International Journal of Community Medicine and Public Health
Gautam P. Int J Community Med Public Health. 2024 Apr;11(4):1468-1476
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20240879

Original Research Article

Mental health dynamics among COVID-19 survivors: anxiety and depression in urban Nepal

Prabha Gautam*

Maternal and Neonatal Healthcare, One Heart Worldwide, Nepal

Received: 04 February 2024
Revised: 12 March 2024
Accepted: 13 March 2024

***Correspondence:**
Dr. Prabha Gautam,
E-mail: prabha.gtm007@gmail.com

ABSTRACT

Background: The COVID-19 pandemic has exerted a profound impact on global mental health, with developing countries like Nepal facing exacerbated challenges. This study investigates the prevalence and determinants of anxiety and depression among COVID-19 survivors recognizing the pivotal role of socio-demographic and health-related factors in shaping mental health outcomes during the pandemic.
Methods: Employing an analytical cross-sectional design, the study engaged 150 COVID-19 survivors from Kathmandu's Urban Health Clinic. Participants were selected through systematic random sampling and data were collected via a combination of semi-structured and closed-ended questionnaires, incorporating the depression anxiety stress scale (DASS) 21. Data analysis involved descriptive statistics, Chi-square tests, Fisher exact tests, and logistic regression to understand the associations and predictors of anxiety and depression among the survivors.
Results: The study revealed that a significant proportion of COVID-19 survivors experienced anxiety and depression at varying levels. 82% of the participants exhibited normal depression levels, while 18% reported symptoms ranging from mild to extremely severe. Anxiety was more prevalent, with 58% showing normal levels and 42% experiencing mild to extremely severe anxiety. Key predictors of depression included lack of access to COVID health services, while anxiety was significantly associated with residence type, overall health status during COVID-19, treatment type, and concerns about future waves of the pandemic.
Conclusions: The study emphasize the crucial need for accessible healthcare services and comprehensive mental health support. Policymakers and healthcare providers should integrate mental health services into post-COVID recovery plans, focusing on tailored interventions for survivors' needs.

Keywords: COVID-19, Mental health, Anxiety, Depression

INTRODUCTION

The emergence of the coronavirus disease (COVID-19), declared a pandemic by the World Health Organization in March 2020, has not only inflicted physical ailments but also cast a profound impact on mental health globally.[1,2] In Nepal, a developing country with a burgeoning healthcare system, the situation is considerably dire. As of November 2021, the nation has witnessed over 821,366 cases and 11,526 deaths due to the virus.[3] The pandemic's ramifications extend beyond the immediate physical health crisis, permeating the social, economic, and mental well-being of individuals.[4,5]

The psychological aftermath of the pandemic is an area of particular concern, with a marked increase in mental health conditions, notably anxiety and depression. The global surge in these conditions during the pandemic is alarming, with an additional 53.2 million cases of anxiety and 76.2 million cases of major depressive disorders reported in 2020 alone.[6] These conditions are known to be debilitating, often co-occurring and leading to severe

consequences including suicide, and are exacerbated by factors like social isolation, economic instability, and fear of the virus.[7,8]

Historically, survivors of infectious disease outbreaks have been prone to mental health issues. Studies conducted on survivors of previous epidemics such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) indicate a high prevalence of psychiatric disorders, including PTSD, depression, and anxiety, during the post-illness stage.[9,10] These findings underscore the necessity to prioritize the mental health of COVID-19 survivors, a vulnerable group similarly at risk.

Despite the global focus on the physical health aspects of COVID-19, there is a critical gap in high-quality evidence concerning its impact on mental health, especially in countries like Nepal where studies on this subject are scant.[11,12] Research conducted in other nations indicates a substantial portion of COVID-19 survivors suffer from mental health issues. For instance, studies in Italy and China reported high rates of anxiety, depression, and PTSD among survivors.[13,14] These findings suggest a similar trend might exist in Nepal, yet the lack of local data impedes the development of tailored interventions.

