



A Survey Study of Mental Health During Pandemic 2020

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Abstract

The effect of corona virus on the physiology of an individual can be seen around us. Every day we can see the piles of data reports gathered and discussed worldwide with an increasing number of COVID positive cases and increasing death rates. World Health Organization (WHO) declared the Corona Virus Disease 2019 (COVID-19) outbreak “*A public health emergency of international concern.*” It’s also high time to understand the impact of Pandemic 2020 upon the mental health of individuals and societies at large. The present study aims to assess the mental health of individuals during the pandemic 2020. A cross-sectional survey was conducted, where 750 people took the part willingly. After applying inclusion and exclusion criteria a sample of 600 respondents was shortlisted. The age of the sample population ranged between 14-69 years (group $M \pm SD$, 33.032 ± 12.10). The sample was collected from all over the country and the survey was organized by the Department of Psychology, HNBGU (A Central University) Srinagar Uttarakhand. To determine the association of mental health between individuals of different locality & gender the chi-square statistics has been used.

The findings of the study show that the psychological wellbeing and mental health of the people have been affected during the pandemic 2020. The results concluded that the mental health of females has shown a clear decline than their male counterparts whereas the mental health of the urban population has been more affected as compared to the rural population. The results also indicate that stressors affecting mental health were found significant in the case of males & females residing in an urban area. Males of urban and rural areas were also experiencing similar stress during pandemic 2020.

Keywords: Mental Health, Mental wellbeing, Psychological stress, COVID- 19, Pandemic-2020.

Introduction

Psychological health and mental well-being have been deeply affected during the pandemic Covid-19. Psychological reaction plays a critical role in shaping both the dispersion pandemic and the occurrence of emotional disturbance. And there are no sufficient resources for managing mental health (Taylor, S.2019). Mental health may be a level of psychological well-being. According to the World Health Organization (WHO): “**Mental health** is a state of well-being during in which a private realizes his or her abilities, can deal with the traditional stresses of life, can work productively, and may make a contribution to his or her community” . Dr. Brock Chisholm, the primary Director-General of the World Health Organization (WHO), in 1954, had presciently declared that “without psychological state, there are often no true physical health (Kollapa, K.2013). Mental health is more than being free of mental illnesses like mood disorders, Neurotic disorders, or Schizophrenia. Infect positive mental health is all about enjoying life with pleasure, believe in our abilities, cope with the normal stresses of life, work productively and enjoy socializing. Mental health refers to cognitive, behavioral, and emotional well-being. It is all about how an individual thinks, feels, and behaves. Positive mental health not only prevents mental ill health, it also leads to greater enjoyment and satisfaction with one’s life³.

On Jan 30, 2020, the World Health Organization (WHO) was declared that The Corona Virus Disease 2019 (CoViD-19) outbreak a public health emergency of international concern. According to the World Health Organization (WHO), Coronaviruses (CoV) are large families of viruses that cause illnesses ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). A novel coronavirus (nCoV) is a new strain that has not been previously identified in humans. Common signs of infection include respiratory symptoms, fever, and cough, shortness of breath, and breathing difficulties. In more severe cases, the infection can cause pneumonia, severe acute respiratory syndrome, renal failure, and even death. To prevent infection spread includes regular hand washing, covering mouth and nose when coughing and sneezing, thoroughly cooking meat and eggs. Avoid close contact with anyone showing symptoms of respiratory illness such as coughing and sneezing.

A survey on college students showed that during the pandemic Covid-19, 26.60% of students were faced anxiety and depressive emotions were detected in 21.16% of students and mild, moderate & moderate to severe depression were 16.98%, 3.17, and 1.01% respectively. The results showed that excessive negative information about Covid-19 was associated with poor mental health (Chang, A., Yuan, Y., & Wang, D., 2020). A cross-sectional study was conducted in China on factors associated with mental health outcomes among 1257 health care workers who were treating patients with Corona Virus disease(COVID-19). The result showed that 50.4% of health care workers reported symptoms of depression, 44.6% anxiety, 34% insomnia, 71.5% distress, and psychological burden (Lai, L., Ma, S., and et.al. 2020). The lockdown imposed to stop the virus from spreading also harms mental health (Rubin, J.G., 2020). The psychological effect might represent the mental health outcome for people affected by COVID-19 or be associated with the prevention measures (Duan, L. & Zhu, G. 2020). From above studies showed that specific populations like the elderly, children, and healthcare workers might report different levels of psychological distress¹. A review article also claims that people

experienced considerable psychological distress during the initial stage of the CoViD-19 outbreak in terms of anxiety, depression, and posttraumatic symptoms.

To the best of our knowledge, there has been no survey in India to determine the overall mental health of individuals during a covid-19 pandemic. The present survey on Indian respondents aimed at determining that different aspects of mental health (i.e. feeling sad, Feeling Discouraged, Feeling Irritable, Feeling Afraid of loss, Feeling Helpless, Feeling Nervous, Negative Thought, Getting Anger, Difficulty in taking a decision, Liking to Talk, Daily Routine, Feeling Guilty, Feeling less energetic, Lack of Concentration, Mental Confusion, Lack of Sleep, Feeling Tired, Feeling Physical Discomfort).

