
Title

The role of physical exercise on the brain and cognitive functions of patients in recovery from substance use disorder: A narrative review and recommendations for researchers and practitioners

Abstract

Background and aims: Physical exercise (PE) has been suggested as a potential complementary tool for substance use disorder (SUD) recovery. However, its potential benefits for the brain and cognitive functions are relatively less explored, even though cognitive functions play a key role in the recovery process. Here, we aim to (1) compile results from studies that examined the effects of PE on brain and/or cognitive functions in individuals with SUD, and (2) provide recommendations for future research and practitioners. Methods: We searched for articles that investigated either the acute or chronic effects of PE on brain markers and/or cognitive functions in individuals diagnosed with SUD. We then provided recommendations for future research studies based on limitations of the current literature, as well as instructions to practitioners about how to set up a PE program aiming to help the recovery process. Results: We found 9 studies examining the acute effects of PE and 14 investigating the impact of chronic PE. Most of them (~70%) were from China and had methamphetamine users (~61%) as their sample. Several limitations in the literature were found, including the lack of baseline physical activity levels, lack of studies on other populations, and lack of studies examining other exercise modalities (e.g., resistance training). Conclusion: Recommendations include the use of affect and perceived effort scales, expanding the studies to include behavioral economic variables (e.g., delay discounting and demand), exploring self-selected intensity exercises to increase adherence rates, and taking into consideration individual exercise type preference (e.g., running,

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