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Letter to the Editor

Comments on “A narrative review of interventions for improving sleep and reducing circadian disruption in medical inpatients”

Dear Editor,

We have read with interest the article by Tan et al., entitled “A narrative review of interventions for improving sleep and reducing circadian disruption in medical inpatients” published in Sleep Medicine [1]. The authors addressed the frequently observed problem of sleep and circadian rhythm disruption in hospitalized patients and discussed how patient characteristics, hospital routines and hospital environment contribute to sleep and circadian rhythm disruption in patients. In their narrative review, the authors discussed the key role of patient characteristics such as sleep disorders, hospital routines (eg, pain management and medication timing), and hospital environmental factors (eg, light and noise in management of sleep and preventing disruption of circadian rhythm in patients). Tan et al., also proposed hospital-based strategies that reduce sleep and circadian rhythm disruption in hospitalized patients.

Despite numerous strengths, the paper authored by Tan et al., had at least a major shortcoming, which resulted from ignoring the role of digital screen use time and exposure to electromagnetic fields (EMFs) in management of sleep problems in hospitalized patients. A study performed on adult inpatients at a large urban California teaching hospital showed that 56% of the patients brought a smartphone and 95% used it during their hospital stay. Moreover, 27% brought a tablet (90% used it during their stay) and 19% brought a laptop (83% used it during their hospital stay). The overall rate for using at least one mobile computing device (smartphone, tablet, laptop) was as high as about 70% [2].

Notably, smartphones and tablets as well as laptops and desktop computer monitors emit light in the blue range. Although laptops and desktop computers emit higher levels of the disrupting blue light, these devices are usually placed at a relatively far distance to the eyes. Therefore, handheld devices such as smartphones and tablets play more important roles in sleep problems. Given this consideration, the viewing distance of smartphones is shown to be negatively correlated with subjective sleep status [3].

In addition, it is noteworthy that not only the fact that blue light emitted from digital screens can be linked to decreased melatonin secretion [3] but also the radiofrequency electromagnetic fields (RF-EMFs) generated by smartphones, tablets or laptops can be associated with disrupted circadian rhythm and sleep problems [4–7]. Therefore, the authors have entirely ignored substantial data showing the link between exposure to either blue light or RF-EMFs emitted from widely used handheld devices and sleep problems. A large number of studies which showed the link between exposure to EMF and sleep disturbance/insomnia were reviewed by Pall in 2016 [8]. It is worth noting that recently developed color-shifting applications that make the smartphone's screen look “warmer” at night by changing the screens' output light spectrum (emission of light at relatively longer wavelengths) or using special filters which block blue light (eg, using amber filters) which can mitigate the problems associated with blue light [9,10]. However, the issue of reducing or blocking the RF-EMFs is still unsolved and needs further research [11].

Conflict of interest

None declared by the authors.

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