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Psychological Distress in the COVID-19 Patients and their Family Members of Makawanpur District, Nepal

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ABSTRACT

The prevalence of COVID-19 and its effect was spread all over the worldwide. Nepal also suffered bitterly from the effect of COVID-19. The main objective of this study is to identify the psychological distress in the COVID-19 patients and their family members living in Makawapur Gadhi Rural Municipality of Makawanpur district. The data was collected from 30 households who were suffering from the infection of COVID-19. The result shows that 26.7% of the respondents felt no distress, while 60% respondents felt moderate distress and 13.3% respondents felt severe distress from pandemic of COVID-19. From the statistical analysis, there was no significant effect of demographic variables (Gender, Caste, Age, Education, Employment Status, and Patients types) on level of distress. There is need to provide the socio-psychological counselling to the COVID-19 patients and family members to manage their distress.

Keywords: COVID-19, Distress, Family, Members, Makawanpur, Patient, Psychological

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INTRODUCTION

The novel corona virus disease that emerged at the end of 2019 began threatening the health and lives of millions of people after a few weeks. Highly contagious with the possibility of causing severe respiratory disease, it has quickly impacted governments and public health systems as well as day to day life of each individual. Basically, poor, disadvantage, people having with chronic health problem, elder people became more vulnerable during the lockdown period.

China was the first country that identified the novel corona virus disease (COVID-19) as the cause of the outbreak. On January 23, Chinese authorities-imposed lockdown measures on ten cities in an unprecedented effort to contain the COVID-19 outbreak. The World Health Organization (WHO) declared the COVID-19 outbreak an international public health emergency on January 30, 2020(Mahase, 2020). Outbreaks such as COVID-19 pandemic has negative psychological impact which increases demand for mental healthcare needs (Roy, et al., 2020).Factors like lockdown, social isolation, disruptions in life routines may cause peritraumatic distress (PD)(Chaix, Delamon, Guillemasse, Brouard, & Bibault, 2020).The COVID-19 epidemic has caused serious threats to people's physical health and lives. It has also triggered a wide variety of psychological problems, such as panic disorder, anxiety and depression (Qiu, et al., 2020).

Corona virus disease 2019 (COVID-19) pandemic has had a significant impact on public mental health. Psychological impact was assessed using the Arabic version of Depression, Anxiety, and Stress Scale (DASS-21). A descriptive study of 1597 participants from Saudi Arabia shows that in total, 17.1% reported moderate to severe depressive symptoms; 10% reported moderate to severe anxiety symptoms; and 12% reported moderate to severe stress levels(Alamri, et al., 2020). Similarly, a review article conducted in China shows that stress was the most prevalent (48.1%) mental health consequence of Covid-19 pandemic, followed by depression (26.9%) and anxiety (21.8%). After performing subgroup analysis, prevalence of depression and anxiety in both females and frontline health care workers were high as compared to the prevalence in general Chinese population (Bareeqa, et al., 2020).

A study was conducted with aim to investigate the effects of COVID-19 quarantine on the emotional functioning of confined Spanish individuals after 8 weeks of lockdown by means of a cross-sectional study. 906 Spanish adults participated in the study. The finding showed an increase in negative effects (e.g., "upset," "afraid," "distressed") and a decrease in positive affects after 8 weeks under lockdown, as well as a general decline in overall mood. The largest increases in negative effects were observed in young adults (18–35 years) and women (Gismero-González, et al., 2020). One study conducted in India showed that the major mental health issues reported were stress, anxiety, depression, insomnia, denial, anger and fear. Children and older people, frontline workers, people with existing mental health illnesses were among the vulnerable in this context. COVID-19 related suicides have also been increasingly common (Roy, et al., 2020).

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The study has reviewed available related studies conducted in Nepal during the lockdown period which was focused to measure the mental impact of COVID-19. A study conducted in Nepal during the lockdown period from April 9 to April 16, 2020 using an e-questionnaire. The findings shows that the prevalence rates of depression, anxiety and depression-anxiety co-morbidity were found to be 34.0%, 31.0% and 23.2% respectively. The multi-variate analysis showed that females, those living alone, health professionals and those who spent more time in accessing information about COVID-19 were significantly more likely to have depression, anxiety and depression-anxiety co-morbidity (Sigdel, et al., 2020). Similarly, another study conducted in Kathmandu valley of Nepal among the 45 residents by using the COVID-19 peritraumatic distress index (CPDI) shows that 82.2% reported normal distress and mild to moderate peritraumatic distress was found among 17.8%(Samson & Shah, 2020).

