

Mental Health Problems and Social Media Exposure during the COVID-19 Pandemic among Adult Population of Nepal

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ABSTRACT

Background

The COVID-19 pandemic is a significant global health crisis that poses a threat to a person's psychological well-being. A very large number of people got exposed to social network sites during this period which can be hazardous and cause psychological difficulties. There is no prior research or limited studies in this area during emergencies in Nepal.

Objective

To assess the mental health issues and examine their relationship with social media exposure in adults.

Method

A descriptive cross-sectional study was conducted by using a validated scale of Depression, Anxiety, and Stress (DAAS-21) and the Insomnia Severity Index (ISI) among 18 years above adult population. Data were collected through an online survey. Descriptive statistics was used to describe sociodemographic data. Binary logistic regression analysis were performed to examine the relationship between psychological problems and social media exposure.

Result

Out of 422 participants, the overall prevalence of depression, anxiety, stress, and insomnia among the study population were 32%, 28.4%, 24.5%, and 47% respectively. Additionally, 86.5% of individuals said they were frequently exposed to social media. Age, ethnicity, gender, past health problems, and health status were significantly associated with psychological problems. Further, social media exposure was associated with gender and marital status. There was no evidence of an association of psychological problems with social media exposure.

Conclusion

Depression, anxiety, stress and insomnia are common mental health problems found in the adult population during the time of the first wave of COVID-19 pandemic and highly affected were under 25 years age. Female and unmarried adults are using more social media.

KEY WORDS

Adult, COVID-19, Mental health problems, Nepal, Social media exposure

INTRODUCTION

As per data reported by the World Health Organization (WHO) as of January 18, 2022 (CET 4.46 pm), there were 328,532,929 confirmed COVID-19 cases and 5,542,359 confirmed deaths related to COVID-19 globally.¹ This pandemic has spread throughout the globe and threatens the physical and psychological health of people.² On January 13th 2020, the first confirmed case in Nepal was reported in a Nepalese student who travelled from Wuhan China to Nepal.³⁻⁵ On January 18, 2022 the confirmed case of COVID-19 were reported as 8,68,251 among whom 11,624 people died due to COVID-19 as per the Ministry of Health and Population Nepal.⁶

People all around Nepal reported increased levels of anxiety, depression, stress, and other psychological problems.⁷⁻⁹ It has become worldwide problem, people were reporting many psychological problems during this pandemic.^{10,11} Social media plays a significant role in conveying messages during the pandemic. Many information rushed out in the social media and internet is responsible factor for those panic attacks among individual, so it acts both as a blessing and cursed during outbreaks.¹²⁻¹⁴

Though media plays a role to promote preventive behaviors, misinformation overload during outbreaks in media that may, in turn, cause mental health problems.^{11,12} A study from Hong Wuhan, China reported, among two universities students reported mental health problems and that mediated with social media exposure.¹⁰ Similarly, study from Bangladesh reported that the people experienced a higher level of anxiety linked with increased social media exposure.¹⁵ There was very limited information to examine the relationship between social media exposure and psychological problems among the adult population. Thus, the present study aims to find out the psychological problems and examine its associated factors with exposure to social media during COVID-19 outbreaks in Nepal.

METHODS

The study was designed using a descriptive cross-sectional web-based survey for Nepalese citizens from all provinces of Nepal. A total of 500 participants were approached to fill in the survey through different media platforms, including Facebook, Messenger, Viber, and Emails. The survey was conducted from October to November 2020 where 422 participants aged above 18 years old responded to the survey. The study assessed mental health problems using Depression, Anxiety and Stress (DASS-21) developed by Professor Peter Lovibond and Insomnia Severity Index (ISI), developed by Charles M. Morin.^{16,17}

The survey consisted of 61 questions separated into three sections that studied the various aspects of Social media exposure, and psychological problems in Nepalese citizens. The first part assessed demographics, self-health status,

risk perception, and social media exposure questions. Social media exposure was evaluated by asking questions about how often you have seen information related to COVID-19 on social media, such as "Blogs, Facebook, Twitter, Instagram, YouTube, online news portal, etc. Response options were "not at all", "occasionally", "some-times" ; "frequently" and "most frequently". The response is coded into "less" ("not at all" and "occasionally"), "Sometimes" and "frequently" ("frequently" and "most frequently").

