



4th Global Conference on Psychology

21 - 23 August 2026

Oxford, United Kingdom

The Impact of Nature-Assisted Qigong on Smartphone Excessive Use and Its Related Emotional-Cognitive Outcomes in Adolescents

Hui Guo

Hong Kong Baptist University

Abstract

Background: Problematic smartphone use (PSU) among adolescents has become a global public health concern, with prevalence rates reaching 39.7% in China (Liu et al., 2022). PSU is associated with significant emotional consequences (e.g., anxiety, depression, stress) and cognitive impairments, underpinned by neurobiological alterations in reward and control circuits, including the frontostriatal network, dorsolateral prefrontal cortex (DLPFC), and anterior cingulate cortex (ACC) (Chun et al., 2018; Wacks & Weinstein, 2021).

Objective: This review synthesizes existing evidence on the potential of Nature-Based Qigong as an intervention for adolescent smartphone addiction. It examines three mechanistic pathways: emotional regulation, compulsive behavior reduction, and cognitive enhancement, while also integrating theoretical frameworks from environmental psychology, including Stress Reduction Theory (SRT) and Attention Restoration Theory (ART) (Ulrich, 1983; Kaplan, 1995).

Methods: The review draws on empirical studies examining Qigong/meditative movement interventions for emotional and cognitive outcomes (Zou et al., 2018; Myers et al., 2018), alongside literature on nature exposure. Convergent evidence across these domains is evaluated for its relevance to core deficits of PSU as conceptualized by Elhai et al. (2017).

Results: Qigong practice alone has been shown to reduce anxiety and depression, alleviate compulsive symptoms, and enhance cognitive functions—including attention, memory, and executive function—through neuroplastic changes in the prefrontal cortex, hippocampus, and ACC (Qi et al., 2021; Liu et al., 2023). Independently, nature exposure reduces physiological stress markers (e.g., cortisol), restores directed attention, and improves working memory (Ulrich, 1983). However, no direct evidence currently links Qigong or Nature-Based Qigong to PSU outcomes.

Conclusion: Converging evidence from Qigong and nature exposure research provides a strong theoretical rationale for Nature-Based Qigong as a promising intervention for adolescent PSU (Xiang et al., 2023). The synergistic effects of meditative movement and natural environments may simultaneously target emotional dysregulation and cognitive fatigue—core mechanisms underlying smartphone addiction. Direct empirical testing through randomized controlled trials is urgently needed.

Keywords: problematic smartphone use, adolescent, Qigong, meditative movement, nature exposure, emotional regulation, cognitive function, attention restoration theory, stress reduction theory