Covid-Somnia: Sleep Disturbance Among Physicians and Nurses During Covid-19 Pandemic in Makkah

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Abstract:

Background: Sleep is considered a vital for every feature of human life. Insufficient sleep has a immense negative influence on health and work. There is very restricted information about the impact of COVID-19 on the sleep disturbance of health-care workers. Therefore, this study aimed to examine the impact of the COVID-19 pandemic on sleep patterns on nurses working in COVID care area.

Methods: A cross-sectional study was conducted on 310 health-care workers (nurses and physicians) who were purposively enrolled for this study. An e-survey method was used to collect data. A questionnaire including sociodemographic characteristics, queries about sleep disturbances, and the patient health questionnaire-9 scale to assess anxiety among participants are among the research tools from the period of January to April to June 2020..

Results: Mean age of health-care workers was 26.3 years (SD = 6.3). Most of them were women (81%) and married (71%). The majorities of nurses (85%) were not infected with COVID and were given suitable personal protective equipment (46%) in the hospital. The majority of participants (44%) got 6–8 h of sleep per night did not receive any sleep therapy (91%). The most of participants (46%) reported that they did not enjoy performing activities and were under moderate stress (15.4).

Conclusion: Health-care workers are struggling to cope with the COVID-19 pandemic with limited and almost hackneyed resources. Healthy sleep is everyone's right. The current situation of the pandemic has a great impact on the psychological health of frontline health-care workers by affecting their professional performance.

Key words: COVID-19, COVID-somnia, physicians, nurses, pandemic, sleep disturbance, stress

Introduction

The year 2020 will be described in the future as the year of a cataclysmic event. World Health Organization (WHO) identified that the COVID-19 pandemic recognized the importance of a sound health system. The widespread of pandemic also unveiled the issues of this mostneglected population of hospital staff facing challenges every day. Health institutions can only keep their patients safe if their health care workers are healthy physically, mentally, and are working at full capacity (Zhang et al., 2020).

Coronavirus disease virus, which firstly appeared in Wuhan, China, in December 2019, has formed an unprecedented situation internationally and has come as a challenge to health-care institutions in most countries. Pandemic fear has caused widespread concern among people and health institutions, socially and disrupting normal daily routines (Mukherjee et al., 2021).These concerns growing anxiety and distress among health-care workers (Kumar & Dwivedi., 2020).

COVID-somnia is a term used as a purpose of the substitute to ease divulgence (Gupta et al., 2020). As sleep is vital for the regulation of humoral and cellular immunity of an individual, sleep deprivation reduces their immune response. Healthy sleep can not only enhance physical and mental limitations but can also improve body functions and facilitate better working performance (Ibarra-Coronado et al., 2015).

Health-care workers especially nurse and physicians are among the most precious assets as well as venerable populations in any country. Sadly they are going through the classic rock-and-a-hard-place scenario, miserably needed during the resilience retaliation to the outbreak and struggling to maintain morale and a healthy mental state (Salari et al., 2020; Vasantha Kalyani& PM., 2021).

It is realistic to accept as true that health-care workers are more likely at risk than the general public to contract COVID-19 due to the highly contagious environment in which they have direct contact with patients. Previous statistics also reported that health-care workers handled a distinguished portion of the infected cases during the pandemic (Vizheh et al., 2020; Ortega., 2017).

Frontline health-care workers are under unlimited pressure to participate in pandemic care. Additionally, they face loneliness and hopelessness while caring COVID-19 patient care for a long time without proper rest. They are also at risk of a potential career infection at home, which turns them into anger, anxiety, and insomnia (Nagesh& Chakraborty., 2020).

The pandemic has altered the routines of people for food, sleep, and physical activity. These components have led to variations in sleep habits (Kumar et al., 2021). The workload on health-care workers during pandemic includes exhausting shifts, a long-established shortage of health-care workers, and negative outcomes such as lower job satisfaction, burnout, and intent to leave the job. The infection controls protocols to minimize

transmission risk to others require health-care workers to stay in isolation during their COVID-19 posting, moreover making them feel hopeless and anxious. Additionally to routine schedule, health-care workers spend hours each day donning and doffing protective gear, further increasing stress among health-care workers and making them tired. Sleep is a very vital aspect of good mental health and is considerably adjustable. Disrupted sleep patterns and sleep quality have been associated with psychological symptoms such as anxiety, stress, and depression (Ben Simon et al., 2020).