The second part of the questions assessed the psychological problems using Depression Anxiety and Stress (DASS-21) scales. The Nepalese and English versions of DASS-21 scale scores ranged from 0-42. The participant's response to each statement scored against a 0-3 score, where 0-3 indicates "did not apply to me to apply very much. The third part consisted of the study of Insomnia using the Insomnia Severity Index which had 7 items scales. The ISI questions asked for sleep difficulty and response option were scored 0-4 indicating "none to very severe".

Written consent was taken from all the participants in the first section of the online survey before they proceeded with the questionnaire. This survey was approved by the National Health Research Council with reference number (2812). The data collected from the Google survey were downloaded in MS-Excel, data was cleaned and exported to SPSS version 25 for analysis. Descriptive statistics were used to assess the prevalence of anxiety, depression, stress, and insomnia and perception of the role the media played during the pandemic. Binary logistic regression analysis was used to examine the relationship between psychological problems and social media exposure.

RESULTS

A total number of 422 participants completed the survey questionnaire. Participants aged between 18-25 years were high in proportions representing 60.7%. A larger number of females, (67.1%) took part in the study. More than half (52.4%) of the participants were unmarried, 73.5% of the caste reported theirs as Brahmin/Chhetri. Among study participants, 57.9% of the respondents studied bachelor and 28.9% studied master and above. Further, 48.1% of respondents were students and 34.8% reported they worked in government or private sectors, 49.4% of responses in the present study belonged to Gandaki province. Less proportion 5.9% of the respondents said that they had mental health problems in the past, only 0.5% of respondents said they tested positive with novel coronavirus and 86.7% said that their health status was good (Table 1).

Table 2 presented the frequency and percentage of social media exposure, access, and news. Out of 422 participants, 57.6% of respondents spent less than 1 hour on social media to watch COVID-19 related news and 45.5% of people never shared COVID related posts on social media. Most of

Table 1. Socio-demographic Characteristics of Participants (n=422)

Variables	Frequency (f)	Percentage (%)
Age (in years)		
18 -25	256	60.7
26 -35	121	28.7
36+	45	10.6
Gender		
Female	283	67.1
Male	139	32.9
Marital Status		
Married	201	47.6
Unmarried	221	52.4
Caste/Ethnicity		
Brahmin/Chhetri	310	73.5
Dalit	7	1.7
Jana Jaati	59	14.0
Madhesi/Muslim/others	46	10.8
Education status		
SEE or below	6	1.4
Higher secondary	50	11.8
Bachelor	244	57.9
Master and above	122	28.9
Occupation		
Business	19	4.5
Service	147	34.8
Student	203	48.1
Unemployment/others	53	12.6
Current Residence		
Province 1	13	3.1
Province 2	34	8.1
Province 3	93	22.0
Province 4	198	46.9
Province 5	49	11.6
Province 6	12	2.8
Province 7	23	5.5
Past Mental Health Problems		
Yes	25	5.9
No	397	94.1
Infected by COVID-19		
Yes	2	0.5
No	366	86.7
Don't Know	54	12.8
Self-reported health		
Good	366	86.7
Fair	56	13.3

the respondents (90.5%) of the present study were using social media in any spare time and 46.0% of them stayed online longer than they planned. Findings indicate that among the participants 23.7% frequently avoid watching

Table 2. Information of respondents related to social media (n=422)

Variables	Frequency (f)	Percentage (%)
Time spent on social media		
≤ 1 hr	243	57.6
> 1 hr	179	42.4
Sharing of COVID-19 related post		
Never	192	45.5
Everyday	56	13.3
Multiple times a day	15	3.6
Weekly	159	37.7
Access to social media		
Any spare timing	382	90.5
Every time	40	9.5
Longer stay online than planned		
Never	50	11.8
Sometimes	178	42.2
Very often	194	46.0
Avoiding watching COVID-19 news		
Rarely	164	38.9
Sometimes	158	37.4
Frequently	100	23.7
Concerned about COVID-19		
Sometimes concerned	189	44.8
Frequently concerned	233	55.2
Proactively check news related to COVID-19		
Rarely	62	14.7
Sometimes	155	36.7
Frequently	205	48.6

coronavirus-related news. However, 55.2% of them were very concerned about this pandemic and 48.6% of them proactively checked news related to COVID-19 (Table 2).

