LETTER TO THE EDITOR

Comment on "Associations between sleep duration and suicidality in adolescents: A systematic review and dose-response meta-analysis"

In their recent literature review and meta-analysis, Chiu et al. observed a linear dose-response relationship between sleep duration and the presence of suicide plans in a pooled sample of adolescents [1]. The analysis indicated that the risk of having a suicide plan decreased significantly, by 11% for every 1 h increase in sleep duration. The linear response was not dependent on the presence of mental health conditions. Recently, Rössler et al. demonstrated that the correlation between sleep disorders, including short sleep duration, and suicidality was also observed in adults [2]. In their 30-year longitudinal cohort study of adult participants, Rössler et al. showed that the prevalence of sleep problems increases steadily with age, while the prevalence of suicidality decreases between the ages of 20 and 40, with a small increase at age 49–50. Cross-sectionally, and for any given age, it was shown that more severe sleep problems are associated with more pronounced suicidality, including suicide ideation and behaviours. These associations persisted after controlling for socio-demographic characteristics and clinical characteristics such as the presence of mood, anxiety, or substance-use disorders. These findings confirm that sleep problems are not just an accompanying symptom of underlying mental disorders, but stand independently as a major risk factor of suicide [3].

The relationship between sleep disorders and suicidality could have an important impact on future suicide prevention strategies. An empirical research question derived from the identified relationship between sleep problems and suicidality could be formulated as: do sleep problems stand for a suicide risk biomarker and help to predict and prevent a suicide attempt? While it is unrealistic to monitor sleep to prevent suicidal behaviours at a universal level in the general population, some recent insights about those who are suicidal may help to include sleep monitoring into preventative initiatives. Firstly, suicide is a statistically rare event in the general population, so powering studies to detect meaningful changes in suicide rates is especially challenging. A previous suicide attempt is a strong predictor of suicide-related premature death [4], and the post-discharge period represents a critical challenge for emergency and mental health care services in the short as well as longer-terms [5]. Delivery of a brief contact intervention after a suicide attempt has been shown to be effective in reducing repeat attempts, but these follow up strategy rarely longitudinally assess sleep [6]. It is possible that these strategies could be made more effective by including additional interventions, triggered in response to monitored sleep data.

Several studies have included ecological sleep monitoring in the follow-up of suicidal patients. For example, Mirsu-Paun et al. explored whether sleep problems were associated with a wish to die over a 1-mo period following a suicidal crisis [7]. Sleep difficulties were assessed using a paper-based self-report questionnaire about the participant's satisfaction with sleep and time in bed. It was found that a wish to die was significantly associated with the severity of insomnia, low satisfaction with sleep, and sleep duration one month after the index crisis, even after controlling for the presence of depression or anxiety. Another approach which can be utilised to monitor sleep is through the use of technology-based monitoring devices and electronic health (eHealth) methods [8]. Wearables can monitor sleep ecologically (i.e., in an individual's natural environment) and with enough accuracy for a suicide prevention setting. Benard et al. aimed to identify trait circadian rhythms and sleep biomarkers associated with suicide attempts in patients with bipolar disorder [9]. For ease of use, and to minimize the inconvenience for participants, the authors used actigraphy. All participants were asked to wear an Actiwatch (AW-7 CamNtech) on the wrist of their non-dominant hand for 21 consecutive days. Gender, strength of circadian patterns, insomnia and earlier daily activity appeared to be independently associated with suicide attempts in participants.

Taken together, these results advocate for the ecological screening of sleep disorders as a potential biomarker in suicide prevention strategies. We acknowledge the importance of Chiu et al.'s results in demonstrating the importance of sleep disorders in suicide prevention strategies. Recent findings suggest that sleep monitoring may help to trigger preventative interventions, supported by emerging eHealth methods, which will make alert data immediately available to the clinician.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.smrv.2019.07.002.

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