The socio-economic repercussions of the pandemic further compound the mental health crisis. The pervasive fear, unemployment, especially among the youth, and the long-term health consequences catalyze mental health disorders, affecting not just the sufferers but also causing significant economic losses.[6,15]

In Nepal, the unique geographical, social, and cultural context adds layers of complexity to the mental health landscape. Depression and anxiety are not just prevalent but are deeply intertwined with the country's social structure and lifestyle.[16] The pandemic has exacerbated these issues, yet the lack of focused research hampers the formulation of effective strategies and policies to address this silent crisis.

This study aims to bridge this gap by exploring the relationship between anxiety, depression, and their associated factors among COVID-19 survivors in Nepal. Understanding the socio-demographic profile most affected by these conditions, the proportionate level of depression and anxiety, and the contributing factors is crucial. This knowledge will not only shed light on the mental health status of COVID-19 survivors in Nepal but also guide the development of targeted interventions to alleviate this emerging mental health crisis.

METHODS

This study employed an analytical cross-sectional design to assess the prevalence and associated factors of anxiety and depression among COVID-19 survivors. The research was conducted at Urban Health Clinic, Mitrapark, Kathmandu-07 from 19 May 2022 to 18 June 2022. This setting was selected due to its significant recovery rate among COVID-19 patients and the potential to explore mental health issues arising post-recovery. The health staff of the clinic cooperatively contributed to the data collection process, providing critical insight into the COVID-19 patient population.

Population and sample size

The study population comprised individuals diagnosed with COVID-19 within the past year at the Urban Health Clinic, Mitrapark, Kathmandu. Based on the prevalence rates of anxiety and depression reported in previous studies the sample size was calculated using Cochran's formula for finite population sizes.[17] Sample size calculation for finite population is given below.

$$n = \frac{n_0}{1 + (n_0 - 1)/N}$$

$$n = \frac{139}{1 + (139 - 1)/2900}$$

$$n = 132.69 \sim 133$$

Adding 10% non-response rate, final sample size was found to be as given below.

$$Final\ sample\ size: 133 + (10\%\ of\ 133) = 146.3 \sim 146$$

Pretesting was done in 10% of sample size.

$$10\%\ of\ 146 = 14.6 \sim 15$$

The final sample size was determined to be 147, accounting for a 10% non-response rate, with pretesting conducted on approximately 10% of the sample size.

Sampling techniques and criteria

A purposive selection approach was used to identify the Mitrapark Urban Health Clinic as the data collection site. Systematic random sampling was then applied to select participants from a compiled list of COVID-19 survivors. The inclusion criteria were adults over 18 years willing to give consent. Exclusion criteria encompassed individuals with pre-existing mental health issues before COVID-19, those lacking lab report verification, non-residents or unreachable individuals, and non-responsive individuals.

Data collection tools and techniques

Data were collected using a combination of semi-structured and closed-ended questionnaires. The questionnaires, initially prepared in English and translated into Nepali, comprised two parts: socio-demographic and health-related information, and the depression anxiety

stress scale (DASS) 21 for evaluating anxiety and depression levels. Face-to-face interviews were conducted to obtain responses, ensuring a comprehensive understanding of the survivors' mental health status.

Operational definition of variables

Variables such as age, sex, place of residence, income status, education, marital status, employment status, type of family, co-morbidity, psycho-social counseling, alcoholism, smoking, anxiety, and depression were defined operationally. Notably, anxiety and depression levels were categorized into five levels: normal, mild, moderate, severe, and extremely severe, based on the scoring system of the DASS 21.[18]

Data collection procedure

Data collection involved a meticulous procedure starting with obtaining formal permissions and conducting an initial meeting with the clinic staff to align the study's objectives. A systematic approach was employed for sampling, and follow-ups were conducted to address non-responses or refusals, ensuring a comprehensive data collection process.

Reliability and validity of tools

The reliability and validity of the data collection tools were established through pre-testing and consultation with experts. The Cronbach's alpha value was calculated to be 0.74, indicating a satisfactory level of internal consistency.