Based on the review of previous literatures, the study identifies the research gap in the particular location of Makawanpur Gadi Rural Municipality. There was impact of COVID-19 in this area also but no any study was conducted so the study set the main objective to identify the Psychological Distress in the COVID-19 Patients and their Family Members of Makawanpur District, Nepal.

MATERIALS & METHODS

The study was based on the quantitative design because structured survey questionnaire was used to collect the data. The study had adopted the perspective research design because the selected respondents were asked to recall their past when they were in quarantine period to know their mental status. Simple random sampling technique was used to select the respondents. The study team identified the number of COVID-19 patients with the consultation of health facilities then from the list of patients, random numbers were selected then selected patients were contacted by telephone. Total 30 households were selected then 15 COVID-19 patients and 15 family members of COVID-19 patients were asked the questions. The study had adopted the standard checklist to measure the psychological impact of COVID-19. The COVID-19 Peritraumatic Distress Index (CPDI) questionnaire (survey questionnaire attached as Supplementary file) was adapted from the Shanghai Mental Health Centre (Qiu, et al., 2020). Modified version of the COVID-19 Peri-traumatic Distress Index (CPDI) with 24 items is used to measure outcome. For each of the 24 items, participants were asked to self-rate psychological impact related to COVID-19 and frequency of the activities in a day at the time of Quarantine period. The 5-point Likert scoring system was used (never-0, occasionally-1, sometimes-2, often-3, always-4) to rate the psychological impact. A score of 0–28 is normal or no distress. A total score between 29 and 51 indicates mild to moderate distress and a score of greater than and equal to 52 indicates severe distress (Shrestha, et al., 2020).

The respondents were provided the direction to rate the psychological impact as below:
Never = not even once,
Occasionally = once to three times,
Sometimes = three to six times,

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Often = six to nine times,
Always = almost whole day

The study was conducted in the Makawanpur Gadhi Rural Municipality of Makawanpur district from Dec 1 to 15, 2020. The collected data was analyzed from the statistical software (SPSS v.20). the cross-tabulation and Chi-Square test was run to analyze the data.

RESULTS AND DISCUSSIONS

The study has analyzed the collected data to explore the mental health status of COVID-19 patients and their family members when they were in quarantine period. The following Figure 1 shows that moderate level mental distress was higher(60%) among the respondents followed by 26.67% had normal or no distress, whereas 13.33% had severe level of mental distress.

