Smartphone Use ‘More than Intention’: Is it Detrimental for Sleep and Behaviour of Medical Students?

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Sir,

Introduction

The present age witnesses the boom of revolutionized ‘always connected’ environment attributed to smartphone, fuelled by internet. This specific human-smartphone interaction endorses behavioural constellation of cognitive absorption, immediate gratification, craving, dependence, withdrawal and tolerance symptoms, interpersonal insensitivity and disregard for its negative consequences, similar to features of internet addiction. The bi-directional relationship between smartphone overuse and poor sleep reflects as a self-perpetuating screen-sleep cycle. As medical students are vulnerable for both, the study aims to explore the prevalence of addictive behaviour of smartphone usage among medical students and its effect on their various subjective sleep quality indicators.

Methods and Materials

This institutional-based, cross-sectional study was conducted among medical students. Inclusion criteria included (1) medical students (2) age ≥18 years (3) smartphone user with internet. Exclusion criteria included (1) diagnosed case of sleep disorder/psychiatric illness (2) drug history of hormones, steroids, sedatives, stimulants or any psychotropic drugs; etc which may affect sleep (3) pregnancy or lactation. With face-to-face interviews, following details were recorded: (1) socio-demographics (2) anthropometric measurements (3) Smartphone Addiction Scale—Short Version (SAS-SV) to predict smartphone addiction and addictive-like symptoms1 (4) Pittsburgh Sleep Quality Index (PSQI) to measure the subjective quality of sleep over past 1 month2 (5) Epworth Sleepiness Scale (ESS) to determine daytime hypersomnolence3. Statistical Package for Social Sciences (SPSS) version-22 was utilized for statistical analysis.

Results

Out of 260 students, majority (54.43%) were males and 45.57% were females. The presence of addictive symptoms was significantly higher among smartphone addicts. Smartphone addiction had strong association with longer sleep latency [OR-2.18, 95%CI: 1.29-3.67], poor sleep [OR-2.23, 95%CI: 1.35-3.71] and with daytime hypersomnolence [OR-2.83, 95%CI: 1.7-4.7].

Discussion

Smartphone use can have commensurate effect on sleep-wake timings, resulting in circadian rhythm desynchronization. Blue light exposure during bedtime suppresses sleep-facilitating melatonin release, thus delaying sleep onset. Also, pre-bedtime smartphone activities like chatting, video games and continuous digital notifications cause physiological, cognitive and emotional arousal, thus artificially lengthening sleep latency and interfering with sleep architecture. Chronic sleep deprivation can affect neuronal circuits involved in regulation of emotions, impulse control and reward-punishment behaviour, thus interfering with thoughts, motivation and personality traits. Thus, problematic smartphone usage and poor sleep, both can have direct and independent implications on health and behaviour of the students. Conglomeration of time-specific data on smartphone usage and identification of potential risk factors would help to recognize affected students who can be conferred counselling and behaviour therapy. Educational interventions promoting sleep hygiene, physical activity and occasional technology ‘break’ would facilitate ratiocination towards friendly use of smartphone to avoid any deleterious implications on health, mood and cognition.

References