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CORRESPONDENCE

Optimal sleep health among frontline healthcare workers during the COVID-19 pandemic

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To the Editor,

Since the start of the coronavirus disease (COVID-19) outbreak in December 2019 in Wuhan, China, it has been declared a pandemic and has now involved over 200 countries.[A] Adverse effects on the mental health of frontline healthcare workers (HCW) has been at the forefront of concerns,[1] with insomnia being one of the most commonly reported symptom.[2] Because of the fundamental role that sleep plays in emotion regulation and body homeostasis, sleep disturbance can have direct consequences on both emotional functioning and wellbeing.[3] As physician wellbeing and patient safety are inextricably linked,[4] it is imperative that we address sleep health for the sake of physicians and their patients.

Over 1,200 HCWs from 34 hospitals in China dealing with COVID-19 were surveyed for mental health and sleep problems in a recent cross sectional, survey-based, region-stratified study.[2] Frontline workers involved in direct care of patients with COVID-19 were associated with the highest risk of insomnia (odds ratio [OR], 2.97; 95% confidence interval [CI], 1.92 to 4.60), followed by depression (OR,1.52; 95% CI, 1.11 to 2.09), anxiety (OR, 1.57; 95% CI, 1.22 to 2.02), and distress (OR, 1.60; 95% CI, 1.25 to 2.04).[2] These self-reported symptoms were higher among nurses, women, and frontline HCWs, and in geographical areas with higher case infection rates.

During a pandemic, concerns about personal safety, transmitting disease to family members, stigmatization from being infected, shift work, and interpersonal isolation coalesce to disrupt sleep health. This can manifest by hyper-arousal states, as well as problems with anxiety and stimulus control (e.g., beginning to associate the bed with wakefulness, rather than restful sleep); all of these can have negative effects on physician wellbeing.[5] Moreover, specific lifestyle modifications such as home confinement and self-isolation can also negatively impact sleep health. Anesthesiologists may be particularly susceptible to all the aforementioned concerns given our direct involvement with high-risk aerosol-generating medical procedures, shift work, and redeployment to areas outside some practitioners' normal scope-of-practice such as critical care units. Important biological factors also influence sleep pathophysiology including age (e.g., decreased amounts of slow wave and rapid eye movement sleep, increased incidence of sleep disorders such as obstructive sleep apnea (OSA), sex (e.g., women

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Table Optimal sleep health advice for frontline healthcare workers while dealing with the COVID19 pandemic

Optimal sleep health	Mechanisms and things to keep in mind	Specific tips
Preparation for a good night sleep begins during the daytime	• Having a regular circadian rhythm is important • Exposure to sunlight, and exercise during the daytime helps in attainment of sleep pressure accumulating by the end of the day • Caffeine persists in your system for a long time and may interfere with your sleep • Longer naps can lead you to get into slow wave or deep sleep, that is difficult to arouse from, and you may wake up with a headache and grogginess	• Try to get out of bed at the same time each day • Exercise in appropriate amounts during the daytime, and avoid exercise closer to bedtime, or night • Avoid caffeinated beverages, especially after noon • Avoid naps, or limit them to between 15 and 20 min
An hour or two before going to bed	• Your bed is your restful abode, save it for sleep or sexual activity • Alcohol has a short-lasting effect on speeding sleep onset; however, this effect is offset by problems with sleep maintenance and increased nocturnal awakenings • Nicotine and nicotine withdrawal can disrupt sleep • White or blue light (present in electronic devices and LED lights) can suppress melatonin in the body and delay the bedtime further, causing problems with sleep initiation	• Make sure the bedroom is dark and quiet, and at a comfortable temperature • Limit exposure to white or blue light close to bedtime (e.g., electronic devices and LED lights) • Remove (or turn off) television and consider using a "night shift" mode on electronic devices, light dimmers, or "blue-blocker" goggles to block ambient white or blue light closer to bedtime • Try not to take your work to bed (e.g., do not work on a laptop on your bed) • Stay away from news or information about the pandemic • Avoid heavy alcohol use, heavy meals, and smoking • Try light stretching exercises, such as yoga or tai-chi • Try taking a warm bath, or a shower for relaxation
When you go to bed	• Some people start associating bedtime with worries and anxiety, which are best left outside the bedroom • Reframe your bedroom as a restful place in which you can sleep	• Try to keep a regular bedtime and a wake time, except in situations where it is not possible (e.g., being on call or night shift) • The best environment is dark and quiet • If you are having trouble falling asleep for longer than 15 min, get out of bed and do something less engaging or relaxing. If you get out of bed, keep the lights dim, and avoid blue light exposure. When you feel ready to go back to sleep, go back to the bed. If you wake up again, the same rules apply • Stop clock watching; do not stare at the clock. Set the alarm, and turn it around such that you can not see the time display • If you have persistent worries, jot them down on a piece of paper ("the worry list"), and leave it in a drawer. Go to bed, and then go back to the "worry list" the next morning

