

COVID-19 Pandemic and its Effect on Mental Health among General Population of Gandaki Province

Sandhya Shrestha,¹ Bandi Gurung,² Bipula Gaire,¹ Tsewang Palmo Gurung,¹ Nikita Shahi¹

¹Nursing Programme, Manipal College of Medical Sciences, Phulbari-11, Pokhara, ²Pokhara Nursing Campus, Institute of Medicine, Tribhuvan University, Ramghat, Pokhara, Nepal.

ABSTRACT

Introduction

Mental health problem is the big issues during COVID-19 pandemic so this study aims to explore the impact of COVID-19 pandemic on the mental health among general population of Gandaki province.

Methods

An Analytical cross sectional study was conducted from Nov/Dec 2021 among 168 general population above 18 years of age. Nepali version of self reporting DASS 21 scale was used for data collection. Data was analyzed using SPSS 19.0 version. Descriptive statistics and inferential statistics chi-square & bivariate logistic regression was used for data analysis.

Results

Among the participants 29.8% had depression, 26.8% had anxiety and 16.1% had stress in varying severity from mild to extremely severe forms. There was significant association between depression and religion, marital status and educational status and there was association between anxiety and stress with marital status and occupation but there is no significant with other demographic variables. Bivariate regression models revealed unmarried respondents were 2.6 times more likely to have depressive symptoms, below Graduation educational status were 3 times more likely to have depressive symptoms. Unmarried respondents were 2.4 times more likely to have anxiety, in the same way unmarried respondents were 5 times more likely to have stress at 95 % CI i.e. p-value <0.05.

Conclusions

More than one fourth respondents was having depressive symptoms, anxious and near to one fifth was stressed so there should be increasing public awareness of mental health and coping strategies is essential to promote mental health to the general population of Gandaki province.

Keywords: COVID-19; pandemic; mental health; general population.

Correspondence: Sandhya Shrestha, Nursing Programme, Manipal College of Medical Sciences, Pokhara, Nepal. Email: Shrestha_sandhu@yahoo.com. Phone: +977-9846038525.

INTRODUCTION

In January 2020, the World Health Organization (WHO) declared the outbreak of novel corona virus disease (COVID-19), a Public Health Emergency of international concern. WHO stated that there is a high risk of COVID-19 spreading to countries around the world.¹ In March 2020, WHO declared COVID-19 as a global pandemic.² Globally, as of 13 Feb 2021, there have been 107,838,255 confirmed cases of COVID-19, including 2,373,398 deaths, reported to WHO.³ In Nepal, from Jan 3 to 13 Feb 2021, there have been 272,557 confirmed cases of COVID-19 with 2054 deaths.⁴ As rapidly spreading global pandemic has raised the level of stress and anxiety among general population. These states of mental health can later show consequences such as posttraumatic stress disorder (PTSD), delirium, psychosis and even suicide. Hence this study aims to explore the impact of COVID-19 on the mental health of individuals.

METHODS

An analytical cross sectional study was conducted at Gandaki Pradesh of Nepal from Nov/Dec 2020. The sample size was determined using the Cochran formula⁵ for infinite population $Z\alpha^2 Pq/d^2$, P considering the prevalence rate of depressive symptoms 34.1%⁶ with 95% confidence interval and allowable error is 5%. The calculated sample size is 175.92. By adding the 10% non-response rates to the sample size was 193.

The DASS 21⁷ well established self reporting instrument for measuring depression, anxiety and stress was used by the research team. Data was collected by using Nepali version tool related to stress, anxiety and Depression (DASS). The instrument is a 4-point

Likert scale (0 = did not apply to me, 1 = applied to me some of the time, 2 = applied to

me to a good part of time and 3 = applied to me most of the time) with seven items each for subscales. The tool has already been tested in Nepal, its psychometric properties validated and reliability was checked.⁸ The internal consistency as reported in the Nepali version was scale 0.77 for Depression, 0.80 for Anxiety, and 0.82 for Stress. Cut off point of the tool was used same as study conducted in Nepal.⁹ Data was conducted online using Google forms app, which was sent to individuals via online platforms, social networks. The objectives was explained and informed consent was taken from the respondents before data collection in the Google form. After one week of non response, questionnaire was sent again. The respondents aged 18yrs above were invited in this online survey. Questionnaire was sent to a total of approximately 450 individuals, of whom 234 replied but 168 met the inclusion criteria. Response rate was 87.0%.

