

COVID-19 Anxiety and Quality of Sleep among Employees of a Nursing Campus and Their Spouses

Shobha Laxmi Bajracharya¹, Priscilla Samson², Sarala K.C.³, Khagi Maya Pun⁴

¹Associate Professor, Patan Academy of Health Sciences, School of Nursing and Midwifery, Lalitpur Nursing Campus, Sanepa, Lalitpur, Nepal.

²Associate Professor, ³Nursing Dean, ⁴Assistant Nursing Dean, Lalitpur Nursing Campus, Sanepa, Lalitpur, Nepal.

Corresponding Author: Shobha Laxmi Bajracharya

ABSTRACT

Introduction: Corona Virus Disease 2019 (COVID-19) is highly contagious, has spread across the world rapidly and has taken many lives. All these have created a lot of concern for people leading to heightened levels of anxiety as a common response to this dreadful situation. It not only has affected physically but psychologically as well including sleep quality. This study aimed to assess employees and their spouses' level of anxiety and sleep quality.

Methods: A cross sectional study was conducted to find out level of anxiety and quality of sleep among employees and their spouses in Nepal during COVID-19 pandemic from June 14, 2020, to July 4, 2020. Web based Google forms and printed questionnaire were used to collect data as required. Total enumerative sampling technique was used where 128 responses were received. Data were analyzed using descriptive statistics and inferential statistics. P value was significant at 0.05. Ethical approval was obtained from Institutional Review Committee of Patan Academy of Health Sciences.

Results: The overall prevalence of COVID-19 dysfunctional anxiety was 1.6% and poor quality sleep was 39.1%. There was no significant association of age, gender and status of respondents with quality of sleep at 95% of significance level (p-value=.089, .887, .964 respectively).

Conclusion: From findings of the study, it is concluded that though only few respondents had dysfunctional covid-19 anxiety, about two fifth respondents had poor quality of sleep. Therefore, poor quality sleep could be addressed, and counselling could be performed on time.

Keywords: COVID-19 anxiety, employee, sleep quality, spouse

INTRODUCTION

A novel Corona Virus Disease (COVID-19 also known as 2019-n-CoV) was first reported in Wuhan, China in December 2019. As of May 27, 2021, there were 169,115,426 total cases of COVID-19 with 3,513,361 deaths worldwide and 542,256 total cases with 6915 deaths and in Nepal.^[1] Since the spread of COVID-19 across the world has become one of the central health issues of the generation, it has brought extraordinary efforts to establish the practice of physical distancing, abruptly changed in usual patterns of functioning and daily life of people.^[2,3] As COVID-19

occurs suddenly and is highly contagious, media has been reporting continuously about the pandemic situation throughout the world, creating lot of concern for and preoccupation with COVID-19, people are leading to heightened levels of anxiety which impacts quality of sleep as well.^[4,5] As it is critical to mitigate the spread of the disease, it undoubtedly has consequences for mental health and well-being in both the short term and long term. [1] Poor sleep leads to impairment in attention and memory, increases irritability and emotional instability which lead to anxiety, depression and even suicide.^[6]

A web-based explorative study conducted among 3055 general adult population of Spain on psychological impact and associated factors during the initial stage of COVID-19 revealed that the anxiety level was 25% with young people and women being more prevalent. Those who lost their job during the health crisis showed strongest negative psychological symptoms.^[7] A web-based cross-sectional survey conducted among 7,236 participants during COVID-19 outbreak in China showed that the overall prevalence of generalized anxiety disorder (GAD) was 35.1% and poor sleep quality was 18.2%. Young people (age < 35 years) reported a significantly higher prevalence of GAD symptoms than older people. Healthcare workers were more likely to have poor sleep quality than other professionals.^[8] An online based cross-sectional study among 1,427 respondents regarding the impact of COVID-19 pandemic on the mental health of the adult population in Bangladesh showed the prevalence of anxiety symptoms was 33.7%.^[9]

An online social media-based survey conducted among 206 Nepalese residents revealed 16.5% of the respondents had moderate level insomnia and 1% had severe level of insomnia.^[10] An online cross-sectional survey conducted among the general population of Nepal during COVID-19 pandemic showed that out of 349 participants, 31% had anxiety. Females, those living alone, health professionals and those who spent more time in accessing information about COVID-19 were significantly more likely to have anxiety.^[11]

Most studies conducted during COVID-19 pandemic worldwide reveals that participants experienced high prevalence of anxiety and moderate level of sleep quality. Thus, this study aimed to analyse COVID-19 anxiety, quality of sleep and their associated factors during covid-19 pandemic among employees and their spouses of a nursing campus.