Data management and analysis

Frequency and percentages were calculated for descriptive data. Bi-variate analysis (Chi-square test and Fisher exact test) was used to examine the association between anxiety/depression and explanatory variables. A p-value less than 0.05 was considered statistically significant. Logistic regression analysis was performed to examine the effects of determinants of outcomes. Initially, explanatory determinants were included in the model one at a time to examine their univariate relationship with the outcome. Multivariate logistic regression models were then used to identify the most important determinants for each outcome after adjusting confounders. A p value of less than 0.05 was used to define statistical significance. Adjusted odds ratio (AOR) as well as their 95% confidence interval (CI) were used to depict the independent relationship between predictors and dependent variables. All statistical analysis for this study were conducted using statistical package for the social sciences (SPSS) version 25.

RESULTS

Table 1 presents a detailed socio-demographic snapshot of the respondents, revealing a diverse age range from 18 to 78 with an average age of 36.73 years. The study found a female majority of 54.7%, with a significant portion, 68.7%, being married.

Table 1: Distribution of socio-demographic characteristics of COVID-19 survivors attending urban health clinic in Mitrapark, Kathmandu (n=150).

Variables	Frequency (N)	Percentage (%)
Age of the respondents (years)		
18-27	40	26.7
28-37	46	30.7
38-47	33	22.0
48 and above	31	20.7
Mean (CI) =36.73 (34.72–38.75) (range=18-78 years)		
Sex of the respondents		
Male	68	45.3
Female	82	54.7
Marital status		
Married	103	68.7
Single	42	28.0
Widowed	5	3.3
Employment status		
Employed	99	66.0
Unemployed	51	34.0
Caste and ethnicity		
Brahmin and Chhetri	84	56.0
Others (Janajati, Madhesi and Dalit)	66	44.0
Religion		
Hindu	124	82.7
Others (Buddhist and Christian)	26	17.3
Educational status		
No formal education	14	9.3
Formal education	71	27.3
Secondary education	30	20.0
University	65	43.3
Type of family		
Nuclear	115	76.7
Joint	35	23.3
Residence		
Own house	75	50.0
Rented house	72	48.0
Others	3	2.0
Currently living with own family		
Yes	124	82.7
No	26	17.3
Loss of family, relatives or friends due to COVID		
Yes	22	14.7
No	128	85.3
Loss of job due to COVID		
Yes	32	21.3
No	71	47.3
Was not employed before COVID	47	31.3

Employment was common among the participants, with 66.0% reporting being employed. The religious background was predominantly Hindu (82.7%), with Brahmin and Chhetri communities making up 56.0% of the sample. Educational attainment was notable, with 43.3% holding a university degree. The majority lived in nuclear families (76.7%) and resided with their own families (82.7%). The impact of COVID-19 was significant, with 14.7% experiencing the loss of family, relatives, or friends, and 21.3% facing job loss during the pandemic (Table 1).

Table 2 revealed significant insights into their health behaviors and statuses. While only a minority engaged in smoking and alcohol consumption, a notable 26.7% had comorbidities. Most respondents reported good overall health during the pandemic, with the majority opting for home-based treatment. Concerns about re-infection and subsequent COVID-19 waves were significant, with nearly half worried about future infection and a majority perceiving COVID-19 as a continued risk. Despite high family support and reasonable access to COVID health services, only 1.3% utilized mental health services post-recovery, indicating a potential gap in psychological care. Vaccination efforts were evident, yet a complete vaccination was reported by only 36.7%. The prevalent symptoms of fever, loss of taste, and smell highlight the virus's impact, while the partial satisfaction with the government's pandemic response suggests areas for improvement in crisis management.

Table 3 reveal that a majority of the survivors (82.0%) did not show signs of depression, although a subset experienced varying degrees of depressive symptoms: 7.3% mild, 6.0% moderate, 2.7% severe, and 2.0% extremely severe. Anxiety levels among the survivors presented a more varied distribution: 42.0% of the participants were classified as normal, while 12.37% experienced mild anxiety, 16.7% moderate, 12.7% severe, and a notable 16.0% were coping with extremely severe anxiety. These insights highlight the critical need to address mental health concerns among COVID-19 survivors, especially considering the significant proportion experiencing severe to extremely severe anxiety.

Table 4 reveals significant demographic associations with depression and anxiety. Among depressed individuals, the highest prevalence (32.5%) was observed in the 28-37 age group, with marital status showing a significant correlation ($p<0.01$); 74.0% of depressed respondents were married. No significant associations were found between depression and other variables such as age, gender, employment status, caste/ethnicity, education, type of family, residence, or living with family ($p>0.05$).