According to nurses' and physicians' reactions to the current pandemic, the most salient sources of stress were lack of sleep, anxiety, and safety concerns. Shifting our concerns to the evidence reported from many researchers, there is a rareness of research work over the effect of COVID pandemic over nurse's, physicians" sleep and stress (Kumar et al., 2021).

Effect of COVID-19 pandemic over nurse's and physician's well-being also partially or fully impacts over their caring of family and family responsibilities. Understanding the extent of the relationship between sleep and stress is important as sleep is a modifiable behavior. The finding of the study may help authorities to counter the impact of the pandemic on nurses and physicians, and prepare preventive strategies.

Aim of the study:

Examine the relationship between working in COVID pandemic and sleep disturbance with stress and anxiety in nurses working in COVID care unit

Materials and method:

Design:

A cross-sectional study design was used in this present study.

Subject:

A total of 310 health care workers (200 nurses- 110 physicians) were enrolled in the study using the purposive sampling technique at Makkah tertiary hospitals.

Data collection:

The electronic structured questionnaire was validated by five experts from different specialties and had excellent reliability (r = 0.878). Research tools consist of a questionnaire related to sociodemographic variables, related to sleep disturbance and patient health questionnaire-9 (PHQ-9) scale (Molebatsi et al., 2020) to assess anxiety among participants. PHQ-9 scale is a 9-items standardized Likert scale used to assess the level of anxiety and stress. For each item, the score ranges from 1 to 4 where 1 means not at all and 4 means nearly every day. The total score ranges from 9 to 36. The higher the score, the higher is the level of stress.

Health-care workers who were nurses and physicians who were posted for COVID-19 duties belonging to the age group from 20 to 50 years and do not have any chronic comorbidity were included. Health-care workers who were posted in the COVID area and doing shift duties for 6 h each day for a week continuously and were allowed to take 2 days off after 1-week duty.

After taking consent from the participants, the e-survey was sent via mail, WhatsApp, and completely filled questionnaire received back from 310 participants during January to April 2020.

Ethical approval was obtained. Written informed consent was also obtained from each study participant. Each participant's confidentiality and anonymity were maintained during the whole study.

Data analysis was done using SPSS version 21.0. Frequency, percentage, and mean were calculated to assess sleep patterns and its disturbance among health-care workers.

Results:

The mean age of health-care workers was 26.3 years (SD = 6.3). Most of them were female (81%), and married (71%), out of which only 11% of the spouses belonged to the medical profession and only a few (22%) had children also, whose age was more than 5 years (60%). The majority did not have a previous history of sleep disturbance (85%). Out of them, the majority took a complete vaccine for COVID-19 (56%). Only a few (15%) reported that they preferred hospitals to provide accommodation for quarantine during the COVID-19 posting. The majority of participants (85%) were never infected with COVID, and they were provided with adequate personal protective equipment (PPEs) (46%).

Table 1 showed that Forty-four percent of participant's were getting 6–8 h of sleep at night. The majority (91%) were not taking any therapy for sleep disturbances, Half of the participants said that they faced some difficulties due to their sleep problems .

Variables	Options	Percentage
Duration of quality sleep at night	<4 h	08
	4-6 h	39
	6-8 h	44
	Over 8 h	11
Since the pandemic began, have you visited therapist related to sleep disturbance?	Yes	11
	No	89
If yes, how often you took medicine (**n**=29)	Not on medication	91
	Once per week	65
	Once or twice per week	24
	Three or more times per week	10
How difficult is for you to do your work due to your sleep problems?	Not difficult	40
	Somewhat difficult	50
	Very difficult	08
	Extremely difficult	02

Table II: sleep quality of participants:

Table II explained that (40%) of participants stated that there was no change in sleeping hours during the COVID-19 pandemic. Where 25% were unable to sleep at night, one-third (30%) of participants said that they never wake up often during the night. Where 31% agree that their sleep pattern interferes with working in the COVID pandemic and that they get up only once (45%) at night to urinate, they were taking rest (51%) on an average working day also, and they were satisfied (35%) with their current sleep pattern.