Data collection was done after approval from Institutional Research Committee (IRC) of Manipal Teaching Hospital (MTH). The answers collected via email and exported to Excel for analysis with the SPSS statistical package version 19. We run descriptive statistics, means and frequency distribution for information. First, the association between independent and dependent variables was determined using Pearson's chi-square test. In addition, we ran separate bivariate logistic regression analysis to evaluate the degree of association between socio-demographics and depression, anxiety and stress. The significance level was obtained with p -value $< .05$ and confidence interval (CI) of 95%.

RESULTS

Table 1. Demographic characteristics of the Respondents (n = 168)		
Demographic Variables	Frequency	%
Age in years		
19-40	136	81.0
>41	32	19.0
Mean \pm S.D /Range	32.35 \pm 9.88 in yrs	19-64
Gender		
Female	90	53.6
Male	78	46.4
Religion		
Hindu	132	78.6
Others(Buddhist, Islam, Christian)	36	21.4
Marital status		
Married	109	64.9
Unmarried	59	35.1
Educational Status		
Below Graduation	92	54.8
Graduation & above	76	45.2
Occupation		
Employed	98	58.3
Unemployed	70	41.7
Place of current Residence		
Urban	86	51.2
Semi-urban	82	48.8
District		
Kaski	94	56.0
Others (Syangja, Gorkha, Nawalpur)	74	44.0
Family Status		
Family	156	58.4
Alone	11	4.1
Ownership		
Own	127	75.6
Rented	41	24.4
Source		
Television/Radio/ Newspaper	133	79.2
Others (Health personnel)	35	20.8
Hours		
< 6hrs	147	87.5
>6hrs	21	12.5

Among the 168 respondents majority (81.0%) were between 19-40 yrs, with a mean 32.34 \pm 9.88 years, Range (18-64), More than half (53.6 %) were female, More than three fourth (78.6%) were Hindu, near to two third (64.9%) were married, More than half (54.8%) were having education below graduation, (58.3%) were employed, Almost half (51.2%) were reside in urban area, (56.0%) were from Kaski district, (58.4%) were living with family, Three fourth (75.6 %) were having own house, Majority (79.2%) were having source of information television/radio/newspaper (Table 1).

Table 2. Prevalence of depression, anxiety and stress (n = 168)			
Severity Level (Score)	Depression n (%)	Anxiety n (%)	Stress n (%)
Normal	118(70.2)	123(73.2)	141(83.9)
Mild	18(10.7)	16(9.5)	12(7.1)
Moderate	19(11.3)	8(4.8)	6(3.6)
Severe	6(3.6)	11(6.5)	5(3.0)
Extremely severe	7(4.2)	10(6.0)	4(2.4)

Results showed that more than one fourth (29.8%) were having mild to extremely severe depression, (26.8%) were having mild to extremely severe anxiety and near to one fifth (16.1%) were having mild to extremely severe stress. of the total respondents mild forms of depression, anxiety and stress were present in 10.7%, 9.5% and 7.1% respectively. Moderate forms of depression, anxiety and stress were present in 11.3%, 4.8% and 3.6% respectively and severe forms of depression, anxiety and stress were present in 3.6, 6.5% and 3.0% respectively. Extremely severe forms of depression, anxiety and stress were present in 4.2%, 6.0% and 2.4 % respectively (Table 2).