In contrast, significant findings were observed in the anxiety cohort; 60.3% of those with anxiety lived in their own house, which was significantly associated with anxiety levels ($p=0.04$). However, like depression, anxiety showed no significant association with age, gender, marital status, employment status, caste/ethnicity, educational level, type of family, or living with family ($p>0.05$).

Furthermore, the loss of family, friends, or relatives was significantly associated with depression ($p=0.03$), but this was not the case for anxiety. The data underscore the importance of considering marital status and residential status in understanding the mental health outcomes among COVID-19 survivors, with a marked significance in the loss of close ones contributing to depressive experiences.

Depression was significantly correlated with marital status and loss of family, friends, or relatives due to COVID in bivariate analysis, but in multivariate analysis, the ease of access to COVID health services emerged as the predominant factor. Table 5 shows lack of access to health services increased the odds of experiencing depression by 6.81 times (adjusted OR=6.81; 95% CI: 2.59-7.92). Anxiety was associated with residence, overall health status during COVID, the type of COVID treatment received, and concerns about another wave of COVID-19. Notably, those living in their own residence had decreased odds of experiencing anxiety (adjusted OR=0.39; 95% CI: 0.18–0.85), and respondents rating their health status during COVID as poor had significantly higher odds of experiencing anxiety (adjusted OR=0.21; 95% CI: 0.07–0.56). Moreover, respondents who received home-based treatment or were shifted from home isolation to hospitalization showed significantly higher odds of anxiety compared to those who received facility-based care. Concerns about another wave of COVID-19 also significantly increased the odds of experiencing anxiety (adjusted OR=3.74; 95% CI: 1.37-10.17).

Table 2: Health behavior and health status of COVID-19 survivors attending Urban Health Clinic in Mitrapark, Kathmandu (n=150).

Health aspect	Variables	Frequency (N)	Percentage (%)
Health behavior	**Currently smoking**		
	Yes	10	6.7
	No	114	76.0
	Sometimes	26	17.3
	Currently consume alcohol		
	Yes	10	6.7
	No	118	78.7
	Sometimes	22	14.7

Continued.

Health aspect	Variables	Frequency (N)	Percentage (%)
	Co-morbidity		
	Yes	40	26.7
	No	110	73.3
	Rating of overall health status during COVID		
	Good	104	69.3
	Poor	46	30.7
	Type of COVID treatment received		
	Home-based	117	78.0
	Facility-based	24	16.0
	First started with home isolation but later had to be hospitalized	9	6.0
	Re-infected with COVID -19		
	Yes	33	22.0
	No	117	78.0
	Worrying about COVID-19 again		
	Yes	74	49.3
	No	76	50.7
	Faced any stigma or discrimination		
	Yes	69	46.0
	No	81	54.0
	Have enough support from family		
	Yes	121	80.7
	No	29	19.3
	Is COVID risk for you and your family		
	Yes	142	94.7
	No	8	5.3
	Easily accessible to COVID health services		
Health status related to COVID-19	Yes	112	74.7
	No	38	25.3
	Is government handling pandemic well		
	Yes	18	12.0
	No	53	35.3
	Partially	79	52.7
	Taken any mental health services after COVID recovery		
	Yes	2	1.3
	No	148	98.7
	Received COVID-19 vaccine		
	Yes	55	36.7
	No	10	6.7
	Partial	85	56.7
	Worried about another wave of COVID-19		
	Yes	115	76.7
	No	35	23.3
	Symptoms of COVID*		
	Fever	113	75.3
	Dry/cough	68	45.3
	Fatigue	46	30.7
	Myalgia/fatigue	55	36.7
	Dyspnea	25	16.7
	Headache	53	35.3
	Diarrhea	31	20.7
	No taste	106	70.7
	No smell	101	67.8
	Chest pain	9	6.0

*Multiple response

Table 3: Comparative levels of depression and anxiety among COVID-19 survivors attending Urban Health Clinic in Mitrapark, Kathmandu (n=150).