| Variables	Sleeping hours decreased very much	Sleeping hours decreased	No change	Sleeping hours increased	Sleeping hours increased very much
Change in sleep pattern	(07)	(32)	(40)	(18)	(07)
	Strongly agree	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
Not able to sleep at night	(19)	(25)	(27)	(28)	1
Not able to sleep due to fear of COVID infection	(15)	(24)	(35)	(23)	2
	Always	**Very frequently**	**Occasionally**	**Rarely**	**Never**
Since COVID pandemic, I wake up often during night	(11)	(11)	(22)	(26)	(30)
	Very much interfering	**Much interfering**	**Some-what interfering**	**A little interfering**	**Not at all interfering**
My sleep pattern has interfered my daily functioning	(07)	(13)	(21)	(30)	(31)
	More than 3 times	**Three times**	**Two times**	**One time**	**None**
I get up at night to urinate	(05)	(05)	(21)	(45)	(24)
I take rest periods in an average working day	(03)	(05)	(16)	(51)	(25)
	Very dissatisfy	**Dissatisfy**	**Neutral**	**Satisfy**	**Very satisfy**
Satisfaction level with your current sleep pattern	(03)	(18)	(30)	(35)	(14)

Table III: level of stress among participants:

This table concerns the level of stress among participants and showed that the majority of participants were not at all feeling any pleasure (46%) in doing things, not feeling down or hopeless (42%), not having trouble falling or staying asleep (45%), not having a poor appetite (49%), not feeling bad about yourself (60%), not having any trouble concentrating on things

(50%), not speaking slowly (60%), and not thinking that you would be better off dead, or that you (65%). Forty percent of participants agreed that for several days they had been feeling tired or had little energy. So the overall stress scores of participants were 15.4.

Stress	Not at all	Several days	More than half of days	Nearly every day
Little pleasure in doing thing	(46)	(32)	(17)	(05)
Feeling down or depressed	(42)	(39)	(14)	(05)
Trouble falling asleep	(45)	(35)	(14)	(06)
Feeling tired	(33)	(40)	(20)	(07)
Poor appetite	(49)	(32)	(12)	(07)
Feeling bad about yourself or your family	(60)	(27)	(09)	(04)
Trouble concentrating on things	(50)	(28)	(17)	(05)
Moving or speaking so slowly	(60)	(30)	(07)	(03)
Thoughts of you would be better off dead	(65)	(25)	(07)	(03)
Stress level (9-36)	Mean±SD	15.4±5.2		

Overall, the majority of participants' feel stressed due to the risk of transferring COVID-19 infection to their family
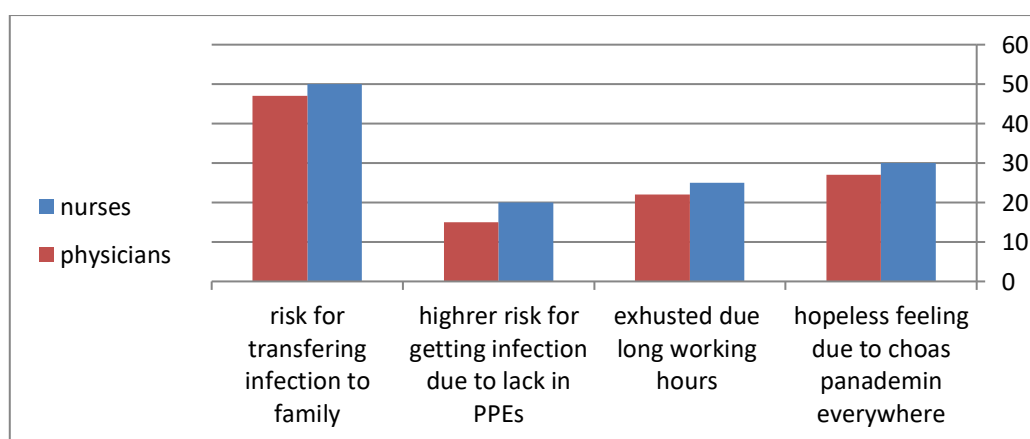
Figure I: Factor responsible for stress among health-care workers :

Discussion

In the present study, health care workers (nurses and physicians) who were doing shift duties in COVID-19-positive areas were included. Previously reported evidence showed that nurses are bound to work long shifts of hours than physicians to ensure an uninterrupted flow of patients (Kumar et al., 2021).However, circadian misalignment occurs in health-care workers, which recover within after few days after returning to the normal schedule (Zhang et al., 2014). Furthermore, during the COVID-19 pandemic, everyday policy changes by hospital authorities and absence of clear-cut guidelines for case management protocols have resulted in adding anxiety and stress among health-care workers (Wong et al., 2012;

Altevogt& Colten., 2006). This disruption in circadian causes hormonal disturbance which further leads to an increased risk of metabolic syndromes, that is, obesity, a cardiovascular, and metabolic disease which finally result in accelerated cellular senescence and aging too (Wong et al., 2012).

