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Anxiety in Patients Diagnosed with COVID-19 in Tertiary Level Hospital, Kathmandu: A Cross-Sectional Study

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ABSTRACT

Background: The rising cases and mortality of COVID-19 has led to stress and fear of uncertainty among COVID-19 patients.

Objective: The study aimed to assess anxiety in patients diagnosed with COVID-19 in tertiary level hospital at Kathmandu.

Methods: A descriptive cross-sectional study was conducted among 159 COVID-19 patients at a tertiary level hospital. Stratified random sampling technique was used to select sample from COVID general wards. Face to face interview was used to assess level of anxiety using Generalised Anxiety Disorder- seven (GAD-7). SPSS 26.0 version was used to analyse the data. Chi-square test was applied to measure the association between level of anxiety and socio-demographic, source of information and hospital related information ($p < 0.05$).

Results: Among the 159 COVID-19 patients, 37.7% were aged 51-70 years, with a mean age of 50.42 ± 16.32 years. More than half (61.6%) of the respondents experienced varying degrees of anxiety. Specifically, 42.1% reported mild anxiety, 18.9% reported moderate anxiety, and 0.6% reported severe anxiety. Anxiety among the respondents was associated with socio-demographic factors such as age, religion, educational status, and the number of days of hospital stay.

Conclusion: The COVID-19 pandemic has caused increased varying degree of anxiety. Hence, adequate intervention and evaluation into mental health awareness, and psychosocial support is necessary.

Keywords: Anxiety, COVID-19, patients, tertiary care

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INTRODUCTION

COVID-19 has affected more than 220 countries worldwide. Nepal has also been hit hard by the second wave of COVID-19 pandemic with total of five hundred eighty-five thousand confirmed cases and seven thousand deaths. (1)

As the cases were rising, fear, worry and stress were normal responses to the perceived or real threats due to COVID-19 pandemic. Also, the change in daily life like working from home, online classes, lack of social contact with family and friends has increased the stress and anxiety in general people. (2,3) One of the biggest concerns was the increasing trend of COVID-19 cases and the mortality rate due to COVID. (2)

Various factors were linked with development of anxiety during COVID-19 pandemic. Uncertainty related to the disease spread, mis-information of COVID-19 contact and transmission of virus, (4) the stigma related to COVID-19, (5) lack of social support, the displacement of the family, death of a loved one, socio-economic loss, lack of mental preparedness for disaster. (6)

Several studies were conducted to assess anxiety in COVID-19 patients worldwide. In developed countries like USA and developing countries like Ecuador and Wuhan, the prevalence of anxiety was less than one third among COVID-19 patients. (7-9) The prevalence was found to be more than one third in China and Egypt. (10,11) Majority of the COVID-19 patients in Iran had reported severe anxiety. (12) In Nepal, study done by Devkota et al., (13) very few reported anxieties and more than half of the COVID patients had anxiety in the study done at Makwanpur. (14)

The psychiatric symptoms in COVID-19 patients are likely under evaluated and undertreated as the time spend with the patients is limited and also physicians prioritize physical illnesses than psychological issues. (15) Psychological well-being plays important role in recovery of the COVID patient. (10) Psychological concerns like fear and anxiety about the COVID-19 complications and its long-term effect need to explore more on COVID-19 patients. Therefore, this study aims to assess anxiety in patients diagnosed with COVID-19 at a tertiary-level hospital in Kathmandu.

METHODS

A descriptive cross-sectional design was used to assess anxiety among COVID-19 patients in the COVID wards of Tribhuvan University Teaching Hospital (TUTH), Maharajgunj, Kathmandu, a tertiary hospital designated for COVID-19 treatment. As of June 2021, TUTH had 279 beds allocated for COVID-19 patients, with over 200 patients being treated. The study area was stratified into three wards: Suresh Wagle COVID Centre (SWCC), COVID A, and COVID Isolation B. Proportionate stratified random sampling was employed to ensure representativeness across these wards. The sample size was calculated using Cochran's formula n0 = Z2pq/d2, (16) resulting in 159 respondents. Based on the proportion of beds allocated to each ward, 61 patients were selected from SWCC, 59 patients from COVID A, and 39 patients from COVID Isolation B.

Male and female patients diagnosed with COVID-19 and admitted for at least three consecutive days were included in the study. Patients previously diagnosed with severe psychiatric illness and those with any physical illness that contribute to anxiety were excluded.

Reliable and valid Generalized Anxiety Disorder-7 (GAD-7) scale was used as a tool. The GAD-7 has a total score range of 0-21, where scores below 5 indicate no anxiety, scores of 5-9 indicate mild anxiety, scores of 10-14 indicate moderate anxiety, and scores above 15 indicate severe anxiety. (17,18) Face to face interviews were conducted by following health safety measures from both the sides. Each respondent took 15-35 minutes for response. The data were collected during morning and evening shifts from September to October, 2021.

Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to summarize anxiety levels, while the Chi-square test was employed for inferential analysis. Anxiety levels were categorized into 'no anxiety symptoms' and 'anxiety symptoms' (including mild, moderate, and severe levels). (18) All analyses were conducted using SPSS version 26.

Ethical considerations

Ethical clearance was obtained from Institutional Review Committee (IRC), YHSA (2077-078-056). Permission letter was obtained from administration of TUTH for data collection. The letter received from hospital was submitted to the nursing officers for formal permission to collect the data from the nurses. Individual informed written consent was taken from all the respondents who participate in the study. Participants' right to refuse at any time during data collection were assured and accepted. The confidentiality was maintained by keeping information in such a way that only researcher could assess them and would not be disclosed to other than research purpose. Anonymity was ensured by writing code number instead of names in the questionnaire.

RESULTS

Table 1 describes the socio-demographic characteristics of the respondents. More than one third (37.7%) of the respondents belonged to age groups of 51-70 years with mean and standard deviation 50.42±16.32. More than half were female. More than half (59.7%) belonged to Hinduism and more than one third (37.7%) were Brahmin and Chhetri. More than two third (68.6%) of the respondents were married and less than half (40.9%) had education above the higher secondary. Around one third (35.2%) of them were working as service holder. More than half (58.5%) were residing permanently inside the valley and had monthly income of 31000-45000 per month.

Table 1: Socio-demographic information of respondents (n= 159)

Variables	Frequency	Percentage
Age		
Mean±SD = 50.42±16.32		
< 30 years	28	17.6
31-50 years	49	30.8
51-70 years	60	37.7
above 70 years	22	13.8
Gender		
Male	79	49.7
Female	80	50.3

Ethnic groups		
Dalit	30	18.87
Janajati	51	32.07
Madheshi	16	10.07
Muslim	2	1.26
Brahmin/Chhetri	60	37.73
Religion		
Hinduism	95	59.7
Buddhism	34	21.4
Christianity	24	15.1
Islam	6	3.8
Marital Status		
Married	109	68.6
Unmarried	31	19.5
Others*	19	11.9
Educational Level		
Illiterate	27	17.0
Primary Level	20	12.6
Secondary Level	17	10.7
Higher secondary level	30	18.9
Above	65	40.9
Occupation Status		
Agriculture	4	2.5
Business	38	23.9
Service	56	35.2
Student	7	4.4
Daily wages	13	8.2
Dependent	41	25.8
Address		
Inside valley	93	58.5
Outside valley	66	41.5
Monthly family income		
16,000 - 30,000	25	15.7
31,000 - 45,000	79	49.7
46,000 and above	55	34.6

*Widow, divorced

The main accesses for the COVID-19 related information are health workers and television which accounts for 88.7% and 85.5% respectively. Almost all of the respondents spend less than 4 hours to access information regarding COVID-19 whereas only 3.8% spend more than 4 hours (Table 2).

Table 2: Use of mass media (n =159)

Variables	Frequency	Percentage
Mass Media to access COVID-19 information*		
Television	136	85.5
Newspaper	111	69.8
Radio	103	64.8
Social media	128	80.5
Health workers	141	88.7
Others#	79	49.7
Time spent on Mass media/day to access COVID-19 information		
0-1 hour	52	32.7
1-2 hour	50	31.4
2-3 hour	51	32.1
more than 4 hour	6	3.8

*Multiple response, #friends, neighbours, co-workers

Approximately more than half (52.2%) of the respondents' family members were infected with COVID-19 among them 36.8% were their children. And 44.7% stayed hospital for more than 5 days (Table 3).

Table 3: Hospital related information of respondents (n= 159)

Variables	Frequency	Percentage
Family member infected with COVID-19		
Yes	76	47.8
No	83	52.2
Infected family members		
Parents	16	21.1
Siblings	9	11.8
Children	28	36.8
Spouse	16	21.1
other family members	7	9.2
Duration of Hospital stay		
3 days	28	17.6
4 days	33	20.8
5 days	27	16.9
more than 5 days	71	44.7

Most of the (61.6%) of the respondents had anxiety whereas more than one third (42.1%) had mild anxiety and only 18.9% had moderate anxiety (Table 4).

Table 4: Level of anxiety of respondents (n= 159)

Level of anxiety	Frequency	Percentage (%)
No anxiety	61	38.4
Mild anxiety	67	42.1
Moderate Anxiety	30	18.9
Severe anxiety	1	0.6

Table 5 demonstrates that religion, educational level, and length of hospital stay were significantly associated with anxiety symptoms among participants ($p < 0.05$). Specifically, individuals identifying as Hindu were more likely to experience anxiety compared to those of other religious affiliations ($\chi^2 = 4.59$, $p = 0.03$). Participants with primary or preparatory education levels reported significantly higher anxiety prevalence than those with secondary education or above ($\chi^2 = 6.31$, $p = 0.01$).