Level of distress	Measure	Normal	Mild	Moderate	Severe	Extremely severe
Depression	Frequency (N)	123	11	9	4	3
	Percentage (%)	82	7.3	6	2.7	2
Anxiety	Frequency (N)	63	19	25	19	24
	Percentage (%)	42	12.7	16.7	12.7	16

Table 4: Demographic variables associated with depression and anxiety among COVID-19 survivors attending Urban Health Clinic (n=150).

Variables	Depression (N, %)		Test stat	Anxiety (N, %)		Test stat
	Present	Absent	χ^2 (p value)	Present	Absent	χ^2 (p value)
Age group (years)						
18-27	29 (23.6)	11 (40.7)	3.02 (0.08)[a]	16 (25.4)	24 (27.6)	0.01 (0.99)[a]
28-37	40 (32.5)	6 (22.2)		19 (30.2)	27 (31.0)	
38-47	25 (20.3)	8 (29.6)		17 (27.0)	16 (18.4)	
48+	29 (23.6)	2 (7.4)		11 (17.5)	20 (23.0)	
Sex						
Male	57 (46.3)	11 (40.7)	0.10 (0.75)[b]	32 (50.8)	36 (41.4)	0.96 (0.33)[b]
Female	66 (53.7)	16 (59.3)		31 (49.2)	51 (58.6)	
Marital status						
Married	91 (74.0)	12 (44.4)	7.66 (<0.01*)[b]	44 (69.8)	59 (67.8)	0.01 (0.93)[b]
Single/widowed	32 (26.0)	15 (55.6)		19 (30.2)	25 (32.2)	
Employment status						
Employed	82 (66.7)	17 (63.0)	0.02 (0.89)[b]	39 (61.9)	60 (69.0)	0.53 (0.47)[b]
Unemployed	41 (33.3)	10 (37.0)		24 (38.1)	27 (31.0)	
Caste/ethnicity						
Brahmin/Chhetri	68 (55.3)	16 (59.3)	0.03 (0.87)[b]	32 (50.8)	52 (59.8)	0.86 (0.35)[b]
Non-Brahmin/Chhetri	55 (44.7)	11 (40.7)		31 (49.2)	35 (40.2)	
Education						
No/basic education	50 (40.7)	5 (18.5)	4.64 (0.03*)[a]	18 (28.6)	37 (42.5)	3.05 (0.08)[a]
Secondary and above	73 (59.3)	22 (81.5)		45 (71.4)	50 (57.5)	
Residence						
Own house	61 (49.6)	14 (51.9)	0.01 (1.00)[b]	38 (60.3)	37 (42.5)	3.94 (0.04*)[b]
Rented house/others	62 (50.4)	13 (48.1)		25 (39.7)	50 (57.5)	
Living with family						
Yes	46 (73.0)	69 (79.3)	1.04 (0.31)[b]	54 (85.7)	70 (80.5)	0.39 (0.54)[b]
No	17 (27.0)	18 (20.7)		9 (14.3)	17 (19.5)	
Loss of family/friends						
Yes	14 (11.4)	8 (29.6)	4.52 (0.03*)[b]	12 (19.0)	10 (11.5)	1.12 (0.29)[b]
No	109 (88.6)	19 (70.4)		51 (81.0)	77 (88.5)	

Table 5: Factors associated with depression among COVID-19 survivor from Urban Health Clinic, Mitrapark, Kathmandu (n=150).

Variables	Unadjusted OR (95% CI)	P value	Adjusted OR (95% CI)	P value
Marital status				
Married	3.56 (1.51 – 8.39)	<0.01*	0.43 (0.16 - 1.16)	0.09
Single/widowed	Ref		Ref	
Education				
No/basic education	3.01 (1.07 - 8.49)	0.03*	0.44 (0.14 - 0.39)	0.14
Secondary and above	Ref		Ref	
Loss of family, relatives or friends due to COVID				
Yes	3.28 (1.21 - 8.88)	0.01*	2.07 (0.63 - 6.79)	0.35

Continued.

