ADDICTION
SSA SOCIETY FOR THE STUDY OF ADDICTION
COMMENTARY

Commentary on Baggio *et al.* (2016): Internet/gaming addiction is more than heavy use over time

Heavy use over time is a necessary condition of addictive disorders; however, in itself it is not a sufficient measure to assess addiction, neither in the case of internet use in general nor internet gaming disorder in particular.

In a recent study, Baggio *et al.* [1] pointed out that self-report instruments suffer from a great many shortcomings, and may therefore be unreliable in the assessment of addictive disorders. As an alternative form of assessment, they examined whether heavy use of internet/gaming over time (as a more objective measure) was an appropriate way to estimate addiction. Results suggested that heavy use over time was less suitable for the assessment of addictive-like behaviours than traditional addiction scales, as it had weaker associations with comorbid factors and only a moderate correlation with the addiction scales, meaning only a slight overlap between the two concepts.

We fully agree with the importance of the problem raised in the study. Unfortunately, self-report screening tests are far less reliable than usually considered. In addition to the issues listed by Baggio *et al.*, a recent study pointed out that in the case of low-prevalence disorders (e.g. addictions), screening instruments with average or even high sensitivity and specificity have surprisingly low positive predictive values, meaning that a very large number of those who screen positive do not, in fact, have the disorder [2], leading to possible overpathologizing of the behaviours measured [3]. Therefore, finding more accurate assessment methods for large-scale surveys would be beneficial.

Examining the link between heavy use and addiction, the first scientific papers concerning internet addiction and the addictive use of video games described young males who used the internet/games excessively, to a degree where their performance and social relationships suffered [4,5]. Accordingly, heavy use appeared to be responsible for all their problems. Shortly afterwards, however, internet use and gaming had become mainstream activities, indispensable for work, study and entertainment, and prolonged time spent on these activities became universal. Consequently, there are key differences between the concept of heavy use in the case of substance use and the case of internet use. While the majority of addictive substances, when used in excess, have both acute and chronic harmful effects to some degree, internet and games used at a moderate level are harmless; furthermore, they are now essential parts of our lives. A person using the internet for work purposes, personal communication and entertainment may appear to use it heavily, but in reality all these activities are an integral part of their life and usually do not decrease (or even increase) general wellbeing.

None the less, gaming may be a more suitable behaviour to investigate this question, because it is (i) much more specific, and more importantly (ii) pursued solely for entertainment. Thus, if practised in excess, it is more probable that gaming interferes with everyday duties and routines.

The gaming literature has made several interesting contributions to this question, although these were not mentioned in the paper by Baggio *et al.* [1]. As early as 2002, for instance, Charlton [6] found that some of the addiction criteria (i.e. tolerance, euphoria and cognitive salience) proposed by Brown [7,8] were somewhat indicative of high engagement rather than addiction. In a subsequent analysis, Charlton & Danforth [9,10] distinguished addicted gamers clearly from highly engaged gamers. Both groups played for a substantial amount of time (even though the addiction group played significantly more); however, only addiction was associated with negativity on personality characteristics. Similarly, Brunborg *et al.* [11] found that only gaming addicts had a greater risk of health complaints; highly engaged gamers did not, despite the fact that both groups played equally frequently. Skoric *et al.* [12] found that neither time spent playing games nor video game engagement were associated with low scholastic performance, only addiction tendencies. Moreover, a case study published by Griffiths [13] focused entirely upon the importance of context in distinguishing excessive gaming from addictive gaming. He presented the cases of two gamers who both played for up to 14 hours per day. However, based on the differences in their motives and the consequences of their activity, he argued that one of them appeared to be addicted while the other was merely engaged. These findings were supported further by the small-to-moderate correlations between gaming time and addiction reported in several studies [14–17].

Overall, there is increasing evidence that the amount of time spent on gaming is not a sufficient indicator of addictive behaviour. Addiction can only be assessed properly if motives, consequences and contextual characteristics of the behaviour are also part of the assessment.

Declaration of interests

None.

Acknowledgements

The present work was supported by the Hungarian Scientific Research Fund (grant numbers: K83884 and 111938). Z.D. acknowledges financial support of the János Bolyai Research Fellowship awarded by the Hungarian Academy of Science.

Keywords Assessment, heavy use over time, internet addiction, video gaming

Z. DEMETROVICS & O. KIRÁLY

Institute of Psychology, Eötvös Loránd University, Budapest, Hungary

E-mail: demetrovics@t-online.hu

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