The "ABCDE" of video gaming control: Arguments, basic research, conceptual models, documented lessons, and evaluation

Commentary on: Policy responses to problematic video game use: A systematic review of current measures and future possibilities (Király et al., 2018)

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This commentary responds to the review conducted by Király et al. (2018). The review enlightens and is useful in view of the limited studies on problematic use of video games and related control policies. It is argued that when considering regulation policies on video games, reference should be made to the arguments involved (A), basic research (B), conceptual models on problem video game use (C), documented lessons learning the broad field of addiction (D), and the need for rigorous evaluation (E). Besides "supply" reduction, it is vital to look at "demand" reduction in terms of how inner strengths may help to reduce the problematic use of video games.

Keywords: video game use, prevention, regulation, young people

The paper by Király et al. (2018) is an important addition to the literature for two reasons. First, most studies on addiction focus on gambling, substance abuse, and Internet addiction with few research studies on problematic video game use. Second, except the review by King et al. (2017), no known review studies have been published to understand the possible interventions to regulate video game use and reduce their negative consequences. On the whole, this is a pioneer piece of work, which triggers meaningful discussion among different stakeholders.

The review by Király et al. (2018) showed that three broad measures could be used to regulate problematic video game use. The first is to limit availability, such as shutdown, selective shutdown, fatigue system, parental controls (content filters, time limits, and monitoring), limiting the gaming time in Internet cafés, and raising the price of games. The second category of measures attempts to reduce the risks and harm, such as the use of warning messages and making the games less addictive. Finally, preventive and treatment programs and services for problematic gamers were reviewed.

In this commentary, it is proposed that when we consider controls of video games, there is a need to make reference to five issues, including: (A) arguments for and against the controls, (B) basic research on problematic video game use, (C) conceptual models, (D) documented lessons learned in the drug addiction field, and (E) evaluation of the intervention attempts to reduce addictive video gaming. In short, these are the "ABCDE" of regulating the use of video games.

The first issue to be considered is arguments (A) for controlling the use of video games. The central argument normally put forward is that because some video games lead to abuse in some children and adolescents, there is a need to control. This argument is valid in view of the negative consequences of problematic video game use in children and adolescents. Although the number of problematic video game users is small, the personal, family, and social costs can be enormous (Kuss & Griffiths, 2012), which may justify the control. In the broadest sense, as video games can create addiction in children and adolescents, there is a need to regulate them. In a narrow sense, video games with elements of sex, violence, and/or indecent content should be regulated through mechanisms, such as Entertainment Software Rating Board and Pan European Game Information. Basically, these regulatory systems are consistent with the existing practice for television programs, movies, and printed materials where children aged under 18 years cannot get access to such materials.

However, there are several counter-arguments against the regulation on the use of video games. The first argument is that video games do not lead to addiction and problem behavior such as violence (Entertainment Software Association, 2016, 2018). Second, whether problematic video game use can be regarded as a form of mental disorder is

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debatable (Aarseth et al., 2017; Király & Demetrovics, 2017; van Rooij et al., 2018; Zastrow, 2017). Third, as moderate gaming may lead to positive outcomes such as stress reduction (Männikkö, Ruotsalainen, Miettunen, Pontes, & Kääriäinen, 2017), an excessive control of all forms of video games is debatable. Fourth, as adolescent risk behavior drops when adolescents mature (Shek & Yu, 2016) and the addictive behaviors may be quite transient (Thege, Woodin, Hodgins, & Williams, 2015), regulation may simply be a moral panic response. Finally, it can be argued that overcontrol of video games would limit the development of the game industry, which created an estimated global revenue of 108.9 billion in 2017 (Newzoo, 2017). Similarly, Marchand and Hennig-Thurau (2013) commented that the global revenue for video games was higher than the global revenue for music and consumer book sales. Another point that should be considered is that the governments in many countries are in fact encouraging and facilitating the development of video games (Hemels & Goto, 2017; Storz, Riboldazzi, & John, 2015).

The second issue is whether quality basic research (B) on video gaming exists, so that policy-makers can make well-informed decisions on the regulation of video games. Feng, Ramo, Chan, and Bourgeois (2017) pointed out that research studies on Internet addiction outnumbered research studies on video game addiction. In addition, there are several unanswered questions on the nature and basic processes in problematic video game use. The first group of questions is concerned with the prevalence of problematic video gaming and the existence of validated measures of problematic video gaming. In a recent review of Internet gaming disorder, Feng et al. (2017) showed that problematic video gaming showed low persistence after 1 year. Furthermore, despite the rapid advance in technology and widespread use of the Internet in the 15-year review period, the prevalence of Internet gaming disorder did not change much. The authors suggested that researchers should use consistent methodology, comparable populations, clear data, and longitudinal designs and consider the cultural and social environment leading to fluctuation in future prevalence studies.

The second group of questions is related to the possible causes of problematic video gaming, such as whether personal factors (e.g., comorbidity), family factors, and social policies lead to problematic video gaming. From an intervention point of view, we must know the causes of problematic video gaming before any meaningful policies can be devised. For example, if family factors strongly account for problematic video gaming, relevant family policies and services should be devised.

Finally, there are questions surrounding the consequences of "healthy" and "unhealthy" video gaming, such as the short-term, medium-term, and long-term consequences of using video games, which determine the "gravity" of the regulation. Obviously, we have to conduct basic research to provide answers to these questions before we can formulate any evidence-based strategies to deal with the negative impacts of problematic video gaming.