The adult population’s exposure to social media during the time of the COVID -19 pandemic showed that a larger proportion, (86.5%) of participants, frequently used social media and 8.3% less exposure to social media (Fig. 1).

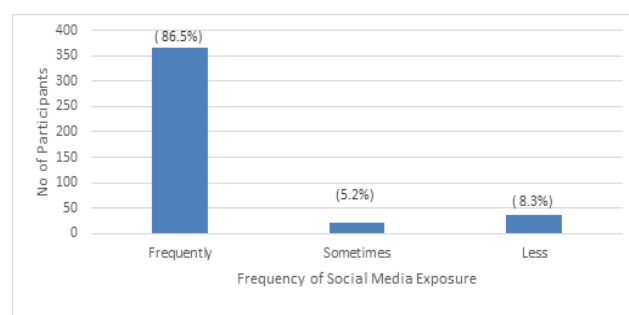


Figure 1. Social media exposure of participants during COVID-19

With regards to the prevalence and severity of Depression, Anxiety and Stress showed that few proportions of the participants (14.4%) reported a moderate level of depression. An equal proportion of (3.8%) respondents had self-reported symptoms of the severe and extremely severe level of depression respectively. Overall, 32.0% of respondents reported some forms of mild to severe depression symptoms. In addition, Anxiety symptoms were reported moderately by 12.8%, severe to extremely severe by 4.3% and 7.5% respectively. Similarly, 24.5% of adults reported some forms of mild to extremely severe stress. Further, 7.6% of respondents had moderate and 5.7% had severe symptoms of stress (Fig. 2).

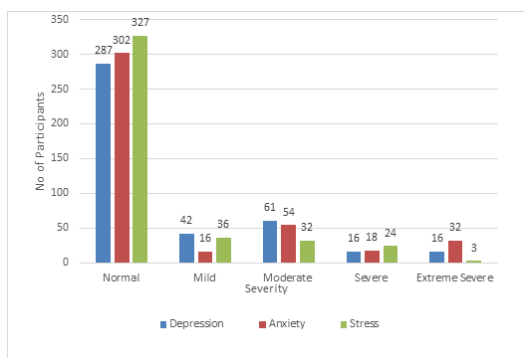


Figure 2. Prevalence and severity of Depression, Anxiety, and Stress

Further, overall 53% of the participants did not have any sleep problems, while 38.9% had sub threshold insomnia or mild insomnia. And 7.6% and 0.5% of participants had moderate or clinically significant moderate severity and severe insomnia respectively (Fig. 3).

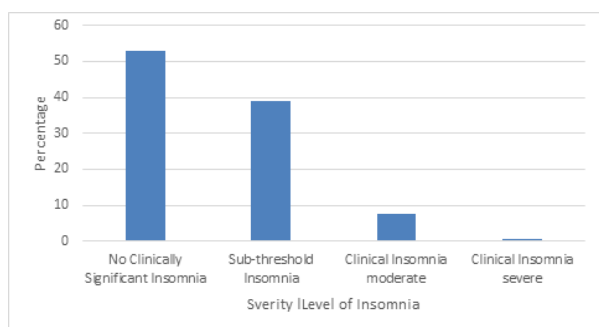


Figure 3. Prevalence of Self-reported Insomnia

As shown in table 3, binary logistic regression analysis found that participants aged 18-25 years 2.53 (95% CI: 1.60-3.97) times more likely to have depression than age group 26 years and above. Further, individuals who belonged to other caste had a 1.73 (95% CI: 1.10-2.71) times higher risk of developing depression as compared to the Brahmin/Chhetri caste. Also, the adults who reported their health status fair significantly reported higher odds (OR 3.42 95% CI 1.90-6.14) than those who reported their health as good. With regards to Anxiety, participants who belonged to the age group 18-25 years were 2.32(95% CI: 1.45-3.7) times more likely to have anxiety than the age group 26