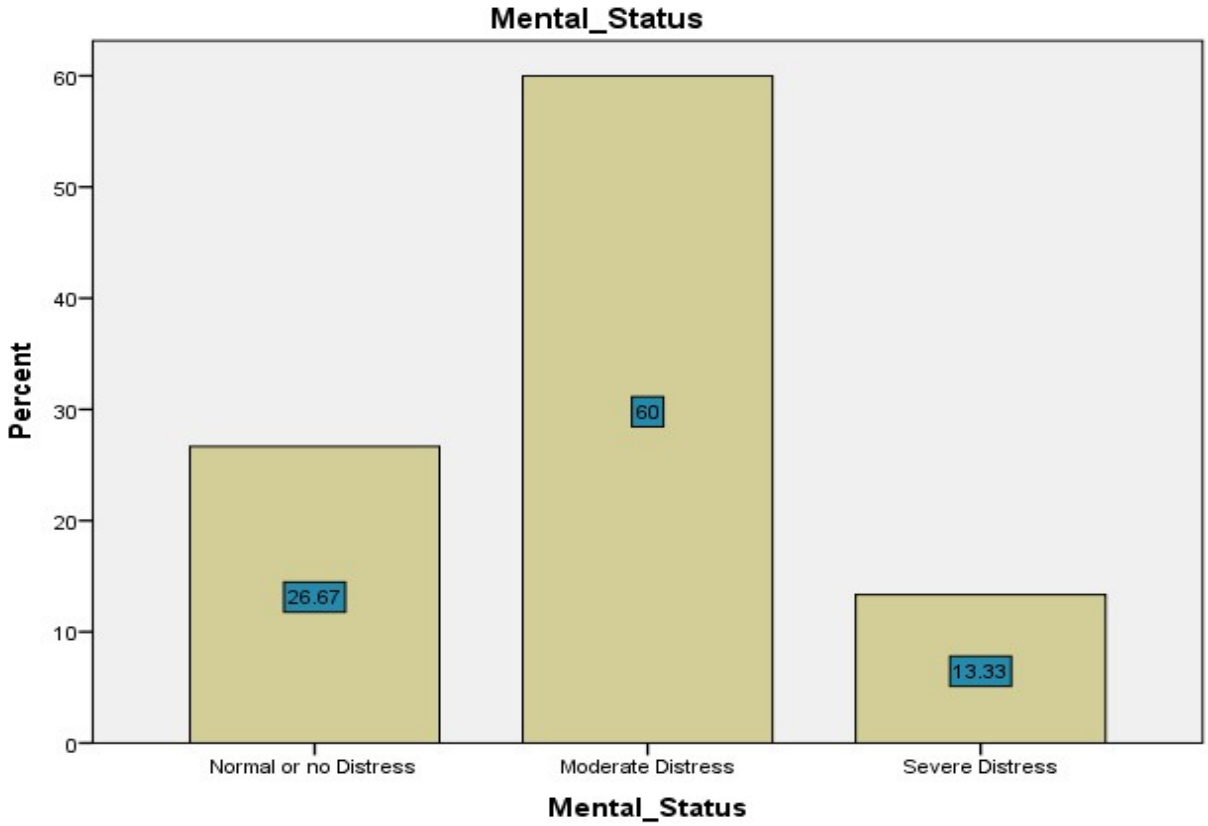

Figure 1: Mental Status of COVID-19 Patients and their family members

The finding of this study was compared with the previous study which had measured the mental status by using the same tools (CPID). A previous study conducted among the Nepalese community dwellers by using the COVID-19 Peritraumatic Distress Index (CPDI) questionnaire adapted from the Shanghai Mental Health Centre. The data was collected from 11 April-17 May 2020. The finding shows that in total, 88.5% of the respondents were not in distress (score less than 28) while, 11% had mild to moderate distress and 0.5% had severe distress(Shrestha D. B., et al., 2020). Similarly, another previous study conducted in Kathmandu valley of Nepal among

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the 45 residents by using the COVID-19 peritraumatic distress index (CPDI) shows that 82.2% reported normal distress and mild to moderate peritraumatic distress was found among 17.8% (Samson & Shah, 2020). The findings of each previous study were found varied with the finding of this study. There was higher number of respondents reported no distress in both research whereas higher number of respondents of this study reported moderate level distress. The previous study showed that there almost zero respondents had severe distress whereas this study had found 13.33% had severe distress. The previous study was conducted among the general people in the initial phase of COVID-19 when prevalence was less. But this study was conducted in December 2020 when people had suffered through long time of lockdown, infection rate and death rate was increasing among the COVID-19 patients.

1. Gender wise level of mental distress

The study had analyzed the data from the gender perspectives to know the mental distress in male and female. Both male and female respondents were asked their level of mental distress due to COVID-19.

Table 1: Gender wise level of mental distress

		Gender		Total
		Male	Female	
Mental status	Normal or no Distress	28.6%	25.0%	26.7%
	Moderate Distress	50.0%	68.8%	60.0%
	Severe Distress	21.4%	6.2%	13.3%
Total		100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.763[a]	2	.414

Source: Field Study, 1 to 15 December 2020

It can be interpreted from the data of Table 1 that, 26.7% of the respondents felt no distress, while 60% respondents felt moderate distress and 13.3% respondents felt severe distress from pandemic of COVID-19. If we compare the responses of respondents between male and female, then it is known that 28.6% male and 25% female respondents had no distress, 50% male and 68.8% female had moderate distress while 21.4% male and 6.2% female respondents had severe distress. The data indicates that the severe level distress was 3 times higher among the male than female respondents.

The statistical analysis of Pearson Chi-Square test shows that there was no significant association between the male and female respondents regarding gender wise level of mental distress because the value of $p = 0.414$ which is greater than 0.05 significant level. In total, it is reported that there were no differences between the male and female in the level of mental distress. There was no effect of gender to determine the level of mental distress. Some of the previous literatures had reported that the depression and anxiety was higher among the female than the male which is not found in this study.

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2. Caste wise level of mental distress

Similarly, the study had also observed the mental health status based on the caste group. In Nepalese context, there are more than hundred caste and ethnic groups. They had their own language, culture, belief system, occupation and income sources. The socio-economic status varied between the caste group also. Brahamin and Chhetri communities have comparatively higher socio-economic status than the Dalit community. Dalit communities are poor and backward in development sectors. The lockdown of COVID-19 brought the drastic changes in socio-economic status of Nepalese society. Caste wise, the poor communities who were dependent on the daily wages, were more affected from the lockdown.

