



Comment on “Smartphone Addiction Proneness is Associated With Subjective-Objective Sleep Discrepancy in Patients With Insomnia Disorder”

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To the Editor,

Subjective-objective sleep discrepancy is observed in patients with psychiatric disorders by misperception of sleep, which can be determined by the comparison with objective sleep parameters via sleep polysomnography. In general cases, objective sleep parameters such as total sleep time (TST) is significantly longer than patients' report of sleep, and named “paradoxical insomnia” if they complain of their sleep quality.¹ Namely, paradoxical insomnia is defined as the discrepancy between subjective and objective assessments of sleep. There is a limited information about paradoxical insomnia, and neurophysiological mechanisms of sleep discrepancy in paradoxical insomnia have not been specified yet. Based on prospective studies, well-designed randomized controlled trials are required to understand causal relationship and appropriate treatment for physical and psychiatric disorders. There is a wide range of prevalence of paradoxical insomnia, presenting from 8% to 66%, which caused by the different definition of paradoxical sleep.² I think that international consensus of definition on paradoxical insomnia should be urgently determined.

Lee et al.³ evaluated subjective-objective sleep discrepancy in subjects with insomnia. This study presented information of paradoxical insomnia of smartphone users. The authors used psychological variables such as Smartphone Addiction Proneness Scale (SAPS), Center for Epidemiologic Studies Depression Scale, Beck Anxiety Inventory, and Global Assessment of Recent Stress scores for the assessment of paradoxical insomnia. The adjusted odds ratios (ORs) (95% confidence

intervals [CIs]) of age, years of education, and SAPS for TST misperception were 1.07 (1.01–1.13), 0.69 (0.48–0.91), and 1.14 (1.04–1.27), respectively. In addition, the adjusted OR (95% CI) of anxiety for sleep onset latency (SOL) misperception was 1.16 (1.05–1.31). In this study, depression was not significantly associated with subjective-objective sleep discrepancy. As the authors pointed out, no information has been reported regarding the risk of paradoxical insomnia in smartphone users. Use of blue light LED smartphones at night may negatively influence sleep, and I comment factors on subjective-objective sleep discrepancy.

First, the authors found that anxiety was significantly associated with SOL misperception. Alfano et al.⁴ compared subjective and objective sleep patterns in 39 clinically-anxious children and 36 healthy controls. Although there were greater subjective sleep problems among anxious children, objective sleep by actigraphy data revealed no significant differences between two groups. This report may support the data by Lee et al.³

Second, Ma et al.⁵ explored subjective-objective sleep discrepancy in patients with insomnia with special reference to obstructive sleep apnea (OSA) as one of the major sleep comorbidities. They observed that sleep apnea severity, objectively measured TST, and self-reported insomnia had the strongest association with sleep discrepancy. Especially, subjective SOL overestimation was predominant in patients with insomnia and OSA. Although there is no clear evidence on the association between smartphone use and OSA, there was a significant association between SAPS and TST misperception.³ In any case, paradoxical insomnia should be explored comprehensively for the risk assessment.

Availability of Data and Material

Data sharing not applicable to this article as no datasets were generated or analyzed during the study.

Conflicts of Interest

The author has no potential conflicts of interest to disclose.

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