MATERIALS AND METHODS

This was a cross-sectional analytical study carried out among currently working employees of a nursing campus and their spouses at Patan Academy of Health Sciences, School of Nursing and Midwifery, Lalitpur Nursing Campus, Sanepa, Lalitpur, Nepal. A total enumerative sampling technique was used for study. There were 45 academic and 27 administrative employees during data collection period and 60 spouses belonged to them. Therefore, total 72 employees and 60 spouses were approached for the study. Among them 94 were sent through Google form, 28 were given printed form and 10 were face to face interviewed who could not read and write. Out of them 92 Google form responses and 26 printed form responses were received. Therefore, 132 participants were approached for the study and 128 responded.

Data collection instrument used for this study was consisted of three parts:

Part- I consisted of self-developed structured questionnaire to assess socio-demographic characteristics that included age, gender, status of respondents (employee or spouse) and type of work for employees and occupation for the spouses.

Part- II consisted of Corona-Virus Anxiety Scale (CAS),^[12] which was used to find out COVID-19 related anxiety among the respondents. CAS is a brief mental health screener that health professionals and researchers can readily use to identify probable cases of dysfunctional anxiety associated with the Corona virus. The scale demonstrated high reliability with Cronbach alpha level of 0.93. The CAS discriminates well between persons with and without dysfunctional anxiety. The CAS is placed in the public domain to encourage its use in clinical assessment and research. No formal permission is therefore required for its reproduction and use by others. This tool is a 5-item scale; each item captures a unique manifestation of the particular form of anxiety. Each item rates on a 5-point Likert scale to reflect the frequency of the symptom, ranging from 0 (not at all) to 4

(nearly every day) over the preceding two weeks.

Part- III was consisted of Pittsburgh Sleep Quality Index (PSQI) [13] was used to find out the quality of sleep of the respondents. It is an effective instrument used to measure the quality of sleep among adults over a period of last one month. The overall PSQI global score correlation coefficient for test-retest reliability was .87. [14] It differentiates "poor" from "good" sleep by measuring seven domains which consists of 18 items. The score for each component rates on a 4-point Likert scale ranges from 0 to 3 points. The global PSQI score ranges from 0 to 21, with higher scores indicating more poor quality of sleep. Face validity of the translated version of Nepali language tool was maintained.

An online version self-administered questionnaire were developed by using web-based Google forms with information sheet and instructions and sent to the academic and administrative employees and their spouses who can read and understand English language through personal emails. Those who sent back the filled forms were considered as giving consent. The administrative employees and spouses, who did not use email, data was collected using printed questionnaire; forms were provided in Nepali version. Interview was conducted for those employees who could not read and write Nepali language. . Those who filled up the printed forms, the respondent's right was protected by obtaining written consent by using generic PAHS format in Nepali after explaining about the study.

Data collection was done for three-week period from June 14, 2020, to July 4, 2020, after obtaining ethical approval from Institutional Review Committee (IRC) PAHS Data was collected by the Principal Investigator.

Statistical Analysis:

Data cleaning and analysis was done using Statistical Package of Social Sciences

(SPSS) software version 16. Descriptive statistics was used to assess socio-demographic variables of respondents and prevalence of anxiety and quality of sleep and inferential statistics (chi-square) was used to examine the association between variables. P value was set at 0.05.

RESULTS

Table 1: Socio demographic information of respondents, N=128

Characteristics	Frequency	Percentage
Age in completed years		
Below 30	4	3.1
30-39	38	29.7
40-49	46	36.0
50-59	31	24.2
60 and above	9	7.0
Mean age ± SD: 44.31±9.02		
Gender		
Male	63	49.2
Female	65	50.8
Status of respondents		
Employees of Nursing Campus	72	56.25
Spouses of the employees	56	43.75
Type of work		
Employees (n=72)		
Academic	43	59.7
Administrative	29	40.3
Spouses (n=56)		
Service	28	50
Business	20	35.7
Homemaker	6	10.7
Agriculture	2	3.6

In this study, the sample consisted of 128 respondents with age range of 28-67 years. Table1 shows among 128 respondents, 29.7% belonged to age group 30 to 39 years and 36% were between the ages of 40 to 49 of years. The mean age of the respondents was 44.31 years with standard deviation of 9.02. Regarding gender, 50.8% were females and 49.2% were males. Regarding status of respondents, 56.25% were employees of the nursing campus and 43.75 were spouses of the employees. Among 72 of employees, 59.7% were academic employees and 40.3% were administrative employees. Among 56 spouses, 50% were service holders, 35.7% were engaged in business, 10.7% were homemakers and only 3.6% were doing agriculture.