Variables	Unadjusted OR (95% CI)	P value	Adjusted OR (95% CI)	P value
No	Ref		Ref	
Easily accessible to COVID health services				
Yes	Ref		Ref	
No	8.26 (3.32- 20.54)	<0.01*	6.81 (2.59 -7.92)	<0.01*

*Significant at p<0.05, OR=odds ratio, CI=confidence interval, Ref=reference category, -2 log likelihood=210.773

Table 6: Factors associated with anxiety among COVID-19 survivor from Urban Health Clinic, Mitrapark, Kathmandu (n=150).

Variables	Unadjusted OR (95% CI)	P value	Adjusted OR (95% CI)	P value
Residence				
Own house	2.05 (1.06 - 3.97)	0.03*	0.39 (0.18 – 0.85)	0.02*
Rented house/others	Ref		Ref	
Rating of overall health status during COVID				
Good	Ref		Ref	
Poor	5.33 (2.27 – 12.53)	<0.01*	0.21 (0.07 – 0.56)	0.02*
Type of COVID treatment received				
Home-based	10.81 (2.43- 48.09)	<0.01*	9.30 (1.84 -46.92)	<0.01*
Facility-based	Ref		Ref	
First started with home isolation but later hospitalized	5.50 (0.74 - 40.80)	0.09	20.14 (2.02 - 200.21)	0.07
Worrying about COVID-19 again				
Yes	2.19 (1.13 - 4.26)	0.02*	1.60 (0.47 – 2.40)	0.87
No	Ref		Ref	
Worrying about another wave of COVID-19				
Yes	3.05 (1.39 - 6.69)	0.05*	3.74 (1.37-10.17)	0.01*
No	Ref		Ref	

*Significant at p<0.05, OR=odds ratio, CI=confidence interval, Ref=reference category, -2 log likelihood=262.995

DISCUSSION

The socio-demographic data revealed a broad age range among respondents, predominantly females and married, with a significant portion being employed. This demographic profile aligns with findings from, emphasizing the influence of age, gender, and employment status on mental health, corroborated further by, who highlighted the link between less working experience and adverse mental health outcomes.[19,20] Extending this, our study aligns with findings that older age and female gender are contributing factors for anxiety and depression, with older patients experiencing more severe physical distress, potentially exacerbating mental health issues.[21,22]

In terms of health status related to COVID-19, a majority reported good health during the pandemic, preferring home-based treatment, echoing the choices reported in a research.[14] However, despite the reported good health status, concerns about COVID-19 reoccurrence and the stigma associated with it were prevalent. This indicates a divergence in the utilization of mental health services and perceptions of risk associated with COVID-19. While it aligns with the findings of one study, it differs from the observations of another study, which noted a higher tendency to seek mental health services.[19,23]

When examining levels of depression and anxiety, the study found a substantial majority indicating normal levels, with a minority experiencing mild to extremely severe symptoms. Similar results were found in terms of depression in previous studies.[17,24] However few research presents their findings as possible variation in the prevalence of depression across different settings in contrast.[25] The anxiety levels in our study were higher than previous study.[14] Our findings suggest a notable risk of anxiety disorders among the population which aligns to the previous studies.[25] Additionally, our findings are supported by reports showing that a significant percentage of patients with COVID-19 experienced anxiety (36.89%) and depression (23.30%), corroborating the assertion that the pandemic has markedly impacted mental health.[26,27]

The study identified a significant association between the level of accessibility to COVID health services and the experience of depression among survivors, emphasizing the importance of accessible healthcare in mitigating mental health issues during pandemics. Furthermore, factors such as residence type, overall health status during COVID-19, type of treatment received, and worries about future waves of the pandemic were significantly associated with anxiety levels. This is in line with findings from the study conducted in Wuhan Jinyintan Hospital, which highlighted the complex interplay of various factors,

including post-discharge symptoms, stigma, and hospital admission, in influencing anxiety and depression.[14,19] Our results also indicate that patients with infected family members and those with longer hospital stays are more likely to present symptoms of anxiety and depression, suggesting that the psychological burden extends beyond the individual to the family unit and is influenced by the duration of hospitalization.[27,28]

This study contributes to the growing body of evidence suggesting a multifaceted interplay of socio-demographic factors, health status, and treatment experiences in shaping the mental health outcomes of COVID-19 patients. These findings underscore the need for comprehensive mental health strategies that address the varied and complex needs of patients recovering from COVID-19, particularly emphasizing the importance of early identification and intervention for those at risk of anxiety and depression.

