



Full length article

The impact of explicit mental health messages in video games on players' motivation and affect

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ARTICLE INFO

Article history:

Received 21 August 2017

Received in revised form

2 December 2017

Accepted 16 January 2018

Available online 18 January 2018

Keywords:

Emotion

Serious video games

Mental health

Intrinsic motivation

Messaging

ABSTRACT

In order to enhance young people's motivation to participate in depression and anxiety prevention programs, video games are being developed. However, the conditions under which these games are motivating and by extension more effective are unclear. Therefore, we examine if youth's affective experience changes when they are aware of the mental health aim of a game. Based on reactance theory and self-determination theory, explicit intervention aims may be viewed as controlling, consequently diminishing the autonomy and intrinsic motivation experienced during gameplay. Alternatively, for participants with elevated depressive symptoms, personal relevance may increase motivation to play a depression intervention game that explicitly claims to have mental health objectives. In this study, undergraduate students ($n = 146$) played a cooperative commercial video game in pairs following a mental health or an entertainment-focused introduction message. Results showed that intrinsic motivation was high and similar across conditions, but autonomy was lower in the mental health condition. Furthermore, players higher in depressive symptoms experienced more relatedness, a stronger improvement in mood but also, in the mental health condition, less competence. These results indicate that some caution is necessary in explicitly stating mental health aims of video games, although it is not necessarily detrimental to motivation.

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1. Introduction

Internalizing mental health problems (e.g., depression, anxiety) affect alarming numbers of youth (Merikangas et al., 2010). Youth experiencing both clinical and subclinical internalizing symptoms are at risk for academic delays, social problems, suicide attempts and are prone to experience recurring psychopathology in their adult life (Avenevoli et al., 2008). Thus, effective and engaging prevention approaches for youth at risk for an internalizing disorder are critical.

Unfortunately, traditional prevention programs are often didactic group programs that have little appeal for youth and access to these programs is limited. Given that intrinsic motivation for therapeutic interventions improves adherence and positive outcomes (Zuroff et al., 2007), finding formats that enhance this

motivation is critical. In an attempt to address both motivation for and accessibility of prevention programs, several computerized prevention programs have recently been developed for youth (Calear and Christensen, 2010; Richardson et al., 2010). However, most computerized programs are still mere digitalized versions of manualized protocols, which appear not to enhance motivation as much as originally hoped (Poppelaars et al., 2014). Video games may be particularly promising to address this gap (Granic et al., 2014).

Video games uniquely engage and intrinsically motivate adolescents (Lenhart et al., 2008). Additionally, video games evoke strong emotions, often require sophisticated social skills, and allow for repeated practice of skills relevant to prevention goals (Granic et al., 2014). In parallel to the efforts to design content that is promising for applied mental health games (Poppelaars et al., 2016; Scholten et al., 2016; Schoneveld et al., 2016; Weerdmeester et al., 2016), it seems equally important to investigate the context and qualities that enhance motivation and affective engagement.

One aspect of intervention video games that may influence motivation and affective engagement is whether or not players are

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aware of the game's "applied" purpose. While traditional prevention programs are unlikely to avoid explicit mental health messages, video games have the potential to train relevant skills without making players aware of a game's aim (i.e., using a stealth approach). By studying the effects of being aware of a game's aim, researchers and practitioners will have a better understanding of how to introduce intervention games to the target population once engaging and effective prevention games become available. Therefore, the current study examined the effect of an explicit mental health introduction message compared to an entertainment-focused introduction message on motivation and affective experience in a commercial video game.

In the current video game industry, video game players almost exclusively encounter games that are promoted for their entertainment value (e.g., boasting industry awards that have been won). Prevention games may choose to use a similar approach in reaching players as entertainment games, however prevention games may also be presented with an explicit mental health aim. Video games with an explicit aim to improve mental health may evoke both positive and negative reactions. On the positive end, explicit mental health aims for intervention video games could harness placebo effects or enhance expectations to potentially boost effects. That is, the mere belief that one is receiving an effective treatment has reliably been shown to have positive effects on psychological symptoms and physical changes (Enck et al., 2013; Stewart-Williams and Podd, 2004). Harnessing placebo effects may be a viable way to improve the effectiveness of psychological interventions (Andrews, 2001).