Table 2: Respondents' responses on Covid-19 Anxiety Scale, N=128

Items	Not at all N (%)	Rare, less than a day N (%)	Several days N (%)	More than 7 days	Nearly every day N (%)
I felt dizzy, lightheaded or faint, when I read or listened to news about the corona virus.	108 (84.4%)	14 (10.9%)	5 (3.9%)	-	1 (0.8)
I had trouble falling or staying asleep because I was thinking about the corona virus.	101 (78.9%)	24 (18.8%)	2(1.6%)	-	1(0.8%)
I felt paralyzed when I thought about or was exposed to information about the corona virus.	115 (89.8%)	11 (8.6%)	1 (0.8%)	-	1 (0.8%)
I lost interest in eating when I thought about or was exposed to information about the corona virus.	114 (89.1%)	13 (10.2%)	1 (0.8%)	-	-
I felt nervous or had stomach problems when I thought about or was exposed to information about corona virus.	113 (88.3%)	12 (9.4%)	3 (2.3%)	-	-

Table 2 shows out of 128 of the respondents, majority (84.4%) reported being not at all felt dizzy, lightheaded or faint when they read or listened to news about the corona virus, 10.9% felt rare, less than a day, 3.9% felt several days and 0.8% felt nearly every day. Similarly, 78.9% of the respondents “not at all had trouble falling asleep” or staying asleep because of thinking about corona virus, 18.8% had rare, less than a day, 1.6% had several days and 0.8% had nearly every day. Among the respondents, majority (89.8%) not at all felt paralyzed when they thought about or was exposed to information about the corona

virus,8.6% felt rare, less than a day, 0.8% felt several days and 0.8% felt nearly every day. Likewise, the majority 89.1% of the respondents not at all lost their interest in eating when they thought about or was exposed to information about the corona virus, 10.2% lost interest rare, less than a day, and 0.8% lost interest several days. Among the respondents the majority (88.3%) not at all felt nervous or had stomach problem when they thought about or was exposed to information about Corona virus, 9.4% felt nervous rare, less than a day and 2.3% felt nervous nearly every day.

Table 3: Respondents' nighttime sleep disturbances and daytime dysfunctions, N=128

Items	Not during the past month N (%)	Less than once a week N (%)	Once or twice a week N (%)	Three or more times a week N (%)
Wake up in the middle of the night or early morning	71 (55.5%)	29 (22.7%)	12 (9.4%)	16 (12.5%)
Have to get up to use the bathroom	52 (40.6%)	33 (25.8%)	16 (12.5%)	27 (21.1%)
Cough or snore loudly	102 (79.7%)	13 (10.2%)	7 (5.5%)	6 (4.7%)
Feel too hot	93 (72.7%)	24 (18.8%)	7 (5.5%)	4 (3.1%)
Have pain	101 (78.9%)	13 (10.2%)	11 (8.6%)	3 (2.3%)
Have thought about COVID-19	81 (63.3%)	22 (17.2%)	17 (13.3%)	8 (6.2%)
Had trouble staying awake while engaging in some activities such as cooking, eating meals, talking to family members and other activities	103 (80.5%)	12 (9.4%)	7 (5.5%)	6 (4.7%)
Had problem to keep up enthusiasm to get things done	95 (74.2%)	21 (16.4%)	7 (5.5%)	5 (3.9%)

Table 4 shows respondents' trouble sleeping at night because of sleep disturbances and day time dysfunctions during the past month. Among the respondents, 55.5% did not wake up in the middle of the night or early morning, 22.7% woke up in the middle of the night or early morning less than once a week, 9.4% woke up once or twice a week and 12.5% woke up three or more times a week. Regarding had

to get up to use the bathroom, 40.6% did not have to get up, 25.8% had to get up less than once a week, 12.5% had to get up once or twice a week and 21.1% had to get up three or more times a week. Regarding cough and snore loudly, 79.7% of the respondents were not disturbed due to coughing or snoring loudly, 10.2% coughed or snored loudly less than a week, 5.5% once or twice a week and 4.7% had cough or snored loud three times

or more a week. Likewise, 72.7% did not feel too hot, 18.8% felt too hot less than a week, 5.5% felt too hot once or twice a week, 3.1% felt too hot three or more times a week. Among the respondents, 78.9% had no pain, 10.2% had pain less than a week, 8.6% had pain once or twice a week and 2.3% had pain three times or more. Among the respondents, 63.3% did not think about COVID-19, 17.2% had thought about COVID-19 less than a week, 13.3% had thought once or twice a week and 6.2% had a thought about COVID-19 three or more times a week during past month.