Moreover, longer hospital stays were linked to increased anxiety, as patients hospitalized for five or more days were significantly more likely to exhibit anxiety symptoms than those with shorter stays ($\chi^2 = 9.18$, $p = 0.002$). In contrast, age, gender, ethnicity, marital status, and monthly income showed no significant association with anxiety symptoms ($p > 0.05$).

Table 5: Association between level of anxiety and socio-demographic variables

Variables	Anxiety symptoms	No Anxiety symptoms	χ^2	p-value
Age				
Less than 50 years	40(54.1%)	34(45.9%)	3.36	0.06*
More than 50 years	58(68.2%)	27(31.8%)		
Gender				
Male	49(62%)	30(38%)	0.01	0.92
Female	49(61.3%)	31(38.8%)		
Ethnicity				
Brahmin/ Chhetri and Janajati	72(64.9%)	39(35.1%)	1.62	0.20*
Others**	26(54.2%)	22(45.8%)		
Religion				
Hinduism	65(68.4%)	30(31.6%)	4.59	0.03*
Others***	33(51.6%)	31(48.4%)		
Marital status				
Married	68(62.4%)	41(37.6%)	0.08	0.77
Others****	30(60.0%)	20(40.0%)		
Educational Status				
Primary and preparatory	36(76.6%)	11(23.4%)	6.31	0.01*
Secondary and Above	62(55.4%)	50(44.6%)		
Days of hospital stay				
<5 days	45(51.1%)	43(48.9%)	9.18	0.002*
≥5 days	53(74.6%)	18(25.4%)		
Monthly income				
Below 30 thousand	14(56.0%)	11(44.0%)	0.39	0.52
Above 30 Thousand	84(62.7%)	50(37.3%)		

* Significance level set at $p < 0.05$, **: Dalit, Madhesi, Muslism, ***: Buddhism, Christainity, Islam, ****:Unmarried, Divorce, widow

DISCUSSION

The aim of this study was to assess the prevalence and factors associated with anxiety among hospitalized COVID-19 patients in the COVID wards of a tertiary hospital in Kathmandu. Most (61.6%) of the respondents experienced varying degrees of anxiety, with more than half (42.2%) reporting mild anxiety. This result aligns with studies conducted in the USA, Ecuador, China, and Nepal. (7-9,19) However, the prevalence observed in this study was significantly higher than that reported in studies from Egypt (39.1%) and China (34.74%). (10,11) Moderate anxiety was found in 18.9% of the respondents, which exceeds the prevalence reported in a study from Western Nepal. (19) Only one patient (0.6%) exhibited severe anxiety, which is consistent with the findings of Zandifer et al., (12) and BC et al., (20) but contrasts with a study conducted in Wuhan, China, where a higher prevalence of severe anxiety was reported. (9)

The socio-demographic factors examined in this study included age, gender, ethnicity, religion, marital status, educational level, occupation, monthly income, and time spent on social media. Hospital-related factors, such as whether a family member was infected with COVID-19 and the duration of hospital stay, were also assessed. The association between anxiety and these variables were explored.

The results indicated that age, religion, educational status, and duration of hospital stay were significantly associated with anxiety among COVID-19 patients. Conversely, no significant association was found between anxiety and factors such as gender, ethnicity, occupation, marital status, and having a family member infected with COVID-19.

Age was identified as a significant factor associated with anxiety in studies by Sahu et al., (4) and Saddik et al. (19) However, two studies conducted in Nepal found no association with age. (20,21) The discrepancy may be due to differences in the age ranges of the COVID-19 patients studied.

Similarly, gender was associated with anxiety in this study, which aligns with findings from India, (4) Nepal, (21) and a multicounty study. (22) However, in our study, neither gender nor occupational status was associated with anxiety, contrary to findings from Wuhan where age was identified as a significant factor. (9,23)

Educational level was identified as a factor associated with anxiety in a study from India, (4) which is consistent with our findings. The lack of association between having a family member infected with COVID-19 and anxiety in our study aligns with the results of Kong et al. (10) The duration of hospital stay was associated with anxiety in our study, supported by the studies of Omar et al., (22) and Saddik et al., (19) but this finding contrasts with studies by BC et al., (20) and Shrestha, Thapa, and Katuwal, (21) who did not find such an association. Additionally, the association of age with anxiety and the non-association of occupation with anxiety are supported by a study conducted in Nepal. (13)

Data collection relied on face-to-face interviews, potentially introducing biases related to respondent recall and social desirability. Additionally, the study's sample size may limit the generalizability of findings.

CONCLUSION

This study found that anxiety was prevalent among nearly half of hospitalized COVID-19 patients. Factors such as age, religion, educational level, and length of hospital stay were significantly associated with anxiety levels. These findings underscore the importance of considering these factors when assessing and managing anxiety in this patient population. Further research is required to explore the underlying mechanisms linking these variables to anxiety and to develop targeted interventions.

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Conflict of interest

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