On the negative end, "Serious" or applied games in general can be experienced as *controlling* by players, and thus necessarily less fun. Two theories that may help us understand the effects of introducing a game with a mental health aim are reactance theory and self-determination theory, which both suggest that messages can be considered controlling when a social norm and/or a goal is implied (Legault et al., 2011; Moller et al., 2006). An explicit mental health aim in video games may communicate to players that certain behaviors and cognitions are preferred, and freedom of choice is limited. Reactance theory proposes that when persuasive health messages are communicated, in this case "you should play this game as it will improve your mental health," people will perceive their freedom to be threatened (Brehm, 1966; Dillard and Shen, 2005). In turn, reactance manifested as negative affect and cognitions and the motivation to restore freedom (Brehm, 1966; Dillard and Shen, 2005) is a well-known response to health messages (e.g., regarding alcohol consumption; Richards and Banas, 2014). The motivation to restore freedom leads to behavior opposite to the behavior promoted in the health message (Richards and Banas, 2014), which may result in youth refusing to play an explicit mental health game. Alternatively, a video game, being promoted as simply fun, likely appeals to a person's intrinsic values making it less likely to provoke reactance.

Besides looking at the effect of the persuasive message of mental health, motivation for prevention games can also be studied within the framework of self-determination theory, as commercial video games have been repeatedly studied from this perspective (Peng et al., 2012; Przybylski et al., 2010; Ryan et al., 2006; Tamborini et al., 2010; Tamborini et al., 2011). According to self-determination theory, intrinsic motivation insures the activity is performed for its enjoyment rather than for external outcomes and is associated with a multitude of positive outcomes (Ryan and Deci, 2000). Intrinsic motivation flourishes in contexts where the three psychological needs, competence, autonomy, and relatedness, are satisfied (Ryan et al., 2006). Video games specifically have been identified as an activity that is almost exclusively motivated intrinsically (Ryan et al., 2006). However, health-based instructions

may be perceived as controlling and therefore may limit autonomy and intrinsic motivation for playing video games as this effect was shown in other activities such as sports and music that are usually intrinsically motivated (Ryan and Deci, 2000). Although, no studies have examined whether controlling messages diminish motivation in applied games, previous research showed that in-game competence (e.g., completing game challenges), autonomy (e.g., experiencing choice freedom), and relatedness (e.g., bonding with other players) predict game enjoyment in commercial games (Ryan and Deci, 2000; Ryan et al., 2006; Tamborini et al., 2010; Tamborini et al., 2011). Thus, if prevention games aim to engage youth these psychological needs are likely also important for prevention games to fulfill. Therefore, it is vital to study whether a mental health message decreases intrinsic motivation and the satisfaction of the psychological needs compared to an entertainment message.

On the other hand, explicit messages around the mental health aims may also have motivational advantages. When players are in need of an intervention, this may promote engagement in a game where the health aim is explicit (Buday, 2015). There is a consensus that personal relevance is crucial for motivation (e.g., people on diets pay closer attention to information about weight loss; Kruglanski et al., 2006). For individuals with goals to improve their mental health (e.g., those with elevated depressive symptoms; Moore et al., 2013), an explicit message regarding the potential benefits of a game may thus increase intrinsic motivation. Therefore, besides studying the general effects of mental health and entertainment-focused introduction messages, the current study explored the role of mental health symptoms on the effect of explicit mental health messages on motivation and affective engagement.

1.1. Design and hypotheses

The aim of the current study was to examine how the framing of a video game as either a regular entertainment-focused game or a mental health game affects motivation and affective experience. Young adult participants played a commercial cooperative video game in pairs. As current intervention video games cannot credibly pass for a regular entertainment-focused game due to limited appeal and integrated mental health information (e.g., SPARX; Poppelaars et al., 2016), we opted for a commercial video game that incorporates game mechanics which can be perceived as beneficial for mental health (e.g., social cooperation). Before playing, participants were randomly assigned to either watch a trailer that emphasized (a) the *entertainment* value of the game, without mentioning mental health or (b) the *mental health* benefits of the game. Based on reactance theory and self-determination theory we expected participants to experience the mental health message as controlling and thus to have a less positive game play experience. In line with these theories we decided to focus on dependent variables that reflect the affective response (mood, arousal, positive and negative affect) to potentially controlling messages, as well as on the central variable of intrinsic motivation, and the underpinning variables according to self-determination theory of competence, autonomy, and relatedness in studying the effects of messaging. We expected that participants in the *entertainment* condition to experience more positive mood, higher arousal, more positive affect, and less negative affect after gameplay compared to the *mental health* group. Moreover, we expected participants to experience less intrinsic motivation, competence, autonomy, and relatedness in the mental health condition compared to the entertainment condition.

In addition, we explored whether depressive symptoms, which were specifically targeted in the mental health trailer, influenced affective experience and motivation and/or moderated the effect of

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