Table 3 also reveals daytime dysfunctions of respondents. Among 128 of respondents, 80.5% had no trouble staying awake while engaging in activities such as cooking, eating meals, talking to family members and other activities during the past month, 9.4% had trouble less than once a week, 5.5% had trouble once or twice a week and 4.7% had trouble three or more times a week. Similarly, 74.2% had no problem to keep up enthusiasm to get things done during the past month, 16.4% had problem less than once a week, 5.5% had problem once or twice a week and 3.9% had problem three or more times a week.

Table 4: Prevalence of COVID-19 anxiety and quality of sleep, N=128

Characteristics	Frequency	Percentage
Covid-19 anxiety		
Normal	126	98.4
Dysfunctional anxiety	2	1.6
Mean score ± SD: 8.51±1.13		
Quality of sleep		
Good sleep	78	60.9
Poor sleep	50	39.1
Mean score± SD: 3.49±2.80		

Table 4 shows the prevalence of dysfunctional covid-19 anxiety was 1.6% with anxiety mean score of 8.51 and standard deviation 1.13. Prevalence of poor sleep quality was 39.1% and good sleep quality was 60.9% with sleep mean score 3.49 and standard deviation 2.80.

Table 5 shows that 66.4% of the respondents could get sleep within 30 minutes after going to bed and 33.6% of the respondents had taken more than 30 minutes

to get sleep after going to bed. Regarding the duration of sleep, 68.8% of the respondents had seven hours or more sleep, whereas 31.2% had less than seven hours of sleep.

Table 5: Respondents' time taken to fall asleep and duration of sleep, N=128

Characteristics	Frequency	Percentage
Time taken to fall asleep		
Within 30 minutes after going to bed	85	66.4
Takes more than 30 minutes	43	33.6
Duration of sleep		
≥7 hours and/or more	88	68.8
< 7 hours	40	31.2

Table 6: Association between socio-demographic variables and quality of sleep, N=128

Factors	Quality of sleep			X ²	p-value
	Good	Poor			
Age					
<40 years	30 (71.4%)	12 (28.6%)	2.809		.089
40 years & above	48 (55.8%)	38 (44.2%)			
Gender					
Male	38 (60.3%)	25 (39.7%)	0.20		.887
Female	40 (61.5%)	25 (38.5%)			
Status of respondents					
Spouse	44 (61.1%)	28 (38.9%)	.002		.964
Employee	34 (60.7%)	22 (39.3%)			

Note: Chi square test: Significant (p<0.05 at 95% confidence level)

Table 6 reveals that there was no significant association of age, gender and status of respondents with quality of sleep at 95% of significance level (p>0.05).

DISCUSSION

This study aimed to find out the COVID-19 anxiety and quality of sleep among employees of Nursing Campus and their spouses. The present study revealed that among 128 respondents, the mean age was 44.31 years with standard deviation 9.02. Regarding gender, 50.8% were females and 49.2% were males. Regarding the status of respondents, 56.25% were employees of the nursing campus and 43.75% were spouses of the employees. Among 72 of employees, 59.7% were academic employees and 40.3% were administrative employees. Among 56 spouses, 50% were service holders and 35.7% were engaged in business, 10.7% were homemakers and only 3.6% were doing agriculture.

Regarding the responses on covid-19 anxiety, majority of the respondents (84.4%) not at all felt dizzy, 78.9%, not at all had trouble falling asleep or staying asleep, 89.8% not at all felt paralyzed, 89.1% not at all lost their interest and 88.3% not at all felt nervous when they read, listened and thought about corona virus. Among the respondents, 10.9% felt dizzy, 18.8% had trouble falling or staying asleep, 8.6% felt paralyzed, 10.2% lost interest and 9.4% felt nervous rare when they read, listened and thought about corona virus. Similarly, 3.9% felt dizzy, 1.6% had trouble falling asleep or staying asleep, 0.8% felt paralysed, 0.8% lost interest and 2.3% felt nervous several days when they read, listened and thought about corona virus. Only 0.8%, of the respondents felt dizzy, trouble falling asleep and felt paralysed nearly every day when they read, listened or thought about corona virus. For comparing with these study findings, similar or contrasting study could not be found.

