Original Article

Insomnia among COVID-19 survivors in a Tertiary care center

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Abstract

Introduction: The outbreak of this COVID-19 Pandemic has not only possessed physical threats but also a psychological threat as well. Several studies have reported impacts of COVID-19 on sleep and different domains of quality of life. However, in context of Nepal very few studied has been conducted to examine the relationship of COVID -19 infection and sleep problem. Hence, the need is felt to carry out this study to find the overall prevalence, pattern of sleep disorder among post covid-19 survivors.

Methods: Hospital based descriptive, cross-sectional study was conducted from May 2022 to August 2022 among 303 post Covid infected Health Care Workers (HCWs) of , who were fully recovered. The written informed consent was taken. Data were collected using structured Performa. For the diagnosis of insomnia Athena's Insomnia Scale (AIS) was used. All the collected data were analyzed by statistical Package for the social Sciences (SPSS) version 16.

Results: 303 patients were included in the current study. Majority of the patients were in the age group of 18-30 years (n=227, 74.9%) Most of the subjects were Female (n=171, 56.4%) Unmarried (n=290, 69.0%), Brahmin (n=115, 38.0%) by caste and Hindu (n=250, 82.5%) by religion. 40.3 % had Insomnia. Among them 27.1 % had Mild Insomnia, 12.5 % had Moderate Insomnia and 0.7% had Severe Insomnia.

Conclusion: Based on the results, we found COVID -19 recovered Health care workers had high rate of Insomnia. It is typically mild but possibly requires treatment and longitudinal follow up. This indicated that we need to pay more attention to their sleep conditions.

Keywords: COVID-19 survivors, Insomnia

Introduction

A novel coronavirus disease (COVID- 19) which was first detected in Wuhan, China in December 2019 rapidly spread across the globe affecting millions of people and the outbreak of COVID-19 as a Public Health Emergency of international concern was declared by World Health Organization (WHO) on 30 January 2020. According to WHO as of July 22, 2021, there have been 1, 91,773,590 confirmed cases of COVID-19, including 4,127,963 deaths.[1] In context of Nepal first Case of COVID-19 was detected on 13 January 2019 since then the case has been increasing. The outbreak of this Pandemic has not only possess a physical threats but also a psychological threat as well due to various reasons such as rapid transmission, high mortality, lack of effective treatment, social isolation. Different surveys

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conducted in various countries have reported high rate of sleep problems, anxiety and depression in both health care workers and general population. When it comes to health care workers due to their job demands and as they are in frequent contact with the patients there is a high chance of undergoing high level of stress leading to sleep problems. [2,3,4]

As we know sleep plays a crucial role on regulation of psychological and physical processes. Poor sleep and sleep disturbance could interact with psychological and physical disorders which worsen health consequences among populations. Several studies have reported impacts of COVID-19 on sleep and different domains of quality of life. [5,6]

However, in context of Nepal very few studied has been conducted to examine the relationship of COVID -19 infection and sleep problem. Hence, the need is felt to carry out this study to find the overall prevalence, pattern of sleep disorder among post covid-19 survivors.

Methods

Hospital based descriptive, cross-sectional study was conducted from May 2022 to August 2022 among 303 post covid infected Health Care Workers (HCWs) of KIST Medical College Hospital who were fully recovered. The study was conducted after receiving ethical approval from the Institutional review committee (Registration number 078/079/69). The study populations were Health Care Workers including doctors, nurses, interns, resident doctors, paramedics (health assistants, lab technician and pharmacists). All the HCWs who were tested positive for COVID-19 with Polymerase Chain Reaction (PCR) and gave consent were enrolled in the study. Those who had History of psychiatric illness and did not give written consent were excluded from the study.

By using the following formula we calculated the sample size.

$$\text{Sample size} = \frac{Z_{1-\alpha/2}^{2}\, p(1-p)}{d^2}$$

Where, Zα/2(standard normal variate) at 95%confidence level=1.96

P= prevalence of insomnia in Covid 19 patients = 26% (Fei Xu et al 2021)

d= precision of the estimate = 5%

Estimated minimum sample size= 296

The data was retrieved from hospital database. Data were collected after informing the participants regarding the aims and objectives of the study. The written informed consent was taken. Data were collected using structured Performa that includes demographic profiles, duration of illness (COVID). For the diagnosis of insomnia Athena's Insomnia Scale (AIS) was used. This scale contain 8 questions including 1)sleep induction, 2) awakenings during the night, 3) final awakening earlier than desired 4)total sleep duration 5)overall quality of sleep 6)sense of well-being during day 7)functioning (physical and mental) during the day 8) sleepiness during the day.

Each question was given a scale from 0-3 to rate each item, with o representing "no problem"and 3 representing "very serious problem". The total score is 24. A score of 6 or > is labelled as having insomnia.

