Autonomous and Controlled Motivation in a Randomized Controlled Trial Comparing School-based and Computerized Depression Prevention Programs.

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Abstract. The depression prevention video game SPARX was shown to be equally as effective as the classroom-based depression prevention program ‘Op Volle Kracht’ (OVK) in reducing depressive symptoms among adolescents girls. Because video games are known for their engaging qualities, this study examined possible motivational benefits of SPARX compared to OVK. No differences in autonomous and controlled motivation were found between conditions at any time point. However, OVK was negatively associated with autonomous motivation during the program, while SPARX and the OVK and SPARX combined were associated negatively with controlled motivation during the programs. Additionally, autonomous motivation and controlled motivation at the start of the interventions and controlled motivation half-way through the interventions was found to positively influence long-term depressive symptoms. Results indicate that depression prevention programs including video games can beneficially influence motivation. Further research is needed to delineate the effects of video game prevention programs on motivation.

Keywords: adolescents · depression prevention · video games

1 Introduction

Over the years, video games have become increasingly popular among adolescents, with almost all adolescents playing video games regularly [1,2]. Interestingly, video games have been shown to be capable of teaching adolescents a range of skills [e.g. 3] while simultaneously engaging youth in an activity they enjoy and seek out themselves. Moreover, it has been found that video games can increase positive mood and
that players may regulate their mood through gameplay [4,5]. Thus, it is possible that not only cognitive skills but also emotional skills can be learned through video games [6].

One area of adolescent well-being that can potentially be addressed through video games is depression. Depression is one of the leading causes of disease burden [7] and even subclinical depressive symptoms cause significant impairment in school performance and social interactions [8]. Additionally, subclinical depressive symptoms are an important risk factor for major depressive disorder [9]. Prevalence of subclinical depression is estimated between 20% and 50% [10,11].

Most evidence-based depression prevention programs utilize Cognitive Behavioral Therapy (CBT) principles and are provided in didactic group settings [12]. Although these programs are effective on average [12,13], they suffer from a number of drawbacks, including high costs, potential stigmatization and limited accessibility for some youth who need it the most.

To address these limitations, more and more computerized prevention and intervention programs in the area of depression are being developed [14]. These programs aim to provide low cost interventions that are attractive to adolescents [15]. One promising example is the depression intervention video game SPARX [15,16]. SPARX was developed to decrease depressive symptoms in adolescents and may prevent depression by encouraging adolescents to actively practice CBT principals in an engaging format [15]. Thus, SPARX utilizes the same principles as many traditional depression prevention programs although its format is radically different.

Importantly, the first studies on SPARX have shown promising effects. Merry and colleagues [15] found SPARX to be equally as effective in reducing depressive symptoms as active treatment for adolescents with depressive symptoms. Additionally, Fleming, Dixon, Frampton and Merry [16] showed that SPARX decreased depressive symptoms compared to a waitlist-control condition in adolescents with probable depression. Finally, SPARX was shown to decrease depressive symptoms in adolescent girls with subclinical depressive symptoms equal to a traditional classroom-based program Op Volle Kracht (OVK) and an active monitoring control [17]. OVK is the Dutch adaptation of the most researched traditional depression prevention program, the Penn Resiliency Program, and has been found to be effective in a previous selective prevention study [18].

Besides studying whether video games such as SPARX can be effective in reducing depressive symptoms, it is important to research possible motivational benefits of depression prevention video games compared to traditional programs. As stated previously, video games are an immersive activity that the vast majority of adolescents engage in voluntarily; in other words, they are autonomously motivated to play. This is not surprising as video games are designed to attract players and encourage players to continue playing. Many basic game mechanics may be identified that are geared towards sustaining autonomous motivation during game play (e.g. points and levels). Although SPARX was mainly developed to teach CBT principles, the game was also developed, to improve engagement in therapy and stimulate players’ autonomous motivation to play through in-game goals and rewards.