Treating behavioral addictions with neurotechnological interventions? A critical discussion of potential risks and benefits

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In the last 15 years, Mindfulness-Based Interventions (MBIs) demonstrated their applicability to populations of individuals with Behavioral Addictions (BAs), such as gambling disorder, internet gaming disorder, and internet use disorders) (Balconi and Angioletti, 2021). However, to date, the literature on this topic is still scarce, due to the lack of structured MBI protocols for patients with BAs as well as adequate tools for involving this clinical population and evaluating neuropsychological outcomes of the intervention. Recently, novel approaches that integrate MBIs with wearable brain-sensing neurofeedback (NF) devices showed their potential for the improvement of cognitive functions that promote efficient emotion regulation and stress management (Balconi et al., 2017; Bhayee et al., 2016). The integration of a NF device based on a smartphone App, which gives real-time feedback on the person's state of mindfulness, has demonstrated the possibility of reducing the dose and duration of the intervention and the participants' dropout. This contribution will discuss a research project aimed at testing the efficacy of a mindfulness-based neurofeedback (MBI-NF) protocol on a sample of patients with BAs, to empower their emotion regulation and executive functioning. Treating BAs with exposure to technological means may seem contradictory, as it seems problematic to allow participants to spend more time with a technological device (Bernstein et al., 2023), especially with a NF system that is based on an operant conditioning approach. Nonetheless, these tools allow BAs to be reached earlier thanks to the technologically attractive environment and meet the preference of many individuals for self-help (Andrade et al., 2014). The critical discussion on this project will highlight the potential risks and benefits of treating new addictions with technological health interventions and will prompt the discussion on possible intervention solutions.

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