

Assessment of Sleep during COVID-19 Pandemic among General Population of India

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ABSTRACT

Background- COVID-19 has a serious impact on the physical and mental health of the public. In addition to the Poor sleep quality affect the body and lead to poor diet, obesity, stunted growth, mental health issues, reduce productivity and also lead to substance abuse.

Aim- The aim of the study is to assess the sleep quality during Pandemic among general population of India.

Methodology- It was an online survey which was conducted using Google Forms during 3rd lockdown in India. A Snowball sampling technique was used to collect the samples from different state and union territory of India. Total 829 participants respond and data was collected by using demographic variable and Pittsburgh sleep quality index.

Result- The mean of Pittsburgh sleep quality index total score was 1.33 (standard deviation = 0.47). Majority of the participant 551(66.5%) were having good sleep quality and less than half were having poor quality of sleep 278(33.5%). Most of the Participant in the study was female (54%), graduate (51%), age between 18-28 (60%) and Hindu (89.3%).

Conclusion- Sleep is important component to be health and work effectively know the factors affect the quality of sleep helps us to plan how to reduce it during pandemic.

Keywords

Sleep quality, Covid-19, general population

INTRODUCTION

India, the second most populated country in the world reported the first confirmed case of the coronavirus infection on 30 January 2020 in the state of Kerala, the affected had a travel history from Wuhan, China.ⁱ The novel coronavirus (COVID-19) has imposed dramatic changes to daily living including economic and health impacts. The pandemic has changed much about our lifestyle in the last few months includes our sleeping patterns. Isolation, quarantine, loss of work, economic and health worries, and disruption to your work, school, and home life can increase stress, anxiety, and depression these turn destruction in quality of sleep.ⁱⁱ One of the major impacted of this is in sleep-health in many ways. It has been shown that there is an increase number of patients or subjects with sleep problems.ⁱⁱⁱ Sleep quality is a key indicator of health and mental peace and good sleep quality is measured by how quickly you fall asleep (ideal is 15-20 minutes), the ability to stay asleep (waking just once per night) and spending most of your time in bed asleep rather than awake.^{iv} Majorly two things have changed in the sleep patterns for Indians after lockdown, firstly, they are sleeping late than usual due to that they faced poor quality of sleep and secondly, this also leads to poor functioning during the day, not being productive, feeling lethargic and low¹ Sleep is critical to physical health and effective functioning of the immune system. It's also a key promoter of emotional wellness and mental health, helping to beat back stress, depression, and anxiety. Millions of people suffered from insomnia before the

coronavirus, and unfortunately, the pandemic creates a host of new challenges even for people who previously had no sleeping problems.^v A study conducted by Li et al. that the prevalence of insomnia increased significantly during the COVID-19 outbreak (in some cases new onsets of insomnia), that time in bed (TIB) and total sleep time (TST) increased, and that sleep efficiency significantly decreased.^{vi}

If the differences in sleep timing and duration between work days and days off become too large, this can lead to “social jetlag”.^{vii} Sleep disturbances are also associated with anxiety, depression, and suicidal behavior and many more mental distresses. Sleep abnormalities are a stand-alone risk factor for many psychiatric illness^{viii}

The novel coronavirus (also known as COVID-19) has brought in unpredictable future. Sleep, which is directly related to health and quality of life, is a basic need for a human being to continue his bio-psycho-social and cultural functions.^{ix}

With the lockdown impacting our lifestyles, about 67 per cent of people in India are now sleeping after 11 pm. Even otherwise, a 2018 study found that about 53 per cent of Indians sleep late at night after scrolling through social media, while 18 per cent revealed that work or finance-related issues kept them awake at night^x

A lack of quality sleep can also make you moody and irritable, exacerbate symptoms of anxiety and depression, and even lower your immune system. Very few studies have concentrated on the sleep quality of general population of India during pandemic events, especially in the outbreak of COVID-19. Therefore, the current study was designed to examine the sleep quality of healthcare workers in the confrontation with COVID-19

MATERIALS AND METHODS

This was a cross-sectional, observational study carried out in general population of India during 8th May to 19th May 2020. A Snowball sampling technique was used to collect the samples and 829 participants enrolled in the study from different states. An online questionnaire was developed by using Google forms for the participants. The link was forwarded to people a part from the first point of contact and soon. A set of several questions related to demographic variable and Sleep Quality. Participants with access to the internet and age should be 18 years and more, able to understand English and willing to give informed consent were included. The data collection was initiated on 11th May 2020 at 4 PM IST and closed on 17th May 2020 at 4PM IST.