Table 2: Caste wise level of mental distress

		Caste			Total
		Brahamin	Chhetri	Dalit	
Mental status	Normal or no Distress	26.1%	40.0%	00.0%	26.7%
	Moderate Distress	65.2%	40.0%	50.0%	60.0%
	Severe Distress	8.7%	20.0%	50.0%	13.3%
Total		100.0%	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.895[a]	4	.420

Source**:** Field Study, 1 to 15 December 2020

If we compare the responses of respondents between Brahamin, Chhetri and Dalit, data presented in Table 2 shows that comparatively higher number of Chhetri (26.1% Brahamin, 40% Chhetri respondents) felt no distress, similarly, higher number of Brahamin (65.2% Brahamin, 40% Chhetri and 50% Dalit) felt moderate distress, while higher number of Dalit (8.7% Brahamin, 20% Chhetri and 50% Dalit respondents) felt severe distress at the time of infection of COVID-19. In total, mathematical comparison shows that higher number of Dalit communities felt severe distress. It might be the causes of low level of economic status and lack of access on health facilities.

The statistical analysis of Pearson Chi-Square test shows that there was no significant association between the Brahamin, Chhetri and Dalit caste respondents regarding Caste wise level of mental distress because the value of $p = 0.420$ which is greater than 0.05 significant level. The result indicates that there was no effect of caste group in determining the level of distress.

3. Age wise level of mental distress

Age is one determinant for the health condition. It is general understanding that elder people become more vulnerable than the adult one. In this connection, the study had analyzed the level of distress based on the age group. The data presented in Table 3 shows the result.

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Table 3: Age wise level of mental distress

		Age			Total
		Up to 25 Years	26 to 50 Years	51 to 75 Years	
Mental status	Normal or no Distress	75.0%	15.8%	28.6%	26.7%
	Moderate Distress	00.0%	73.7%	57.1%	60.0%
	Severe Distress	25.0%	10.5%	14.3%	13.3%
Total		100.0%	100.0%	100.0%	100.0%

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Age	30	23	74	40.63	13.785

Source: Field Study, 1 to 15 December 2020

Above Table 3 show that, 75% respondents up to 25 years old, 15.8% respondents from 26 to 50 years old and 28.6% respondents from age 51 to 75 years reported that they had felt no distress, followed by 73.7% respondents from 26 to 50 years old and 57.1% respondents from age 51 to 75 years felt moderate distress whereas, 25% respondents up to 25 years old, 10.5% respondents from 26 to 50 years old and 14.3% respondents from age 51 to 75 years felt severe distress from pandemic of COVID-19. The average age of respondents was from minimum 23 years to 75 years with mean of 40.63 years. The data indicates that the highly productive age groups (26 to 50 Years) had low level of severe distress than the under 25 age group and above 51 age groups. It results that younger age group and elder age groups had more distress than younger age group.

The finding of this study is discussed with the previous study also. The finding of previous study has supported the result of this study. A meta-analysis with available national reports on May 7, 2020 from China, Italy, Spain, United Kingdom, and New York State shows that in total of 611,1583 subjects were analyzed and 141,745 (23.2%) were aged ≥80 years. The overall mortality rate was 12.10% and it varied widely between countries, the lowest being in China (3.1%) and the highest in the United Kingdom (20.8%) and New York State (20.99%). Mortality was <1.1% in patients aged <50 years and it increased exponentially after that age in the 5 national registries. As expected, the highest mortality rate was observed in patients aged ≥80 years. All age groups had significantly higher mortality compared with the immediately younger age group. The largest increase in mortality risk was observed in patients aged 60 to 69 years compared with those aged 50 to 59 years (odds ratio 3.13, 95% confidence interval 2.61-3.76) (Bonanad, et al., 2020).

4. Correlation between Age and level of distress

The study had run the correlation test to check the relationship between the age and level of mental status. There was no significant effect of age on mental status of COVID-19 patients and their family as the data of Table 4.

