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Sleep and Mental Health during the COVID-19 Pandemic

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Abstract

During the COVID-19 pandemic, a number of mental health issues were reported in various populations, including all age groups. In addition, sleep problems and sleep disturbances have been subjectively reported as a symptom in the general population, as well as in specific subgroups recognized in this review. The association of mental health issues and sleep problems is relevant in terms of future interventions that might mitigate the negative effects of pandemic-related restrictions on individuals.

Keywords: Sleep; Sleep Habits; Sleep Disturbances; Mental Health; COVID-19; Pandemic; Restrictions

Sleep Habits and Mental Health During COVID-19 Pandemic

A growing concern to global public health exists in terms of sleep disturbances and mental health issues continuously recognized as a consequence of COVID-19 pandemic-related restrictions [1], as well as a consequence of the COVID-19 infection itself [2]. Since an increasing number of review and meta-analysis is being published, during an overall surge in the number of COVID-19 publications, new opportunities emerge for scientists in the field of sleep medicine, aimed at clarifying the aforementioned associations. Review papers and meta-analyses of such findings have been consistently reported in children [3-5], as well as in adolescents and students [6,7], the adult population as well as working population [8,9], and in the elderly [10,11].

Role of the Pandemic Environment

The ongoing social restrictions and personal life changes during the COVID-19 pandemic disrupted the well-established circadian rhythms of most individuals, thereby affecting even the homeostatic drive to sleep. Since the circadian rhythm is under the influence of both exposures to daylight, activity levels during daytime, as well as social components such as meal times, exercise and interaction with others; it was not a surprise for sleep medicine scientists to discover negative effects of the pandemic on sleep habits. There is no doubt that adequate sleep habits and sleep quality is critical for emotional regulation [12], and that sleep deprivation per se might be a precipitant to the onset of mental illness [13]. Unfortunately, sleep disturbances often accompany various mental health difficulties even at a young age [14]. Psychological symptoms during COVID-19 in children and adolescents have been investigated in different nations [15,16], and a role of the pandemic restrictions on children's play has been recognized as a relevant issue [5]. Since the pandemic outbreak, it has been commonly suggested by sleep experts that sleep habits might contribute to or act as a protective factor in mental health issues in all age groups.

Recovery of COVID-19 Infection

Following the recovery of COVID-19 infection, several complications have been underlined, among which psychological symptoms have been described as common [2]. One of the recognized psychological symptoms are insomnia-related symptoms, and it has been highlighted that sleep as a symptom should be even more carefully monitored in the post-COVID-19 recovery than mood symptoms [17]. However, it should be underscored that recently established long-term prevalence of anxiety, depression, post-traumatic stress disorder, and sleep disturbances in patients recovered from COVID-19 infection has been shown to be comparable to general population levels [18].

The Bidirectional Relationship-Sleep and Mental Health

In patients experiencing mental health issues before the pandemic, an increased risk has been recognized for sleep disturbances (ref). Still, the association is bidirectional, since a recent review confirmed that, among other risk factors, sleep quality is also associated with an increase in the risk of adverse mental health outcomes in the COVID-19 aftermath [19]. Similar associations were described even before the pandemic, when reduced night-time sleep quality was associated to some aspects of mental health, particularly externalizing problems [20,21]. Even twin studies confirmed that late bedtime and short sleep duration could predict depression and anxiety, and even suicidal risk [22]. It is highly problematic that sleep disturbances have been shown to negatively affect mental health issues, thereby highlighting the need for interventions in all populations where such associations were recognized.

Quarantine, Sleep and Mental Health

A large amount of research in this area has been devoted to the understanding of quarantine experience in relation to both sleep habits and mental health issues [4,7,23-30]. A number of reviews and national surveys revealed the overall psychological impact of lockdown-related measures during the COVID-19 pandemic [4,23,24,29,21-35], as well as an impact on sleep disturbances and changes in sleep habits [7,24,36]. It has been outlined that quarantine itself contributes to numerous psychological problems, as well as social and even financial issues in individuals being quarantined and their family members [29,30,37]. A comprehensive overview of possible protective and risk factors for the psychological impact of quarantine during the COVID-19 pandemic has been reported [30]. The aforementioned review emphasized anxiety, distress, and depression as the most common psychological difficulties, and attempted to understand it from a socio-ecological framework. The authors presented an overview of socio-demographic risk factors as well as individual-level factors, among which history of psychiatric disorder, history of cancer or other chronic diseases, self-evaluation on the knowledge about COVID-19, worry related to infection, low perceived health condition, fear of contracting and spreading the virus and poor sleep quality were recognized as risk factors for quarantine related negative psychological impact [30]. In addition to previously mentioned psychological consequences, eating disorders have also been recognized as more common during the COVID-19 pandemic, due to changes in routine and increased levels of stress and trauma in individuals at risk for eating disorders [38].

Health-Care Workers

There is no doubt that health care workers carried a heavy burden of the pandemic, as mental health consequences and sleep-related disturbances have been reported in the aforementioned population, due to both exposure to stress and the atypical working schedules, as well as other factors [9,31]. Increased frequency of anxiety, depression, stress, and other mental health issues in healthcare workers during the COVID-19 pandemic might have been expected since even before the pandemic both short sleep duration and elevated incidence of sleep disorders has been reported among workers in the healthcare industry [39,40]. Since the COVID-19 pandemic has taken a heavy toll on health professionals in terms of burnout and associated mental health issues [41], future interventions should appropriately attend to both mental health problems and sleep problems of health-care workers.

Recommendations

Practical recommendations from a task force of the European CBT-i Academy have been published in order to minimize the negative consequences of sleep problems during home confinement due to the pandemic, including recommendations for healthcare staff and those with an increased work burden affecting sleep opportunity as well as for women and children in family contexts, recognizing them as those being at increased risk for such consequences [27]. All of previously mentioned findings are even more relevant since the increase of sleep and mental health problems during the pandemic did not trigger help-seeking, and a recent publication reported help-seeking behavior only in one third of participants with sleep problems and symptoms of mental disorders [39]. It remains to be elucidated if the established effects of COVID-19 related restrictions and the infection itself on sleep and mental health will remain in the following years. It is of even greater importance to understand the mechanisms of such long term effects and therefore pinpoint the risk factors that remain relevant for mental health and

sleep issues. Understanding plausible protective factors that promote mental health during stressful life events, such as the pandemics, has implications for future research as well as for focused interventions aimed at vulnerable groups.

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