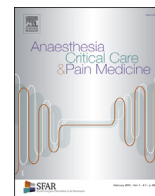




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Editorial

Insufficient sleep among Anaesthesiologists and Intensive Care Physicians: It's time to wake up!



ARTICLE INFO

Keywords:

Sleep deprivation
 Insufficient sleep syndrome
 Sleep disorders
 French anaesthesiologists
 On-call shifts

Although insufficient sleep syndrome (ISS) is now recognised as a distinct sleep disorder [1] and as a public health epidemic, it is still often considered an inevitable consequence of our modern 24 h society. Insufficient sleep is defined as a curtailed sleep pattern persisting for at least three months for most days of the week, along with complaints of sleepiness during the day.

Epidemiological evidence suggests that sleep deprivation is associated not only with premature mortality [2] but also with an extensive array of adverse health outcomes [3]. Normal sleep plays a vital role in regulating cognitive performance and workplace productivity. This is especially true for anaesthesiologists and intensivists who are exposed to alternating day and night shifts – and thus to sleep deprivation. Previously, Richter et al. reported that 52% of anaesthetists slept less than 7 h out of 24 h, with an average sleep duration of 6.5 h during their professional activity [4]. At the same time, the 2017 French National Health Barometer survey showed that the total sleep time of French adults was around 7 h [5].

Sleep can be evaluated by two distinct factors: duration and quality, both factors which are strong health determinants correlated to numerous metabolic, vascular and mental comorbidities. A reliable evaluation of sleep quality is often challenging because of the obstacles to easily access polysomnography or actigraphy and because objective and subjective measures of sleep quality may differ [6]. Conversely, total sleep time, even self-reported, seems to be a more reliable and reproducible tool for surveys and for public health recommendations – indeed, the US National Sleep Foundation recommends a sleep duration of between 7 h and 9 h for adults [7].

Five years after Richter et al., Robin et al. [8] report in this issue of *Anaesthesia Critical Care and Pain Medicine*, on the EQSAR study –

a national cross-sectional study offering a recent overview of sleep duration and quality among French anaesthesiologists and intensivists (FAIs). Although the sample represents only 21.6% of FAIs, it is the largest survey conducted in France. This survey is well conducted, with clear questions and validated scores to assess the sleep quality and duration of FAIs. The number of participants is impressive, including for the first time both public and private clinicians. Although this study is declarative, it is the only way to assess these outcomes in the largest population of FAIs. These results cannot, however, be extrapolated to FAIs of other nationalities.

The results indicate no improvement in sleep quality and duration among French FAIs since the report of Richter et al. [4].

Among the 2 483 responders included in the analysis, 57.4% of them slept less than 6 h per night, which represents one hour less than the average sleep duration reported in France [9] and one half hour less than that reported five years ago [4]. In comparison with the proportion of physicians with sleep disturbances and excessive daytime sleepiness (EDS) reported in the study of Richter et al., these symptoms had increased markedly by 27 % and 18 %, respectively. The authors show that sleep disorders and EDS were statistically greater for anaesthesiologists sleeping less than 7 h than for those sleeping over 7 h, confirming that the two facets of sleep – sleep duration and quality of sleep – are associated with each other.

Over the last decade, the average total number of hours of sleep obtained per night by normal individuals has been observed to decrease in French adults [5,9]. According to the EQSAR survey, however, the decrease seems to be greater for FAIs than for the general French adult population. Some risk factors reported in the EQSAR survey – such as age, active smoking and screen consultation at the bedtime – are not specific to anaesthesiologists and intensivists [10,11]. Conversely, the association between more than 5 on-call shifts per month and sleep deprivation is, to our knowledge, described for the first time.

The EQSAR study was conducted prior to the current pandemic of coronavirus disease 19 (COVID-19), which has led to a work overload and an increase in the number of night-calls, especially for physicians of our specialty. Frontline health care workers who are directly involved in the management of patients with COVID-19 are exposed to heightened levels of stress and uncertainty. Stress is directly responsible for sleep disturbances and carries in this context a specific risk of being more vulnerable to viral exposure, due to the reduced functioning of the immune system [12].

In a recent Chinese survey of 1257 health care workers in hospitals equipped with fever clinics or wards for patients with COVID-19 in China, one-third of respondents reported insomnia among other symptoms of psychological stress during the pandemic [13].

The cognitive performance of physicians is known to be negatively affected by night work cycles, with amplification of medical errors [14,15]. Mental processes after more than 17 h of sleep deprivation would be equivalent to – or more impaired than – those at a blood alcohol concentration of 0.05% [16]. Recently, Maltese et al. demonstrated in three French intensive care units (ICUs) that the cognitive abilities of intensivists were significantly impaired following a night shift in the ICU, regardless of either the amount of professional experience or the duration of sleep during the shift, suggesting that even a single night shift could have deleterious effects [17].

This negative relationship between a night shift and the practitioners' performance is now widely accepted and, for patient safety, having a rest day after a night shift has become a matter of course for anaesthesiologists and intensivists.

However, night shifts also have negative effects on physicians' health in the long term. This field has been poorly investigated in the literature, and the EQSAR study outlines an interesting link between more than 5 on-call shifts and insufficient sleep quantity and quality.

Ideally, the solution would be to reduce the number of night shifts per month, but this would probably be impossible in many settings due to the shortage of anaesthesiologists and intensivists; we must therefore find other strategies.

The approach should focus on improving the quality of sleep rather than duration because – as mentioned previously – the general reduction in sleep duration is a global phenomenon in the contemporary world, and not confined to anaesthesiologists and intensivists. Moreover, although the exploration of how sleep quality and sleep duration combine or interact to affect health has been poorly investigated, improving sleep quality could be as effective as increasing the duration of sleep [18]. In this context, a variety of practices and habits – known as “sleep hygiene” – have been proposed, such as avoiding caffeine, alcohol or nicotine before bedtime, performing physical exercise several hours before going to bed and easing the transition from wake time to sleep time with a period of relaxing activities. Several complementary techniques have been advocated in addition to hygiene rules. Short naps (less than 1 h) before, during and after the night shift can reduce fatigue and should be used to enhance good sleep hygiene [19,20].

The EQSAR survey is a reminder that, despite being “at risk” practitioners, anaesthesiologists and intensivists pay less than optimal attention to their sleep quality. This situation probably stems not only from the global trend toward decrease of sleep duration due to our 24-hour society, but also from factors directly linked to the specific requirements of this particular speciality. Simple tools, however, could easily be implemented in our current practice, but must be assessed in the specific population of FAIs. It is now time for a French national prevention campaign among anaesthesiologists and intensivists, not only to promote their awareness but also to alert the health authorities. More communication and education are urgently needed. It will also be necessary to assess the long-term consequences of the current COVID-19 crisis on the sleep quality and duration of anaesthesiologists and intensivists.

Conflicts of interest

None.

Assistance with the study

None.

Financial support and sponsorship

None.

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Available online 28 September 2020