


Comment on: Problematic online gaming and the COVID-19 pandemic – The role of exergames

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COMMENTARY



ABSTRACT

Although significant increases in gaming may not always be beneficial, exergames (a new generation of video games also known as exergaming or active video games) appear as an alternative, feasible, attractive, and safe way to perform physical exercise for most clinical and nonclinical populations. Therefore, it is important to recognize that exergames can be considered a useful tool for coping with the COVID-19 outbreak and the recommended social distancing period.

KEYWORDS

COVID-19, coronavirus, pandemic, active video game, exergaming

We read with great interest the recent letter to the editor “*Problematic online gaming and the COVID-19 pandemic*” (King et al., 2020) published in the *Journal of Behavioral Addictions*. The authors expressed their concern about the increase in online gaming due to stay-at-home mandates and quarantines related to the COVID-19 outbreak. Although significant increases in gaming may not always be beneficial (King, Koster, & Billieux, 2019), we would like to call attention to a specific type of gaming – exergames. Exergames are an interesting way to play a video game while exercising that is both feasible and attractive for most clinical and nonclinical populations (Fung et al., 2010). Therefore, we offer a critical appraisal of the potential usage of exergames as a coping strategy for social isolation in a home-based environment during the COVID-19 outbreak and the recommended social distancing period.

Exergames, a new generation of video games also known as exergaming or active video games, are linked to the idea of integrating ample body movements (e.g., trunk, upper and/or lower limbs) (Staiano & Calvert, 2011; Wiemeyer et al., 2015) with attractive digital games (Rizzo, Lange, Suma, & Bolas, 2011; Wiemeyer et al., 2015). Visual and auditory stimuli are combined with different types of equipment (e.g., balance boards, stepping mats, dance mats, dumbbells, cameras, and other types of sensors and inputs) that allow users to move to play (Baracho, Gripp, & Lima, 2012; Lieberman et al., 2011). Exergames, like traditional video games, can also be played in multiplayer mode, which can contribute to increasing social interaction in a home environment (O’Donovan et al., 2012; Peng & Crouse, 2013). Currently, there are several types of exergames, such as those which simulate traditional aerobic exercises (e.g., walking, running, and cycling) (Graves et al., 2010; Wu, Wu, & Chu, 2015), sports modalities (e.g., basketball, bowling, tennis, table tennis, baseball, swimming,

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ping-pong, volleyball, beach volleyball, and boxing), dancing (Neves et al., 2015; Unnithan, Houser, & Fernhall, 2006; Viana et al., 2017), and weight-bearing exercises (Moreira, Rodacki, Costa, Pitta, & Bento, 2020; Viana et al., 2018; Viana, Gentil, Andrade, Vancini, & de Lira, 2019). Consoles that enable this experience are Sony's PlayStation Move[®], Microsoft's Xbox Kinect[®] and Nintendo's Wii[®] (Viana et al., 2020; Wiemeyer et al., 2015).

Compared to online gaming, exergames appear more advantageous because they induce acute and chronic beneficial physiological and psychological changes that are not typically found following traditional forms of sedentary video gaming. Most studies involving exergames have investigated their effects on behavioral, cognitive, psychological and physical outcomes (Benzing & Schmidt, 2018; Viana et al., 2020). There is evidence that exergame interventions are able to improve physical activity levels (Fogel, Miltenberger, Graves, & Koehler, 2010), the performance of daily activities (Neumann, Meidert, Barberà-Guillem, Poveda-Puente, & Becker, 2018; Zangirolami-Raimundo et al., 2019), muscle strength in older adults (Htut, Hiengkaew, Jalayondeja, & Vongsirinavarat, 2018), heart rate (Graves et al., 2010; Neves et al., 2015; Rodrigues et al., 2015; Viana et al., 2017, 2018), oxygen consumption (Graves et al., 2010; Rodrigues et al., 2015; Viana et al., 2018), and energy expenditure in various populations (Graves et al., 2010; Rodrigues et al., 2015; Viana et al., 2018; Wu et al., 2015), improvements in body composition in children (Staiano, Abraham, & Calvert, 2013), postural balance (Jorgensen, Laessoe, Hendriksen, Nielsen, & Aagaard, 2013), cognitive function in older adults (Maillot, Perrot, & Hartley, 2012), and anxiety disorders in different populations (Viana & de Lira, 2020; Viana et al., 2017). Therefore, although access to exergames may be more limited than access to traditional video games, the benefits of this type of video games must be taken into account during the COVID-19 outbreak due to its strong motivational ability. Exergames are great in increasing motivation for exercise (Peng & Crouse, 2013), and physical exercise plays an important role in coping with the detrimental effects on health imposed by social isolation and lockdown, such as a decrease in physical activity levels and an increase in sedentary behavior.

In summary, while we applaud the manuscript by King, Delfabbro, Billieux, and Potenza (2020), it is also important to recognize that exergames can be considered a useful tool for coping with the negative consequences imposed by the COVID-19 outbreak and self-isolation period.

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