years and above. Further, individuals who belonged to other castes had a 1.78 (95% CI: 1.12-2.8) times higher risk of developing anxiety as compared to the Brahmin/Chhetri caste. The adults who had past mental health problems 2.93 times higher risk of having anxiety than those who did not have any past mental health problems. Also, adults who reported their health status fair significantly reported higher odds (OR 3.53 95% CI 1.96-6.33) than those who reported their health as good. In addition, Adults who had bachelor’s degrees, female, and unemployed/students were likely to have anxiety accompanied by high odds.

Next, participants age group 18-25 years had 2.27 (95% CI 1.36-3.78) times’ high chances of having stress compared to the age group 26 years and above. Females (95% CI 1.02 -2.89), were 1.72 times more likely to develop stress compared to males. In addition to this, participants who belonged to other ethnic groups than Brahmin/Chhetri completed a bachelor’s degree, resided in provinces 2 and 5, had emotional issues in the past and poorly rated health status had higher odds, as they are likely to have more stress.

Regarding Insomnia, participants age group 18-25 years had 1.48 (95% CI .96-2.11) times’ high chances of having stress compared to the age group 26 years and above. In addition to this, participants who are female, unmarried, belonged to other ethnic groups than Brahmin/Chhetri, completed a bachelor degree, resided in provinces 2 and 3, had mental problems in past and poorly rated health status had higher odds, as they are likely to have more Insomnia.

Regarding social media exposure, female participants were 2.20 (95% CI 1.25-3.88) times more likely to use social media compared to males. Further, unmarried adults were 2.74 (95% CI: 1.51 – 4.98) times more likely to be exposed to social media than married. In addition to this, participants who completed a bachelor’s degree resided in provinces 2, 3, 4, 5 and 7 had higher odds, as they are likely to have more exposure to social media (Table 3).

Factors associated with Depression, Anxiety, Stress, and Social Media Exposure are presented in table 4. The independent variables that showed the significant p-value < 0.02 in the bivariate analysis further analysis performed with adjusting other factors. With regards to age, the adjusted odds were higher among the age group of 18-25 years for depression, anxiety and stress. Gender was associated with social media exposure with females being more likely to be exposed 2.14 times higher than males (95% CI: 1.35-3.82). Also, results showed that unmarried adults had a 2.68 (95% CI: 1.47-4.88) times higher chance to utilize social media than married adults during the times of pandemic. Ethnicity was associated with depression and anxiety with higher odds OR 1.75, 95% CI: 1.09-2.81 and OR 1.70, 95% CI: 1.04-2.78 respectively. Brahmin/Chhetri were less likely to have depression and anxiety than other ethnic groups. Those who had past mental problems were likely to have anxiety and stress. In addition, those who had good

