Movement Disorders
CLINICAL PRACTICE

LETTER

Problematic Mobile Gaming in Parkinson's Disease: An Impulse Control Disorder for the Smartphone

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Descriptions of impulse control disorders (ICDs), a well-known and common complication of Parkinson's disease (PD) medications, have recently expanded to include technology-associated behaviors like problematic internet use.[1,2] We present a case of problematic mobile gaming (PMG) and outline reasons why this novel ICD behavior is of particular concern for patients with PD.

Case Presentation

A 64-year-old woman who had PD for 5 years presented with a chief complaint of right-sided slowness and leg dragging, which were controlled with relatively high daily doses of levodopa (700 mg) and pramipexole (3 mg). Examination revealed a Montreal Cognitive Assessment (MoCA) score of 29 (of a possible 30), asymmetric rigidity, and bradykinesia (an "on-medication" score of 16 on the Unified Parkinson's Disease Rating Scale motor part, and Hoehn and Yahr stage 2.0), and dystonic foot inversion that hindered gait. She denied premorbid psychiatric history but described recent anxiety and depression related to the loss of her socially active lifestyle. Significant ICD behaviors included overeating, hours of watching online videos, compulsive baking, and playing piano, all of which interfered with daily activities. She denied gambling and hypersexuality.

Her most problematic ICD behavior was playing a popular game on her mobile devices. She played from 3 to 5 hours daily, missed meals, played while using the restroom, and spent $600/month on within-app purchases ("boosters" and extra "lives") in order to continue playing. When not playing, she thought about the game frequently. Playing the game was "an escape," allowing her to "take her mind off everything" and enjoy satisfaction in the moment.

Management of her ICD included attempting to taper pramipexole, deleting the game, education, and strict monitoring by her family. The problematic game remained deleted from her devices, but she continued to play free mobile games for hours each day. Hobbyism and overeating continued. Unfortunately, her mood later worsened, and she started playing another mobile game, unaware that she had quickly spent $900 playing it until receiving her credit card statement.

Discussion

Problematic mobile gaming likely fits into a larger framework of problematic technology use (e.g., problematic internet use, smartphone addiction). However, PMG and other smartphone overuse warrant particular awareness for clinicians who are treating patients with PD for several reasons. First, mobile devices are becoming ubiquitous. Mobile games are quite literally always at one's fingertips. Second, the mobile technology industry is rapidly advancing, developing exquisitely designed games to maximize use and profit. Stimulating graphics and sounds, along with innovative purchasing models (e.g., "freemium" pricing, subtle "within-app" purchases), can lead to hours of continuous play and unintentional spending. Finally, patients with PD may be particularly vulnerable to these design features. Those with cognitive impairment may not understand the true cost of playing. In addition, we hypothesize that playing games designed to provide near-constant reinforcement in the setting of medication-induced dopamine excess may lead to even more impulsive play.[3]

Technology overuse lacks the taboo of many ICD behaviors (e.g., gambling, hypersexuality) and thus may not be recognized as pathologic. As technology integrates into all activities of daily life, additional technology-related ICD behaviors may emerge.

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Because current screening instruments lack adequate questions about technology use, careful interview-based screening will be important to detect novel ICDs, especially in patients who have other behavioral symptoms.[4]

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