Data Collection Tools

The online self-reported questionnaire tool was validated by 5 Experts. The survey included demographic questions (i.e which State belongs to in India, age, gender, marital status, Educational status, occupation, religion, number of members in the family, family Income, place of stay, occupation, are you suffering from any health problem and During lockdown period time spent in watching news related to coronavirus (COVID-19) and the Pittsburgh Sleep Quality Index (PSQI), a clinical instrument that measures sleep quality. The PSQI was developed in order to assess an array of sleep disturbances that might affect sleep quality. The PSQI is a self-rated instrument that measures sleep habits for one month. The index is comprised of 19 items, which are combined to form 7 component scores: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and day time dysfunction. Subjective sleep quality refers to how a person would self-rate his/her sleep quality overall on a scale of “very good” to “very bad.” Sleep latency is a measure of how long it takes for the

person to fall asleep. Each component score has a range of 0 (no difficulty) to 3 (severe difficulty). The 7 component scores are added to yield a global score, which ranges from 0 to 21. A global score less than or equal to 5 indicates good sleep, whereas a score greater than 5 indicates poor sleep.

RESULT

Statistical analysis Descriptive analysis was used in terms of mean and standard deviation with range for continuous variables and frequency with percentage for ordinal and nominal variables. Mean and standard deviation have been used to estimate the results of the study. All analyses were done with the help of SPSS Version 20.

The participants belong to 27 states or union territories of India. Majority of the participant belongs to Delhi (25.9%) followed by Haryana (23.6%), Uttarakhand (11.1%), Uttar Pradesh (7.7%)

Most of representative were belongs to the age 18-28 years (60%), Female (54%), Single (60%), educational qualification graduate (51%), 4-6 members in the family (66%), Family income 30,000-60,000 (30%), students (37%), suffering from no health problems (93.6%) and during lock down period time spent in watching news related to corona (COVID-19) on mobile, laptop, television etc is mostly 1-3 hours (81.7%).

The sleep quality among general population of India it shows that half of the participant were having good sleep quality 551(66.5%) and less than half were having poor quality of sleep 278(33.5%) during COVID-19 Pandemic shown in figure 1.