Table 3. Predictors of Psychological Problems and SME

Covariate	Depression			Anxiety			Stress			Insomnia			SME		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p	OR	95% CI	P
Age in (years)															
18-25	2.53	1.60-3.97	.000	2.32	1.45-3.7	.000	2.27	1.36-3.78	.002	1.48	.96-2.11	.076	1.588	.90-2.78	.106
≥ 26	1		1	1		1	1		1		1				
Gender															
Male	1			1			1			1			1		
Female	1.316	0.84-2.05	.225	1.34	.849-2.14	.205	1.72	1.02-2.89	.041	1.054	.701-1.583	.800	2.209	1.25-3.88	.006
Marital Status															
Married	1			1			1			1			1		
Unmarried	.916	0.60-1.37	.673	.825	.540-1.26	.373	.898	.569-1.41	.645	1.073	.731-1.573	.719	2.745	1.513-4.980	.001
Caste/Ethnicity															
Brahmin/Chhetri	1			1			1			1			1		
Others	1.731	1.10-2.71	.017	1.78	1.12-2.8	.014	1.47	.895-2.41	.128	1.18	.76-1.82	.446	.752	.410-1.37	.355
Educational Status															
Higher secondary and below	1			1			1			1			1		
Bachelor	1.191	.641-2.21	.580	1.10	.585-2.10	.751	1.16	.579-2.36	.662	1.117	.624-1.998	.710	1.236	.532-2.871	.623
Master	.658	.327-1.32	.241	.780	.382-1.59	.494	.898	.412-1.95	.787	.857	.454-1.619	.635	.850	.349-2.067	.720
Occupation															
Business/service	1			1			1			1			1		
Student / Unemployment	.798	.307-2.07	.643	1.11	.394-3.17	.834	.805	.282-2.29	.685	.392	.146-1.05	.063	.744	.167-3.311	.698
Residence															
Province 1	1			1			1			1			1		
Province 2	2.250	.58-8.73	.241	1.60	.434-5.89	.480	1.07	.271-4.27	.917	2.439	.661-9.003	.181	3.100	.538-17.873	.206
Province 3	0.873	.24-3.08	.833	.588	.176-1.96	.389	.783	.221-2.77	.704	1.244	.389-3.985	.713	1.693	.413-6.933	.464
Province 4	1.026	.304-3.45	.967	.512	.160-1.63	.260	.483	.141-1.65	.248	.878	.285-2.706	.820	2.283	.585-8.907	.235
Province 5	1.091	.291-4.08	.897	.850	.240-3.00	.801	1.09	.291-4.08	.897	.875	.256-2.989	.831	1.800	.394-8.215	.448
Province 6	1.607	.310-8.32	.572	.533	.096-2.97	.474	.750	.129-4.35	.749	1.633	.335-7.954	.544	.900	.143-5.646	.910
Province 7	.625	.134-2.91	.549	.444	.100-1.97	.287	.214	.033-1.38	.106	.622	.155-2.492	.503	1.425	.265-7.657	.680
Past mental problems															
No	1			1			1			1			1		
Yes	2.056	.912-4.63	.082	2.93	1.29-6.63	.010	2.92	1.28-6.68	.011	2.100	.906-4.866	.083	.467	.178-1.224	.121
Self-reported health															
Good	1			1			1			1			1		
Fair	3.421	1.90-6.14	.000	3.53	1.96-6.33	.000	2.29	1.25-4.22	.007	1.366	.770-2.42	.286	.750	.345-1.632	.468

health status were less likely to have depression, anxiety, and stress compared to those who had poor health (Table 4).

There was no statistically significant relationship between psychological problems and social media exposure. However, adults who had depression, stress, and sleep problems were less likely to use social media. Further, participants who had anxiety were 1.56 times more likely to use social media than others (Table 5).

DISCUSSION

In our study, 57.6% adults (18-60 years) spent less than 1 hour on social media to watch COVID related news. During the online survey conducted in Thailand, only 37% participants were exposed to the information for less than one hour each day which is contradictory to the present study results.¹⁸ However, 55.2 percent of them were frequently concerned about COVID-19 and 48.6 percent of them proactively checked the news related to COVID-19.

Table 4. Factors associated with Depression, Anxiety, Stress, and Social Media Exposure

Covariate	Depression		Anxiety		Stress		SME	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Age in (years)								
18 - 25	***2.46	1.55- 3.92	***2.78	1.40 - 3.69	**2.27	1.35-3.82		
≥ 26+	1		1		1			
Gender								
Male							1	
Female							**2.14	1.20 - 3.80
Marital status								
Married							1	
Unmarried							***2.68	1.47 - 4.88
Caste/Ethnicity								
Brahmin/Chhetri	1		1					
Others	**1.75	1.09-2.81	*1.70	1.04 - 2.78				
Past mental health problems								
No			1		1			
Yes			2.18	.90- 5.25	*2.67	1.13 - 6.31		
Self-reported health								
Good	1		1		1			
Fair	**3.51	1.921- 6.44	***3.37	1.83 - 6.24	*2.02	1.07-3.79		