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Table 4: Correlation between Age and level of distress

Correlations			
		Age	Mental status
Age	Pearson Correlation	1	.013
	Sig. (2-tailed)		.946
	N	30	30
Mental status	Pearson Correlation	.013	1
	Sig. (2-tailed)	.946	
	N	30	30

Source: Field Study, 1 to 15 December 2020

The relationship between age and level of stress were computed by using the Pearson correlation test. The results show that there was no significant relationship between age and level of stress (r=013, P=.946). The r value shows the positive relationship between the age and level of mental distress. If there is 1-point change in age then it will change in level of distress by .013 points. The result indicates that statistically there was no relationship between the age and mental status of distress though r value shows that with the growing of age, mental distress could be slightly increased.

5. Education wise level of mental distress

Education is the light of knowledge so it is expected that educated people can have better knowledge to manage their life properly. Here, it is assumed that the level of distress can be different between the illiterate and literate people. But the data presented in Table 5 shows that statistically, there was no difference between the illiterate and literate respondents.

Table 5: Education wise level of mental distress

		Education		Total
		Illiterate	Literate	
Mental status	Normal or no Distress	25.0%	26.9%	26.7%
	Moderate Distress	50.0%	61.5%	60.0%
	Severe Distress	25.0%	11.5%	13.3%
Total		100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.553[a]	2	.758

Source: Field Study, 1 to 15 December 2020

Mathematically, there was a slight difference in percentage of response between the illiterate and literate respondents. Above table show that 25% illiterate and 26.9% literate respondents felt no distress, followed by 50% illiterate and 61.5% literate felt moderate distress, while 25% illiterate and 11.5% literate respondents felt severe distress due to pandemic of COVID-19.

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The statistical analysis of Pearson Chi-Square test shows that there was no significant association between the Illiterate and Literate respondents regarding level of mental distress education wise because the value of p = 0.758 which is greater than 0.05 significant level. The result indicates that there was no effect of education on level of distress. Either literate or illiterate had felt distress of COVID-19 similarly.

6. Employment status wise level of mental distress

The study had measured the level of distress of respondents based on their employment status. Employment status determines the socio-economic status of people. It is assumed that if one has employment then s/he has regular income sources which can be used to spend for the daily needs, health and education. Here, it is expected that there may be differences in level of distress between employed and unemployed respondents. But statistical result shows that there were no differences between the employed and unemployed respondents.

Table 6: Employment status wise level of mental distress

		Employment		Total
		Employed	Unemployed	
Mental status	Normal or no Distress	23.1%	29.4%	26.7%
	Moderate Distress	69.2%	52.9%	60.0%
	Severe Distress	7.7%	17.6%	13.3%
Total		100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.984[a]	2	.611

Source: Field Study, 1 to 15 December 2020

Respondents were asked their level of mental distress based on their employment status. Above table show that 23.1% employed and 29.4% unemployed respondents reported that they had felt no distress, followed by 69.2% employed and 52.9% unemployed felt moderate distress, while 7.7% employed and 11.5% unemployed respondents felt severe distress by the covid-19 pandemic.

The statistical analysis of Pearson Chi-Square test shows that there was no significant association between the employed and unemployed respondents regarding level of mental distress employment wise because the value of p = 0.611 which is greater than 0.05 significant level. The result indicates that there was no effect of employment status on level of distress of COVID-19.

7. Income wise level of mental distress

The government of Nepal was providing the free treatment to COVID-19 patients but later days when Government hospital alone could not provide service to all than Government has fixed the fee that private hospitals can charge for treatment of a COVID-19 patient. According to Ministry of Health and Population, private hospitals could charge from Rs. 3,500 to Rs. 15,000 a

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day at the maximum as fee for the treatment of a COVID-19 patient depending on the severity of the case. In this condition, the patient should be able to pay the treatment cost if s/he wants to get the treatment of COVID-19 which was not affordable for the poor family.

Table 7: Income wise level of mental distress

		Monthly Household Income				Total
		Up to 25000	25000 to 50000	50000 to 75000	75000 to 100000	
Mental status	Normal or no Distress	25.0%	20.0%	00.0%	100.0%	26.7%
	Moderate Distress	56.2%	70.0%	100.0%	00.0%	60.0%
	Severe Distress	18.8%	10.0%	00.0%	00.0%	13.3%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Income	30	5000	100000	38733.33	22874.370

Source: Field Study, 1 to 15 December 2020

The study analyzed the level of mental distress of respondents based on their household income level. Above table show that, 25% respondents having income level up to 25000, 20% respondents from 25000 to 50000 income level and 100% respondents from 75000 to 100000 income level felt no distress, followed by 56% respondents having income level up to 25000, 70% respondents from 25000 to 50000 income level and 100% respondents from 50000 to 75000 income level felt moderate distress whereas 18.8% respondents having income level up to 25000, 10% respondents from 25000 to 50000 income level felt severe distress at the time of COVID-19.It was found that from the average income of respondents was minimum 5000 to maximum100000 with mean income of 38733.33.