Table 3. Association of Depression, Anxiety and stress with socio demographic variables (n=168)						
Demographic variables	Depression		Anxiety		Stress	
	yes No (%)	No No (%)	yes No (%)	No No (%)	yes No (%)	No No (%)
Age in years						
19-40	41(82.0)	95(80.5)	38(84.4)	98(79.7)	24(88.9)	112(79.4)
>41	9(18.0)	23(19.5)	7(15.6)	25(20.3)	3(11.1)	29(20.6)
χ^2 value			.486		1.31	
p-value			.486		.252	
Gender						
Female	59(50.0)	31(62.0)	28(62.2)	62(50.4)	17(63.0)	73(51.8)
Male	59(50.0)	19(38.0)	17(37.8)	61(49.6)	10(37.0)	68(48.2)
χ^2 value			1.84		1.14	
p-value			.174		.285	
Religion						
Hindu	34(68.0)	98(83.1)	32(71.1)	100(81.3)	18(66.7)	114(80.9)
Others	16(32.0)	20(16.9)	13(28.9)	23(18.7)	9(33.3)	27(19.1)
χ^2 value	4.72		2.03		2.70	
p-value	.030*		.154		.100	
Marital status						
Married	26(52.0)	83(70.3)	24(53.3)	35(28.5)	18(66.7)	41(29.1)
Unmarried	24(48.0)	35(29.7)	21(46.7)	88(71.5)	9(33.3)	100(70.9)
χ^2 value	5.18		8.94,		14.05	
p-value	.023*		003*		.000*	
Educational Status						
Below Graduation	36(72.0)	56(47.5)	27(60.0)	65(52.8)	18(66.7)	74(52.5)
Graduation & above	14(28.0)	62(52.5)	18(40.0)	58(47.2)	9(33.3)	67(47.5)
χ^2 value	8.53		.681		1.84	
p-value	.003*		.409		.175	
Occupation						
Employed	24(48.0)	74(62.7)	20(44.4)	78(63.4)	10(37.0)	88(62.4)
Unemployed	26(52.0)	44(37.3)	25(55.6)	45(36.6)	17(63.0)	53(37.6)
χ^2 value	3.12		4.81		6.003	
p-value	.077		.027*		.014*	
Place of current Residence						
Urban	26(52.0)	60(50.8)	21(46.6)	65(52.8)	12(44.4)	74(52.5)
Semi-urban	24(48.0)	58(49.2)	24(53.3)	58(47.2)	15(55.6)	67(47.5)
χ^2 value	.019		.503		.586	
p-value	.891		.478		.444	
Source						
Television/Radio/Newspaper	35(70.0)	98(83.1)	33(73.3)	100(81.3)	19(70.4)	114(80.9)
Others	15(30.0)	20(16.9)	12(26.7)	23(18.7)	8(29.6)	27(19.1)
χ^2 value	3.62		1.26		15.09	
p-value	.057		.260		.219	
Hours						
<6hrs	42(84.0)	105(89.0)	38(84.4)	109(88.6)	21(77.8)	126(89.4)
>6hrs	8(16.0)	13(11.0)	7(15.6)	14(11.4)	6(22.2)	15(10.6)
χ^2 value	.797		.525		2.78	
p-value	.372		.469		.095	

X² Pearson chi-square

There was significant association between depression and religion, marital status and educational status and there was association between anxiety/stress with marital status and occupation but there is no significant with other demographic variables (Table 3).

conducted by Verma et al. in India showed 25 %, 28%, 11.6% were moderate to extremely severe depressed, anxious and stressed respectively.¹⁰ Another study conducted in China by Wang et al.¹¹ revealed 16.5% respondents had moderate to severe depression, 8.1% had stress, 28.8%

Table 4. Binary logistic regression analysis of Depression, Anxiety and Stress related factors during the COVID-19 (n = 168)

Factors	Depression	Anxiety	Stress
	OR [95% CI]	OR [95% CI]P	OR [95% CI]P
Religion Hindu Others	.564 , (0.250-1.27)	-	-
Marital status Married Unmarried	2.607*, (1.24-5.45) Ref.	2.41* (1.077-5.39) Ref.	5.071*(1.498-11.062) Ref.
Educational Status Below Graduation Graduation & above	Ref. 3.184*, (1.48-6.83)	-	-
Occupation Employed Unemployed	-	-	.693(.257-1.870) Ref.

*Significant at $p < .005$ OR= odd Ratio CI =95% confidence interval

Bivariate regression models revealed unmarried respondents were 2.6 times more likely to have depressive symptoms with 95% confidence interval. Below Graduation were 3 times more likely to have depressive symptoms with 95% confidence interval. Unmarried respondents were 2.4 times more likely to have anxiety, in the same way unmarried respondents were 5 times more likely to have stressed (Table 4).

DISCUSSION

The study showed in overall 29.8% had depression, 26.8% had anxiety 16.1% had stress in varying severity from mild to extremely severe forms in varying from mild to extremely severe forms. A study conducted by Sigdel et al. in Nepal showed depression, anxiety and depression-anxiety co-morbidity were found to be 34.0%, 31.0% and 23.2% respectively.⁶ Study

had moderate to severe anxiety, &¹² Gao et al. showed 48.3 depression and 22.6% anxiety respectively. These findings are in line with the findings of the present study. A study from Bangladesh¹³ and china,¹⁴ revealed there was significant association between level of education and the mental health symptoms during the pandemic which was consistent with present study. A study from China¹¹ and Iraq¹⁵ showed higher levels of education was significantly associated with depression, anxiety, and stress however another study has not found any association between education and mental health problems.¹⁶ These results contraindicates the present study. A study confirms a decreased depression risk for married, group higher educational level which is in consistent to our findings.^{17,18}

CONCLUSIONS

The study showed more than one fourth respondents had prevalence of depression in the populations of Gandaki province of Nepal during the COVID-19 pandemic and identified a number of significant factors associated with these mental health issues. The findings could serve as a guideline for future studies to assess the impact of the pandemic on mental health of the general population. The study could also draw thoughtfulness of researchers especially

at these difficult times where the pandemic, the troublesome measures, and the financial hardship could all join to make effort a more negative impact on mental health.

Conflict of Interest: The author reports no conflicts of interest in this work.

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