Table 5. Relationship of Psychological Problems and Social Media Exposure

Variables	Social Media Exposure		
	OR	95% CI	P-value
Depression			
Yes	.932	.515-1.68	0.81
No	1		
Anxiety			
Yes	1.56	.873-2.81	.133
No	1		
Stress			
Yes	.708	.377-1.32	.282
No	1		
Insomnia			
Yes	.903	.517-1.57	.720
No			

The findings of this study were similar to those of a study conducted in Pakistan, demonstrating that people were heavily exposed to news related to the COVID in social media.¹⁹ A previous study in Wuhan, China found that 82 percent of the participants were regularly exposed to social media which is slightly higher with findings of the current study.¹¹ Data on risk perception in the current study showed that 53.1% of adults perceived themselves to be at high risk, which contradicts the results reported in a survey conducted among Bolivia’s adult population.¹²

As per the current study 32%, 24.6%, and 53% of the participants experienced mild to severe depression,

anxiety, and stress respectively. Similar conclusion was obtained in a study of psychological response in this pandemic of general population in China. It was found that 30.3% and 36.6% of people were considered to suffer from mild to severe forms of depression and anxiety. The results were different for stress as only 32.03% people were found to have stress.²⁰ The longer duration of the pandemic affecting physical, financial, social, spiritual and social factors of life may have contributed in the development of mental health problems. In a study from Nepal by Karmacharya et al. 30.4%, 28.6% and 28.6% have depression, anxiety and stress respectively.²¹ Study from the UK found that prevalence of depression and anxiety were 63.7% and 56.6% respectively.²² The finding regarding psychological distress was contrary to the present study, only 11% of participants had mild to moderate distress in study by Shrestha et al.²³

The female gender and poor self-reported health status were associated with psychological problems like stress and anxiety, the study findings are almost similar to a study by Wang et al.²⁰ The present study adjusted odds were higher among 18-25 years of adults for depression, anxiety and stress which is contrary to a study conducted by Gao et al. among Chinese citizens whereas almost similar to a study by Hossain et al. in Bangladesh.^{11,15}

Further, the study results found that psychological problems were not significantly associated with social media exposure. The study of Wuhan China and Bangladesh found mental health problems were positively associated with frequent exposure to social media contradicting the present study result.^{11,15} Study conducted in Pakistan

showed that social media used during the pandemic were linked to the COVID-19 fear and depression that contradicts the present study result.²⁴ The present study outputs are similar to the findings from Pakistan where there was no strong relationship between social media exposure and mental health issues like depression and anxiety.¹⁹ The extended duration of lockdown due to COVID-19 and increasing economic crisis might affect mental health and psychological well-being of Nepalese population. Depression, stress, anxiety are the most common mental problems that people develops during pandemic, these symptoms are highly seen in people experiencing symptoms of covid infection recently and comorbid conditions.²⁵ As the pandemic across the world, affecting cognitive, mental, psychosocial health of all people specially the vulnerable groups.²⁶ Loneliness and socially isolated people are more risk of having mental health problems, further these symptoms correlated with depression.²⁷⁻³⁰

This study is limited to the adult population of age 18-60 years only. An online survey is limited to those participants who are using social media within the network of the investigators. Thus, the study might have omitted the population who are not using social media. As the study did not define focus population and the online link was recirculated, the interpretation of the result is challenging.

There is a need to initiate an operational framework of mental health for all levels and supportive guidelines for the aftermath mental health crisis. Further, this study finding helps to better understanding of the use of social media during pandemic.

CONCLUSION

The study reported the moderate to severe level of mental health problems among adults during first wave of COVID-19, pandemic. The female participants and those having anxiety were likely to have been exposed more in social media. During the pandemic, various measures had been implemented to manage the mental health issues, however, it has not been well recognized and managed. Thus, there is important to recognize and manage long-term psychological consequences of the pandemic among adults in Nepal.

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