The data shows that severe distress was higher among those whose income was less than NPR. 25000 per month whereas there was no stress whose income was more than 75000 per months. It indicates that the economic status was one causative factor to determine the level of distress at the time of infection of COVID-19.

8. Types of Patient and level of mental distress

The study had asked the question to COVID-19 patients and their family members to measure the level of distress. The data presented in Table 8 shows that there was no significant difference between the COVID-19 patients and their family members regarding their level of distress. Both had felt similar types of stress due to COVID-19.

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Table 8: Types of Patient and level of mental distress

		Types of Patient		Total
		COVID-19 Patient	Family Members of COVID-19 Patient	
Mental	Normal or no Distress	13.3%	40.0%	26.7%
	Moderate Distress	73.3%	46.7%	60.0%
	Severe Distress	13.3%	13.3%	13.3%
Total		100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.889[a]	2	.236

Source**:** Field Study, 1 to 15 December 2020

Above table show that 13.3% COVID-19 patient and 40% Family Members of COVID-19 Patient respondents felt no distress, followed by 73.3% COVID-19 patient and 46.7% Family Members of COVID-19 Patient felt moderate distress, while 13.3% COVID-19 patient and 13.3% Family Members of COVID-19 Patient respondents felt severe distress by the covid-19 pandemic.

The statistical analysis of Pearson Chi-Square test shows that there was no significant association between the COVID-19 patient and Family Members of COVID-19 respondents regarding level of mental distress because the value of p = 0.236 which is greater than 0.05 significant level. The result indicates that there were similar types of situation of COVID-19 patient and their family members.

9. Disease Prevalence and level of distress

The study team tries to identify the prevalence of other disease in COVID-19 patients and their family. The data presented in Table 9 shows that 70% had no any disease followed by 20% had one disease and 10% two disease.

Table 9: Disease Prevalence and level of distress

Disease Prevalence					
		No Disease	One Disease	Two Diseases	Total
Frequency		21	6	3	30
Percent		70.0	20.0	10.0	100.0

		Disease Prevalence			Total
		No Disease	One Disease	Two Diseases	
Mental status	Normal or no Distress	33.3%	16.7%	00.0%	26.7%
	Moderate Distress	47.6%	83.3%	100.0%	60.0%
	Severe Distress	19.0%	00.0%	00.0%	13.3%

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Total	100.0%	100.0%	100.0%	100.0%

Source: Field Study, 1 to 15 December 2020

Above table show that, 33.3% respondents who had no disease, and 16.7% respondents who one disease had reported that they had no distress followed by, 47.6% respondents with no disease, 83.3% with one disease and 100% respondents with two diseases had felt moderate distress whereas 19% respondents with no disease had felt severe distress from pandemic of COVID-19. It is interesting that 19% respondents who had no any disease were felt severe distress at the time of infection of COVID-19.

CONCLUSION AND RECOMMENDATION

From the study, it was found that there was no effect of Gender, Caste, Age, Education, Employment Status, and Patients types no level of mental distress because the p value of Pearson Chi-Square test was greater than 0.05 significant level. The result shows that highest percentage of respondents 60% moderate distress because of covid-19 pandemic. The study found that male respondents felt more severe distress than female respondents. Similarly, cast wise, Dalit caste felt more severe distress than the Brahamin and Chhetri. In age level young respondents up to 25 years felt more severe distress than remain age group respondents, and from the educational perspective, illiterate respondents felt more severe distress than literate respondents. Similarly, unemployed respondents felt more severe distress than employed respondents. From the analysis of income level, higher level income (NPR. 75,000/- to 1,00,000/-) respondents felt less distress than low-income level respondents. The severe level distress was similar in between the COVID-19 patient and family member of COVID-19 patients. In general, there was no significant effect of demographic factors of patients and patients' family on level of distress caused by COVID-19. It results that severity of health was equally perceived by all types of class and groups.

Based on the above findings, the study had made following recommendation for the future research:

1. There is need of socio-psychological counselling class for the COVID-19 patients and their family members because the number of sever distress case was increased with the increased time period of pandemic of COVID-19.
2. The future researcher can study to find out the copping mechanism adopted by the COVID-19 and their family members to manage the distress.

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