The study's cross-sectional nature and focus on an urban setting restrict its ability to infer causality and its applicability across diverse Nepalese regions. Excluding individuals with prior mental health issues and relying on self-reported measures might lead to biased outcomes that don't fully capture the mental health impact of COVID-19. To overcome these limitations, future studies should include a broader, more varied population sample and employ longitudinal designs to track mental health trends over time.

CONCLUSION

This study on the mental health dynamics among COVID-19 survivors in urban Nepal provides critical insights into the prevalence and factors associated with anxiety and depression. It advances our understanding by highlighting the significant mental health burden among survivors, emphasizing the need for integrated mental health services in post-COVID recovery efforts. By identifying key factors such as accessibility to health services and the impact of socio-demographic characteristics, the research underscores the complexity of mental health challenges faced by COVID-19 survivors. This contribution is especially relevant in the context of Nepal's urban settings but also offers a foundation for broader, global applications in addressing post-pandemic mental health needs. Given these findings, future studies should consider larger sample sizes to ensure broader generalizability of results. Longitudinal study designs are recommended to evaluate the pandemic's relative contribution to the increase in mental health disorders. It's crucial to emphasize the importance of mental health during times of crisis, such as the COVID-19 pandemic. Regular mental health screenings for COVID-19 survivors are essential for early detection and timely intervention. Policymakers should utilize these findings to develop and organize targeted mental health programs for COVID-19 survivors. The insights gained can also provide a foundation for future research and enhance our understanding of mental health dynamics during pandemics.

ACKNOWLEDGEMENTS

Author would like to thank Department of Public Health, Nobel College, and mentors, Dr. Baburam Marasini and Mr. Nirmal Dawadi, for their invaluable support in the study. They would also like to acknowledge the Department of Health Division, Babarmahal, and the staff of Urban Health Clinic, Mitrapark, Kathmandu, for their assistance.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Sun P, Lu X, Xu C, Sun W, Pan B. Understanding of COVID-19 based on current evidence. J Med Virol. 2020;92(6):548-51.
2. World Health Organization (WHO). Weekly epidemiological update on COVID-19. 2021. Available at: https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---30-november-2021. Accessed on 24 January 2024.
3. INSEC ONLINE. Update of November 30 Regarding COVID-19 Infection. 2020. Available at: https://inseconline.org/en/news/update-of-november-30-regarding-covid-19-infection/. Accessed on 24 January 2024.
4. Menon V, Padhy SK. Mental health among COVID-19 survivors: Are we overlooking the biological links? Asian J Psychiatry. 2020;53:102217.
5. Xiao S, Luo D, Xiao Y. Survivors of COVID-19 are at high risk of posttraumatic stress disorder. Glob Health Res Policy. 2020;5(1):29.
6. Santomauro DF, Herrera AMM, Shadid J. Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. The Lancet. 2021;398(10312):1700-12.
7. Kalueff AV, Tuohimaa P. Experimental modeling of anxiety and depression. Acta Neurobiol Exp (Warsz). 2004;64(4):439-48.
8. Adhanom Ghebreyesus T. Addressing mental health needs: an integral part of COVID-19 response. World Psychiatry. 2020;19(2):129-30.
9. Mak IWC, Chu CM, Pan PC, Yiu MGC, Chan VL. Long-term psychiatric morbidities among SARS survivors. Gen Hosp Psychiatry. 2009;31(4):318-26.
10. Rogers JP, Chesney E, Oliver D, Pollak TA, McGuire P, Fusar-Poli P, et al. Psychiatric and neuropsychiatric presentations associated with severe coronavirus infections: a systematic review and meta-analysis with comparison to the COVID-19 pandemic. Lancet Psychiatry. 2020;7(7):611-27.
11. Holmes EA, O'Connor RC, Perry VH, Tracey I, Wessely S, Arseneault L, et al. Multidisciplinary research priorities for the COVID-19 pandemic: a

