, 2013). Vansteenkiste and Ryan (2013) speculate that the negative consequences emerging from the continued experience of need frustration largely stems from endorsing secondary coping mechanisms to deal with the decline in overall well-being brought about by need frustration.

Pertinent to the present investigation of PVGU is exhibiting an overreliance upon an activity to satisfy basic needs, which is included as one of Vansteenkiste and Ryan's (2013) secondary coping mechanisms to continued experience of need frustration. Therefore, PVGU could be argued to be a manifestation of individuals' overreliance toward video games to satisfy basic psychological needs that have been thwarted within one's immediate environment. Recent findings by Mills, Milyavskaya, Heath, et al. (2018) revealed a positive correlation between daily need frustration and problem video game use. However, the perception that gaming engagement satisfies basic needs is an essential component underlying the assumption that PVGU is an overreliance toward gaming for need satisfaction, which has not yet been empirically investigated.

### 1.3. Present study

The present study compares the contributions of gaming need satisfaction and daily need frustration to both time spent gaming and PVGU. As shown in Fig. 1, it is hypothesized that gaming need satisfaction would positively predict both time spent gaming and PVGU, whereas daily need frustration would only positively predict PVGU. Additionally, it is hypothesized that daily need frustration will be more strongly associated with PVGU than gaming need satisfaction. Finally, it is hypothesized that an interaction between gaming need satisfaction and daily need frustration will contribute to both gaming frequency and PVGU such that the greatest frequency gaming and the most severe PVGU would be reported by those indicating high levels of both gaming need satisfaction and daily need frustration.

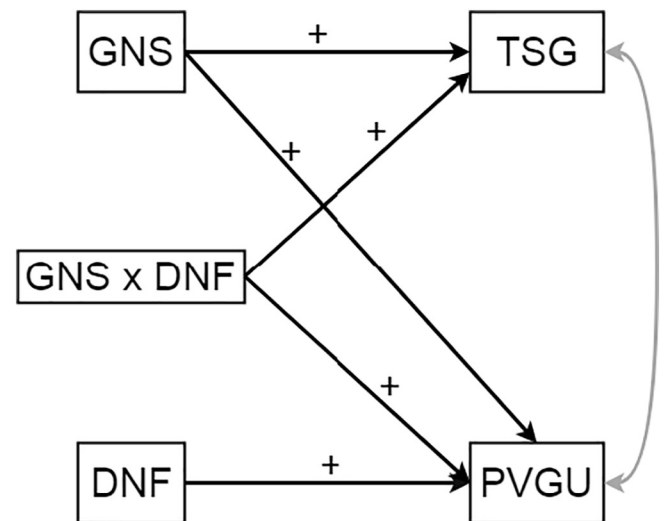


Fig. 1. Hypothesized model depicting the differential contribution of gaming need satisfaction (GNS) and daily need frustration (DNF) onto time spent gaming (TSG) and Internet Problematic Video Game Use (PVGU), and effect of the interaction between GNS and DNF onto TSG and PVGU.

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