According to our study results, stress is the primary cause of insomnia (Kumar et al., 2022). It mainly triggers internal or external burdens that may be a perceived threat for an individual. In response to these burdens, the body counteracts complex physiological and behavioral responses to maintain optimal equilibrium in the body. Extra ordinary situation of COVID-19 required close monitoring for patient, extra safety precautions, and protective gears to be wear by health-care providers and stressful environment due to impactable mortalities in intensive care units affected negatively who are already facing challenging tasks of working with a handful of resources (Nagesh & Chakraborty., 2020). Many researchers have found stress a major cause of sleep disturbances in health-care workers (Vasantha Kalyani & PM., 2021).Another study from China also reported that over one-third (36%) of total study participants experienced insomnia since COVID pandemic (Hall et al., 2000).

Another study from western China on health-care workers during the COVID-19 pandemic observes that there was a high prevalence of negative emotions and stress including poor sleep quality (Yue et al., 2021). Where a study conducted at Oman by Badahdah *et al.* 2020 who examine sleep quality among physicians and nurses posted in COVID-19-positive patient units reportedly, one-third of them (36%) experienced insomnia since COVID-19 pandemic.

A contemporary survey study on 1119 health-care workers in the USA examines sleep disturbance during the COVID pandemic which informed that 70% of health-care workers had difficulty in sleeping during the COVID-19 pandemic (De Kock et al., 2021). The quickly growing COVID-19 pandemic is persuading stress. The sudden and unanticipated disconnection of social interactions and the upset to daily routines have significantly impacted people's sense of security and comfort. The study reported increase in sleeping medicine utilization, from 8.2% to 10% during post-COVID-19 pandemic emergent (Johnson et al., 2021).

In the present study, the finding suggested that health-care workers were stressed about COVID-19 infection and they shared their personal experiences of stress with COVID-19 pandemics. The study reported that the prevalence of mental and psychological symptoms among health-care workers during the COVID-19 pandemic was more severe compared to previous pandemics reported (De Kock et al., 2021).Evidences from previous pandemic and infectious disease outbreaks also indicate negative impact over sleep and mental health of caregivers. In a study from one of the most fatal breakouts of SARS, with more than 8000 cases around the world, also a significant number of health-care workers reported a higher prevalence of stress among health-care workers working with SARS patients directly as compared to those who were not working with these patients, who were also suffering from sleep disturbance, fatigue, and anxiety (LeDuc & Barry., 2004). Another research study also reported that the SARS outbreak has a psychological impact on health-care workers and found sleep disturbances among (28.4%) health-care workers (Preti et al., 2020).

Nurses over physicians; are around one-third of the total health-care workers in any country (Altevogt, & Colten., 2006).As a front-runner health-care worker, nurses are playing crucial role and at higher risk of getting infected while providing care and other direct patient care activities (Simonetti, et al., 2021).

In the present study, findings suggest that health-care workers were moderately stressed during this COVID-19 pandemic. The current situation of the COVID-19 pandemic, where health care workers feel powerless, consequently results in frustration. The increased incidence of anxiety, depression, aggression, and burnout can affect their sleep quality too (Pappa et al., 2020).

Health care workers can use some common strategies to minimize the effect of the COVID pandemic on their well-being such as discussion with colleagues and expressing feelings and emotions who are going through similar experiences can lower stress and nurses can feel light-hearted. Being positive is sometimes the only choice than intervention like tele-motivation workshops and group sessions by a psychologist can help nurses to find support. Promote physical activities like regular exercise, yoga, and meditation. Encourage recreational activities like watching online movies and reading books. Should avoid overconsumption of coffee, smoking, or alcoholic drinks and stay well hydrated to mitigate stress.

Conclusion

Definitely, sleep is a key indicator of health. Good sleep quality helps them to give better work output. These study findings highlight the importance of easing the working environment and conditions in health-care institutions for COVID-19 warriors, specifically toward nurses and physicians, who are prime victims of suffering from anxiety and sleep disorders.

The study results are indicating the impact of working in the COVID pandemic on nurses' and physicians sleep and their mental health. The current pandemic has exposed nurses' working conditions that alarm their compromised physical and mental health. Accepting that the pandemic war is going to be long, nurses are using the coping mechanism to avoid stress and living in the reality of new normal likely behind non-significance between sleep disturbance, stress, and pandemic.

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