Table continued

Optimal sleep health	Mechanisms and things to keep in mind	Specific tips
Healthcare worker specific advice	• Be mindful of your emotional and mental health • Humans are a diurnal species that are active and work during the day, and sleep during the nighttime. Working late at night, and shift work can seriously impair sleep health and daytime functioning • Strategies to deal with shift work involve giving more priority to sleep, trying to stay alert during the night shift, prevention of excessive daytime sleepiness or accidents if excessively sleepy, and trying not to rely on sleeping pills during the day	• Check-in with colleagues and family members to express stressful emotions regularly • In your free time, find distracting tasks such as your favourite hobby, narrative writing • Get exposure to natural daylight during the day and exercise regularly • If you have to work at home, define a workspace outside your bedroom, and have specific start and stop times. Stop working close to bedtime • To avoid accidents after finishing a busy night shift, do not drive home in your car • If possible, walk home. If not, then use a taxi or ride-sharing app • Consider taking a short nap before your night shift • Most people prefer going to bed as soon as possible after a night shift
Seek sleep physician advice if you experience sleep disorders	• It is important to identify and treat intrinsic sleep disorders as acute insomnia can worsen sleep health further	• Excessive daytime sleepiness, dangerous work-related mistakes, inability to concentrate or make decisions, extreme irritability or strong emotional reactions, drowsy driving ("fender-benders" or motor-vehicle accident) are signs your sleep health may be impaired • High score on a daytime sleepiness scale, e.g., Epworth Sleepiness Scale (> 10) • Loud snoring, witnessed apneas, or a high-risk score on a sleep apnea screening tool, e.g., STOP-Bang questionnaire (> 3) • Symptoms of restless legs or periodic leg movements closer to bedtime
Interventions: cognitive behavioural therapy, sleep medications	• Lifestyle modification and cognitive behavioural therapy for insomnia (CBTi) preferable • Hypnotic medications: avoid as much as possible; only consider for short-term use • Seek medical advice wherever necessary, especially if you experience coexisting depression or chronic pain, or use co-medication for optimal therapy	• CBTi is considered first line. Speak to your sleep physician or psychologist about various options such as in-person, group, or online methods • Melatonin, if used along with other optimal sleep habits, and blue blockers may be useful • As much as possible, try to avoid over-the-counter or prescription sleeping pills • Consider risks-benefits and side effects from each medication • Use of hypnotics may be considered for short-term use for severe insomnia; however, issues with psychologic and/or physical dependence, tolerance, substance misuse, and sleepiness are important considerations
Useful resources	*Canadian Sleep Society (CSS):* Patient information brochures: https://css-scs.ca/resources/brochures Sleep medicine facilities in Canada: https://css-scs.ca/resources/provider-map *American Academy of Sleep Medicine (AASM):* Sleep Health information: https://sleepeducation.org/ *Society of Anesthesia and Sleep Medicine:* https://sasmhq.org *Sleep on it Canada:* https://sleeponitcanada.ca/ *Canadian Sleep and Circadian Network (CSCN):* https://www.cscnweb.ca/material-for-patients-and-the-public *National Sleep Foundation:* https://www.sleepfoundation.org/sleep-disorders	

self-report shorter and poorer sleep compared with men; higher incidence of OSA in men and post-menopausal women), psychosocial state (e.g., presence of depression, stress, loneliness), socio-economic status, race, and ethnicity.[3] Furthermore, individual sleep patterns—e.g., the hypnotype (habitual sleep duration) or chronotype (morningness/eveningness preference)—can conflict with shift work, which requires inflexible work hours and disrupts circadian rhythm.[3]

Optimal sleep health is essential for the wellbeing of HCW, and thus the provision of safe patient care. Physician burnout has been associated with an increased risk of patient safety incidents (OR, 1.96; 95% CI, 1.59 to 2.40), poorer quality of care due to low professionalism (OR, 2.31; 95% CI, 1.87 to 2.85), and reduced patient satisfaction (OR, 2.28; 95% CI, 1.42 to 3.68).[4] Given that sleep is even more disrupted during the COVID-19 pandemic, we herein present some useful sleep habits partly adapted from cognitive behaviour therapy for insomnia, relevant information and other resources for the frontline HCW (Table; and eFigure in the Electronic Supplementary Material). We are hopeful that optimal sleep habits, stress management, cognitive strategies for sleep, relaxation techniques, increasing awareness of common sleep disorders, and behavioural interventions may compliment institutional wellness programs and aid our colleagues during this stressful time.

Notes

A *World Health Organization*. Coronavirus disease (COVID-19). Situation Dashboard. World Health Organization. Available from URL: https://www.who.int/emergencies/diseases/novel-coronavirus-2019 (accessed May 2020).

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