Our study findings revealed that most of the respondents did not feel anxiety in all the five items measured. Thus, the study found that the prevalence of dysfunctional COVID-19 anxiety was 1.6% and normal anxiety was 98.4% with mean score of 8.51 and standard deviation 1.13. This study finding indicates that most of the participants did not report anxiety in compared to a study conducted in China among 56,679 general populations during corona virus disease 2019 pandemic where anxiety was found among 31.6%.^[15] Another cross-sectional study conducted among 1242 residents of Wuhan, China revealed 27.5% had anxiety.^[16] In our study, the anxiety level may have shown low as the data was collected after stability of new cases, majority of the cases were presented with mild symptoms and people started feeling comfortable and becoming stable with the covid-19 pandemic.

In this study, prevalence of poor sleep quality was 39.1% and good sleep quality was 60.9% with mean score 3.49 and standard deviation 2.80. This study

finding was lower to a study conducted among adults in Turkey during the covid-19 pandemic that showed the prevalence of poor sleep quality was 55.1%.^[17] This study finding was slightly higher compared with a cross-sectional study done in China among 56,679 general populations during covid-19 pandemic which revealed 29.2% insomnia.^[15] Another cross-sectional study conducted among 1242 residents of Wuhan, China found 30% of the respondents had sleep disorder.^[16] Similarly, a cross-sectional study conducted among 269 medical students at KIST medical college teaching hospital, Nepal showed similar results as 36.4% of the respondents had poor quality of sleep.^[18] Another study conducted in Kathmandu Valley Nepal among 504 college students showed contrasted finding that 59.1% of the respondents had poor quality of sleep.^[19]

This present study findings regarding the duration of sleep showed that 68.8% of the respondents had seven hours or more sleep whereas 31.2% had less than seven hours of sleep. A cross sectional study conducted in Kathmandu valley, Nepal among 504 college students showed the similar findings that 34.9% of the respondents had reported less than seven hours of sleep.^[18] The American Academy of Sleep Medicine (AASM) and Sleep Research Society released the recommended amount of sleep as seven or more hours per night on a regular basis to promote optimal health in adult. Sleeping less than seven hours in a regular basis is associated with adverse health outcomes such as anxiety, depression and impaired immune functions.^[20]

In this study, we did not find significant association of age, gender and status of respondents with quality of sleep at 95% of significance level (p-value=.089, .887 and .964 respectively). This study finding contrasts to the finding of a study conducted among 1242 residents of Wuhan, China which found being female was the risk factor for sleep disorder (OR=1.36).^[16] Another study conducted among 504

students in Kathmandu Valley revealed there was slightly difference between male and female respondents i.e., 55.21% of males and 65.78% of females had poor sleep quality.^[19]

This study may have some limitations. Firstly, the sample size was small and from the same institute which may decrease the generalizability of the findings to the other settings. Secondly, the Nepali version of the data collection tools were not validated, which may have caused difficulty for those who filled Nepali version in understanding the items on the tools. However, this study was an attempt to plan for the interventions if the findings indicated high level of anxiety among the participants.

CONCLUSION

From findings of the study, it is concluded that though only few respondents had dysfunctional covid-19 anxiety, about two fifth respondents had poor quality of sleep. Therefore, poor quality sleep could be addressed, and counselling could be performed on time. Early identification of the problem and proper intervention is necessary to minimize or prevent the problem related to covid-19 anxiety and poor sleep quality.

ACKNOWLEDGMENT

We would like to express our heartfelt gratitude to all the respondents for their participation and cooperation in this study. Similarly, we would like to express our sincere thanks to Dr. Bimala Panthee for necessary help in statistical analysis.

Author Contribution

All authors contributed in developing initial concept, designing, reading, writing and approving the final draft. All authors are the guarantor of the work.

Conflict of Interest: None

Source of Funding: None

Ethical Approval: Approved

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How to cite this article: Bajracharya SL, Samson P, Sarala K.C. et.al. COVID-19 anxiety and quality of sleep among employees of a nursing campus and their spouses. *Int J Health Sci Res*. 2021; 11(6): 263-270. DOI: <https://doi.org/10.52403/ijhsr.20210639>