Severity categories:

No insomnia: 0-5

Mild insomnia:6-9

Moderate insomnia: 10-15

Severe insomnia:16-24

All the collected data were analyzed by statistical Package for the social Sciences (SPSS) version 16 using appropriate statistical tools.

Result

A total of 303 patients were included. Majority of the patients were in the age group of 18-30 years (n=227, 74.9%) followed by the age group of 31-40 years (n=41, 13.5%). Most of the subjects were Female (n=171, 56.4%) Unmarried (n=290, 69.0%), Brahmin (n=115, 38.0%) by caste and Hindu (n=250, 82.5%) by religion.

Table 1: Distribution of subjects according to Socio-Demographic characteristics (n=303)

Characteristics	Category	Frequency	Percent (%)
Age	18-30	227	74.9
	31-40	41	13.5
	41-50	19	6.3
	51-60	10	3.3
	>60	5	2.0
Sex	Male	132	43.6
	Female	171	56.4
Caste	Chhetri	84	27.7
	Brahmin	115	38.0
	Newar	81	26.7
	Kirat	20	6.6
	Tamang	3	1.0
Religion	Hindu	250	82.5
	Buddhist	35	11.6
	Christian	4	1.3
	Kirat	11	3.6
	Muslim	3	1.0
Marital status	Married	90	29.7
	Unmarried	290	69.0
	Divorced	4	1.3

Duration of illness of majority (72.6) of the subjects was

short and most of them sought treatment at home.

Table 2: Distribution of subjects by Clinical Characteristics (n=303)

Characteristics	Category	Frequency	Percent (%)
Duration of illness	<7 days >7 days	220 83	72.6 27.39
Treatment	Hospitalization Home	31 272	10.2 89.8

Out of 303 participants 122 (40.3 %) had Insomnia. Among them 27.1 % had Mild insomnia, 12.5 % had Moderate insomnia and 0.7% has Severe insomnia.

Table 3: Distribution of subjects by severity of diagnosis (n= 03)

Characteristics	Category	Frequency	Percent (%)
Insomnia score	No insomnia Mild Moderate Severe	181 82 38 2	59.7 27.1 12.5 0.7

Discussion

Overall findings from this study provide some descriptive insight into prevalence of insomnia among the post covid infected Health Care Workers (HCWs) of Kist Medical College Teaching Hospital. To the best of my knowledge, the current study is among the very few studies being conducted to examine the relationship of COVID -19 infection and sleep problems in Health care workers.

In our study most of the subjects belong to the age group of 18-30 (74.9%) followed by age group of the age group of 31-40 years (13.5%). Female subjects outnumbered male. This finding keeps parallel with the findings from India and China, where 53.7 % and 67.55 % were female respectively. [7, 8] However, this finding is not consistent with the findings from the other studies from Asia and America where majority of subjects were male.[9,10]

The ethnicity distribution of this study had revealed that the most predominant caste was Brahmin followed by Chhetri and were unmarried Hindu by religion.

We are aware that since the emergence of COVID-19 pandemic, there have been significant impacts of COVID-19 in terms of physical as well as mental wellbeing not only in short term but also in long term post recovery period. There are various mental health issues observed in post recovery period. Among them sleep related issues were commonly reported during active as well as post recovery period.

Our study revealed that forty percent participants had Insomnia with majority of them having mild to moderate (27.1 % -12.5 %) insomnia respectively. This study keeps parallel with the recent meta- analysis exploring the sleep problems in different group of population, where 36.0% health care workers had sleep problems.[11] Another systemic review and meta analysis also support our findings with similar prevalence.[12]

However, our study is not consistent with the study conducted from China where 63.12% of the subjects had Insomnia. Among them 35.82% had sub threshold symptoms, 20.57 % had moderate symptoms and 6.74 % had severe symptoms.[13] Similarly an observational studies conducted among subjects from 39 countries revealed that 31% of health care workers, 18% of general population and 57% of covid-19 infected patients had sleep related problems and sleep problems were associated with depression.[8] Another study from India also showed lower prevalence of insomnia than our study.[14] The reason for differences in the findings could be due to differences in study population and the scales used. In our study we used Athena's Insomnia scale whereas above mentioned studies had used Insomnia Severity Index. Insomnia among COVID-19 subjects might be due to the stress associated with infection.

Limitations

Few limitations of the current study include:1. The sample size is small as our study confined on Heath care Workers of one medical center only, limiting the ability to generalize the result to the general population. 2. This study did not examine the cause and effect.3. Our study did not differentiate the time frame of the post infection period.

Conclusion

Insomnia can occur after recovery of COVID-19 infection. Based on the results, we found COVID -19 recovered Health care workers had high rate of Insomnia (40.3%). It is typically mild but to avoid its debilitating effects, adequate treatment and longitudinal follow up are needed. This indicate that we need to pay more attention to their sleep conditions. Further research is needed to understand the gravity of Insomnia among post COVID-19 infected subjects in large scale including different populations.

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