

## COMMENTARY

# Gambling Features and Monetization in Video Games Create Challenges for Young People, Families, and Clinicians

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**V**ideo gaming (also known as computer gaming or electronic gaming) has stirred scientific interest since its widespread adoption as a recreational activity in the 1980s. Initial research focused on the negative consequences of violent content and the development of excessive or addictive use by players. Based on evidence showing that some players develop clinically significant addiction-like symptoms such as loss of control and impaired individual, social, and occupational functioning,<sup>1</sup> Gaming Disorder has been recognized as an official diagnosis in the *International Classification of Diseases, 11<sup>th</sup> edition (ICD-11)*.<sup>2</sup> However, recent changes in video games have again produced qualitatively new problems.

A crucial innovation is the introduction of digital purchase options in video games, called microtransactions.<sup>3</sup> These mechanisms allow players to purchase virtual goods within games, usually for small amounts of money. In addition, gambling-like features have become increasingly integrated into video games as microtransactions. Of particular concern is the “loot box,” an in-game consumable virtual item that can be purchased with real money or obtained in-game as a reward and comprises a random selection of further virtual items with a low probability for desired ones. Although officially these virtual items hold no real-world monetary value, desired items provide players with competitive advantages or are highly praised within the gaming community because of their rare status, thereby increasing the social status of their owner. Microtransactions have raised concerns because of the financial costs incurred by children and adolescents, whereas gambling mechanisms such as loot boxes have generated heated debate because these features evade regulations and, according to certain scholars, permit and promote underage gambling.<sup>4</sup> As a consequence of this debate, several countries have taken regulatory action. For instance, Belgium recently banned

loot boxes on the basis that they violated gambling legislation.<sup>5</sup> Self-regulatory authorities in the North American and European video gaming industries have also introduced notices to inform players about the presence of paid random items.<sup>6</sup> However, the ever-changing gaming sector generates significant revenue from gambling elements in video games and may thus be motivated to evade legislation to boost profit margins.

These structural changes bring about novel challenges for parents and families, as well as clinicians. Media reports of children who “get hooked” and incur excessive costs in video games without parental permission have increased drastically since the rise of in-game monetization.<sup>7</sup> Research investigating adult samples consistently shows that those who spend large amounts in games are mostly players with gambling problems.<sup>8</sup> Moreover, loot boxes in video games may act as a gateway to problem gambling, particularly in young people, although this hypothesis needs further testing.<sup>4</sup>

Before the popularization of microtransactions, real-world loot boxes such as collectible cards have prompted similar concerns regarding addictive properties. However, inconsistent findings and a lack of research on the gambling mechanism behind trading cards have resulted in limited success in enforcing regulations on sales and advertisements.<sup>9</sup> This highlights the need for ongoing research efforts surrounding digitized loot boxes and other gambling mechanisms in video games, particularly as they may be more pervasive and accessible for vulnerable groups. To facilitate regulations, large-scale, international, representative studies are needed to generate knowledge on the prevalence, predictors, and health consequences of children incurring unwanted charges within video games to their parents. If in-game purchases become increasingly common expenses for

households, it is necessary to quantify not only whether but also how, when, and why spending becomes undesirable or problematic. Moreover, the putative consequences of this phenomenon on families must be explored, which could include parental stress, poorer parent–child relationship quality, and family conflict, in addition to tangible financial burdens, especially for those with pre-existing economic hardship. Protective factors (eg, parental knowledge of children’s gameplay) also represent an important research focus.

Unwanted spending by children within video games has been minimized, even by professionals, as some studies suggest that most children do not spend large amounts of money on microtransactions and loot boxes.<sup>10</sup> This premise, however, opposes a basic principle of clinical epidemiology, whereby clinically evident problems typically apply to a minority of the exposed population, yet still carry a substantial burden to those who are affected and therefore to society at large. In addition, even if parents can afford a child’s microtransactions, these may still be problematic from a developmental perspective if unwanted purchases are not discovered and early problematic behaviors are not addressed by parents. As pediatric clinicians regularly field family complaints surrounding the appropriate management of children’s unwanted spending within games, there is an urgent need to develop, disseminate, and evaluate clinical strategies to support families who present with these complaints.<sup>11</sup> In severe cases, unwanted spending may indicate substantial mental health problems such as early-onset gambling disorder, which is likely to persist and intensify throughout adulthood, resulting in negative impact across all areas of life (personal, social, occupational, recreational). Conflicts surrounding children’s excessive in-game spending may also result in significant disruptions within families, which elevates the risk of poor mental health outcomes. Beyond supporting the well-being of individual children and adolescents, pediatric mental health clinicians may direct parents in recognizing, understanding, and managing the potential harms associated with exposure to loot boxes and other in-game gambling mechanisms.

Unfortunately, we have good reason to believe that the gaming industry is intentionally using predatory techniques to increase profits.<sup>3</sup> When it comes to in-app purchases, the gaming industry appears to target individuals with lower self-regulation, making children especially vulnerable.<sup>10</sup> Given that the family context plays a fundamental role in helping children to develop self-regulation, clinical strategies will necessarily be family centered. Moreover, from a public health perspective, parents must develop an understanding of children’s exposure to microtransactions, as this is critical to

making informed decisions for regulating children’s in-game spending habits. This further forms the basis for scaffolding the self-regulation and limits necessary to prevent problematic spending and potentially to promote financial responsibility.

To effectively address the above challenges, researchers must consider the characteristics of in-app purchases and gambling features, including how these mechanisms work, how children get drawn in, and who are most vulnerable. Parental knowledge represents another key area of study, as this will facilitate effective prevention methods. In addition, advocates and policymakers must attempt to hold the gaming industry accountable and act in a socially responsible manner to advocate for the welfare of children and families, and the sustainability of responsible gaming.<sup>12</sup> This will subsequently promote much-needed guidelines regarding in-game purchases and gambling activities similar to those developed to help parents regulate their children’s Internet use and screen time.<sup>13,14</sup>

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#### Author Contributions

All authors took an equal part in conceptualization and planning. O.K. and J.Z. wrote the first draft. All authors commented and revised the manuscript, read, and approved the submitted version. All authors agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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