The third issue surrounds the conceptual models (C) on the causes of problematic video game use. Theoretically, there are many micro- and macro-approaches to understanding addictions such as substance abuse and pathological gambling. At present, the most widely accepted model on addiction is the social–ecological model (Kliewer & Murrelle, 2007) that outlines the influence of risk factors (which increase the probability of addiction) and protective factors (which decrease the probability of addiction). Hence, a reduction in the problematic use of video games should minimize the effects of risk factors (such as weak resilience) but maximize the effects of protective factors (such as social support).

From another angle, some researchers (European Monitoring Centre for Drugs and Drug Addiction, 2017; Pentz, Bonnie, & Shopland, 1996; Wodak, 2011) argued that an increase in supply and/or demand would lead to addictive behavior, such as problematic video game use. Hence, it would be helpful to examine the factors leading to an increase in supply and/or demand. In the review conducted by Király et al. (2018), most of the measures concentrate on "supply" reduction, with little focus on how excessive demands for video game use arising from individual and familial problems may be prevented. In the substance abuse literature, it is documented that certain characteristics of young people, such as poor problem-solving skills, low emotional management skills, weak interpersonal competence, existential vacuum, and low family support, contribute to substance abuse (Whitesell, Bachand, Peel, & Brown, 2013). Obviously, these findings constitute useful pointers to design measures to reduce the factors that contribute to high demand and thus indirectly to the decrease of problematic video game use.

The fourth issue is on the documented lessons (D) from the addiction literature, particularly from the field of substance abuse. In fact, while supply reduction (such as regulating the sale of sleeping pills) is important, much work has been carried out in the drug and gambling fields emphasizing demand reduction by promoting psychosocial competencies in young people. With particular reference to drug education as a preventive measure of adolescent substance abuse, several lessons from adolescent drug abuse literature can possibly be translated to problematic video game use. First, moral objection does not work as it may create guilt and frustration in young abusers (Glynn, Leukefeld, & Ludford, 1983). Second, the fear approach does not work because it may trigger the sensation-seeking motive of young people (Warren, 2016). Third, the knowledge-focused approach focusing on the purely objective facts does not work because knowledge alone may create curiosity in young people who may eventually try the drugs (Botvin & Griffin, 2006). Finally, promotion of psychosocial competence in young people has been regarded as a promising approach to prevent youth drug addiction. In the National Registry of Evidence-Based Programs and Practices of the Substance Abuse and Mental Health Services Administration (SAMHSA, USA), evidence-based programs focusing on life skills development (e.g., Life Skills Training) can serve as useful reference for prevention programs for problematic video game use (https://www.samhsa.gov/data/evidence-based-programs-nrepp; SAMHSA, 2014).

Closely related to the field of adolescent prevention is another body of literature on positive youth development (PYD), which highlights the importance of social–emotional learning and psychosocial competence in young people

(Benson, Scales, & Syvertsen, 2011). According to this view, development of psychosocial competencies such as resilience, emotional competence, and positive identity would help to promote positive development in young people, which would eventually help them stay away from risky behavior such as problematic use of video games. For example, Shek (2017) reported that PYD programs can help to prevent drug abuse and problem behavior in adolescents in the Project P.A.T.H.S. in Hong Kong. The author suggested that the PYD approach is similar to the basic tenet of Chinese medicine of "strengthening the inner qualities" (gu ben pei yuan), through which adolescents will thrive and stay away from problem behavior when they have inner strengths. Obviously, it would be theoretically and practically exciting to see whether the protective role of PYD constructs also applies to problematic video game use.

The final issue is evaluation (E). Irrespective of the approaches and strategies for reducing problematic video gaming, there is a need to assess the impact of the implemented interventions. There are examples in the addiction field that interventions simply do not work, such as the Project D.A.R.E. (West & O'Neal, 2004). On the other hand, there are findings showing that some intervention programs could help to reduce Internet addiction and problematic game use (Shek & Sun, 2010; Turel, Mouttapa, & Donato, 2015; Walther, Hanewinkel, & Morgenstern, 2014).

There are several points that researchers should bear in mind when considering evaluation in initiatives to control the use of video games. First, there are different types of programs with different effects, including effective programs, promising programs, programs with unclear effects, ineffective programs, and programs with harmful consequences. Second, although many programs are designed with good intentions, "the road to hell is always paved with good intentions." Hence, good intention alone is not a sufficient condition for program success. Third, the impact of a program should be scrutinized with reference to the hierarchy of evidence ranging from case studies to randomized trials conducted by independent research teams. Basically, it is important to ascertain whether changes in the program participants are attributed to the intervention. Fourth, different evaluative criteria can possibly be used in evaluation, ranging from positivistic criteria in quantitative research to interpretive or constructionist criteria in qualitative research.

Fifth, although randomized control trials may be used to evaluate micro-intervention programs, it is much difficult to evaluate intervention programs involving macro-social policies where direct manipulation and creation of control groups are not easy. Sixth, intervention should be guided by research evidence. For example, research evidence shows that effective school-based preventive drug education has several attributes, such as grounding in well-articulated theories, being developmentally appropriate, focusing on psychosocial competence, use of peer leaders, focusing on experiential learning, focusing on familial and community influence, and highlighting the importance of evaluation. In the drug abuse field, there are effective examples using this approach. Finally, systematic reviews and meta-analyses play an important role in evaluating the intervention

programs in addiction. For instance, Faggiano et al. (2005) and Faggiano, Minozzi, Versino, and Buscemi (2014) compared different strategies of preventive drug education and emphasized the effectiveness of the skill-based intervention approach.

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