call for action for mental health science. Lancet Psychiatry. 2020;7(6):547-60.
12. Asim M, van Teijlingen E, Sathian B. Coronavirus Disease (COVID-19) and the risk of Post-Traumatic Stress Disorder: A mental health concern in Nepal. Nepal J Epidemiol. 2020;10(2):841-4.
13. Mazza MG, De Lorenzo R, Conte C, Poletti S, Vai B, Bollettini I, et al. Anxiety and depression in COVID-19 survivors: Role of inflammatory and clinical predictors. Brain Behav Immun. 2020;89:594-600.
14. Wu C, Hu X, Song J, Yang D, Xu J, Cheng K, et al. Mental health status and related influencing factors of COVID-19 survivors in Wuhan, China. Clin Transl Med. 2020;10(2):e52.
15. World Health Organization (WHO). COVID-19 pandemic triggers 25% increase in prevalence of anxiety and depression worldwide. 2022. Available at: https://www.who.int/news/item/02-03-2022-covid-19-pandemic-triggers-25-increase-in-prevalence-of-anxiety-and-depression-worldwide. Accessed on 24 January 2024.
16. Risal A, Manandhar K, Linde M, Steiner TJ, Holen A. Anxiety and depression in Nepal: prevalence, comorbidity and associations. BMC Psychiatry. 2016;16(1):102.
17. Basnet S, Bhandari B, Gaire B, Sharma P, Shrestha RM. Depression, Stress and Anxiety among Residents of Nepal during COVID-19 Lockdown. J Adv Acad Res. 2021;8(1):53-62.
18. Lovibond PF, Lovibond SH. The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. Behav Res Ther. 1995;33(3):335-43.
19. Pandey A, Sharma C, Chapagain RH. Stress, Anxiety, Depression and Their Associated Factors among Health Care Workers During COVID -19 Pandemic in Nepal. 2020. Available at: http://elibrary.nhrc.gov.np:8080/handle/20.500.14356/1473. Accessed on 24 January 2024.
20. Sanghera J, Pattani N, Hashmi Y, Varley KF, Cheruvu MS, Bradley A, et al. The impact of SARS-CoV-2 on the mental health of healthcare workers in a hospital setting-A Systematic Review. J Occup Health. 2020;62(1):e12175.
21. Yang X, Yu Y, Xu J, Shu H, Xia J, Liu H, et al. Clinical course and outcomes of critically ill patients with SARS-CoV-2 pneumonia in Wuhan, China: a single-centered, retrospective, observational study. Lancet Respir Med. 2020;8(5):475-81.
22. Hammen C. Risk Factors for Depression: An Autobiographical Review. Annu Rev Clin Psychol. 2018;14(1):1-28.
23. Choi EPH, Hui BPH, Wan EYF. Depression and Anxiety in Hong Kong during COVID-19. Int J Environ Res Public Health. 2020;17(10):3740.
24. Li J, Yang Z, Qiu H, Wang Y, Jian L, Ji J, et al. Anxiety and depression among general population in China at the peak of the COVID-19 epidemic. World Psychiatry. 2020;19(2):249-50.
25. Barbosa-Camacho FJ, Romero-Limón OM, Ibarrola-Peña JC. Depression, anxiety, and academic performance in COVID-19: a cross-sectional study. BMC Psychiatry. 2022;22(1):443.
26. Kong X, Zheng K, Tang M, Kong F, Zhou J, Diao L, et al. Prevalence and Factors Associated with Depression and Anxiety of Hospitalized Patients with COVID-19. MedRxiv. 2020;0043075.
27. Hu Y, Chen Y, Zheng Y, You C, Tan J, Hu L, et al. Factors related to mental health of inpatients with COVID-19 in Wuhan, China. Brain Behav Immun. 2020;89:587-93.
28. Ma YF, Li W, Deng HB, Wang L, Wang Y, Wang PH, et al. Prevalence of depression and its association with quality of life in clinically stable patients with COVID-19. J Affect Disord. 2020;275:145-8.

Cite this article as: Gautam P. Mental health dynamics among COVID-19 survivors: anxiety and depression in urban Nepal. Int J Community Med Public Health 2024;11:1468-76.