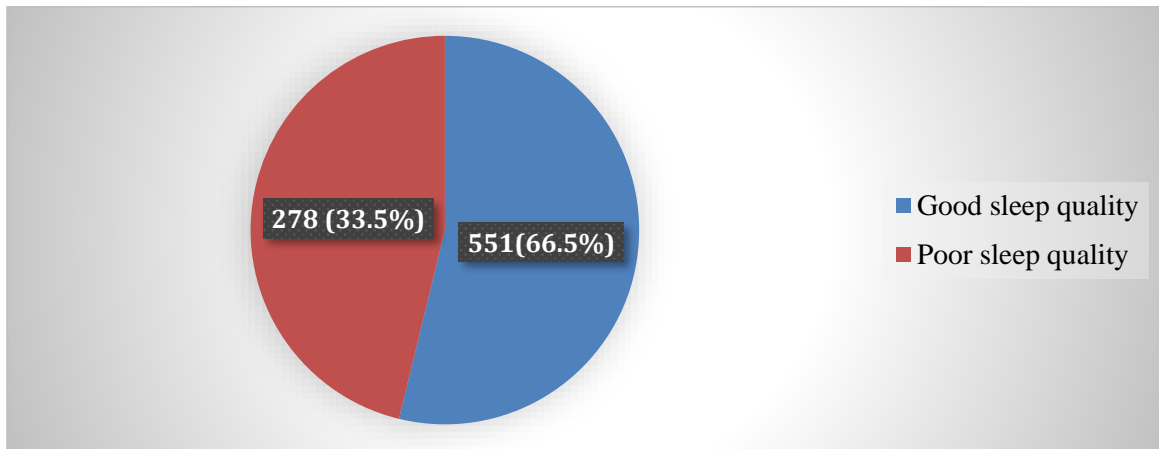


Figure 1- Pie Chart showing sleep quality among General population of India

The total PSQI average of the general population in India is calculated as 1.33 ± 0.47 and the internal component score averages are given below: subjective sleep quality 0.54 ± 0.80 , sleep latency 0.62 ± 0.85 , sleep duration 0.83 ± 0.92 , habitual sleep activity 0.62 ± 0.88 , sleep disturbances 0.52 ± 0.86 , use of sleep medication 0.82 ± 0.95 and daytime sleep 1.46 ± 0.91 (Table 1)

Table 1-PSQI total and internal component score averages of the sample

Component Of PSQI	Mean \pm SD
Subjective sleep quality	0.54 ± 0.80
Sleep latency	0.62 ± 0.85
Sleep duration	0.83 ± 0.92

Habitual sleep efficiency	0.62 ±0.88
Sleep disturbances	0.52 ±0.86
Use of sleep Medication	0.82 ±0.95
Daytime dysfunction	0.72 ± 0.91
Total PSQI	1.33 ± 0.47

DISCUSSION

In this cross-sectional study we assessed the sleep quality during pandemic. Disturbed sleeping habit and use of sleeping medication have damage physical and mental health of the individual. Sleep has many benefits: it improves memory, promotes emotional stability and reboots cellular metabolism. But going to sleep late at night, even if you complete the recommended hours, may not have the desired positive effects on your body.

In present study majority of the participant were female 445(54%) age between 18-28 were 502(60%). In addition, we assessed the average time participants spent focusing on the COVID-19 outbreak each day and majority of the people watch news related to corona (COVID-19) on mobile, laptop, tv etc were 1-3 hours, in our study 1/5 of the participant had poor sleep and faced sleep problem this finding similar with the finding of the study conducted by Huang Y et. al where majority of the people were female 3952 (54.6%), age more than 35 years and watch news related to COVID-19 more than or equal to 3hours 3155 (43.6%), nearly 1/5 participants had sleep problem.^{xi}

Our finding of a 33.5% prevalence of poor sleepers was smaller than that found by Lund et al5 (60%)^{xii} the present study maximum number of participants was having good sleep quality (53.80%) and less than half participant was having Poor sleep quality (33.5%) this finding is contracts with the finding done on medical student by JOHNS MW et al where the prevalence of poor sleep quality (76%) and in both the study maximum number of participants were graduate students.^{xiii}

The Mean and SD of PSQI is 1.33 ± 0.47 find less than study conducted by mean PSQI for the entire sample was 7.0 ± 3.3. The findings translate to that 75% of healthcare workers had poor sleep quality^{xiv}

In the present study the subjective sleep quality of the participant was very good 504(60.8%), Fairly good 238 (28.7%), fairly bad 48 (5.8%), very bad 39 (4.7%) and in case of use of medication in present study 435(52.5%)not used any sleeping medication, 256 (30.9%), 75(9.0%), 63 (7.6%) where used once, twice and three or more times a week respectively this finding similar with the finding of the study conducted by Dubey M. et al where majority of the participant where had good 227(41.3%), Fairly good 318(57.8%), fairly bad 4 (0.7%), very bad 1(0.2%)^{xv}

CONCLUSION

Sleep Quality in general population is also affected in the lockdown due to different reasons, so effective interventions are needed which may be helpful in managing sleep quality and to maintain daytime productivity.

LIMITATION

The study is limited to the people who had Internet to access to fill the form and the ability to Understand and read English. This represents the educated population of the India, so it should

not be generalized to the whole population. The sleep quality in uneducated people and those who are not able to access internet may differ from the findings of our study.

Conflict of Interest:

NIL

Funding Sources:

NIL

Ethical approval:

The ethical clearance was obtained from the principle of nursing institutes to conduct the study and the study was carried out in accordance with the guidelines laid by Indian Council of Medical Research ICMR (2017). The consent was collected from the participant. The purpose for carrying out research project was explained and assurance of confidentiality was given to the participants.

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