Material & Methods

Objectives:

- To know the mental health of individuals during the COVID-19 pandemic.
- To know the mental health of individuals across the gender during the COVID-19 pandemic.
- To know the mental health of individuals across the locality/area during the COVID-19 pandemic.

Hypothesis:

- There is no significant association between males and females on their mental health during the COVID-19 pandemic.
- There is no significant difference between urban and rural on their mental health during the COVID-19 pandemic.
- There is no significant difference between males of urban and rural areas on their mental health during the COVID-19 pandemic.
- There is no significant difference between females of urban and rural areas on their mental health during the COVID-19 pandemic.
- There is no significant difference between males and females of the urban area on their mental health during the COVID-19 pandemic.
- There is no significant difference between males and females of rural areas on their mental health during the COVID-19 pandemic.

Variables:

Independent variable: mental health

Dependent variable: gender and locality

Study Design & Sample

A cross-sectional survey was conducted, where 750 people took the part willingly. A total sample size of 600 was shortlisted out of 750 respondents for the present study where 336 (56%) were male respondents and 264 (44%) were female respondents respectively and 461 (76.83%) urban and 139 (23.17%) rural respondents respectively. All the respondents were selected by the Purposive Sampling Method with the help of a self-structured questionnaire to study the mental health of the individuals during pandemic 2020. The age of the sample population ranged between 14-69 years (group $M \pm SD$, 33.032 ± 12.10). The sample was collected from all over the country and the survey was organized by

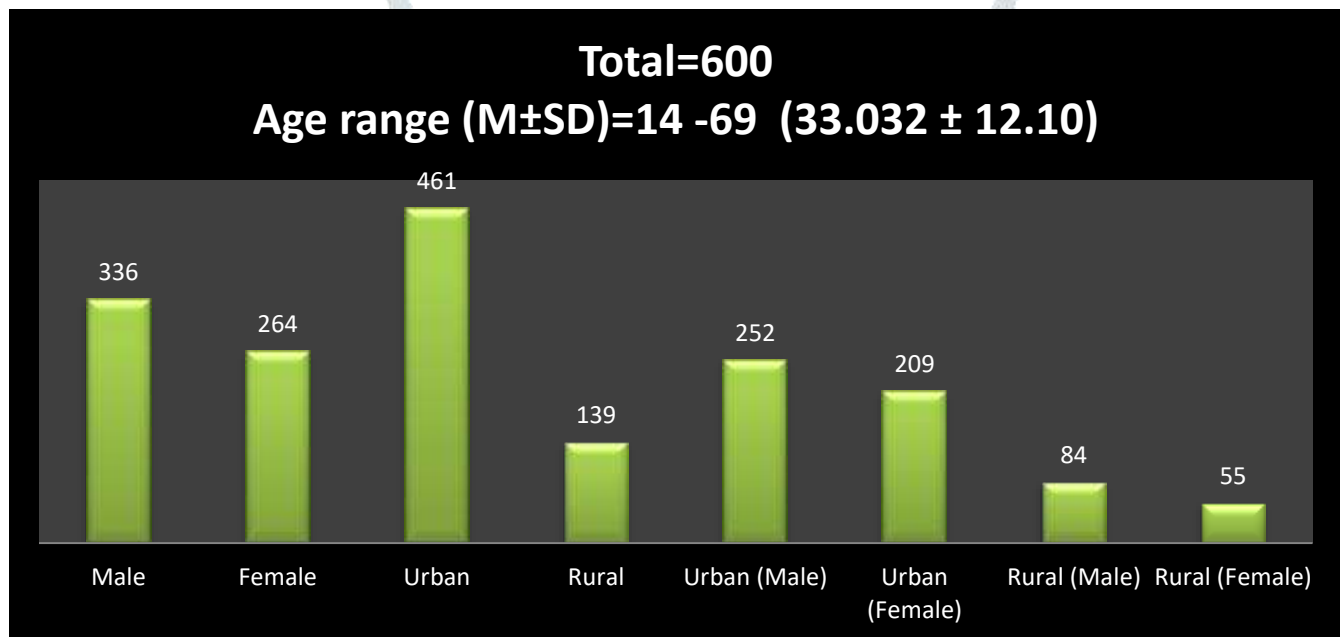
Department of Psychology, HN BGU (A Central University) Srinagar, Uttarakhand. The signed informed consent of each respondent was taken as part of the survey.

Procedure

The self-structured questionnaire of mental health was used for the study. The survey was written in both languages English and Hindi. The questionnaire has 20 items with three options (Yes, No, Can't say). The questionnaire was circulated through email and another mode of social media application as per the suitability of research. Survey sheets were sorted for different characteristics such as gender and locality. After that their responses to each item were sorted & tabulated accordingly.

Statistical Analysis

The values were converted as a percentage of the scores within each category. The scores were used to carry out a Chi-square test to identify differences between groups. According to the different mental health indicators constructed in the questionnaire.



Results:-

H₀ 1: There is no significant association between males and females on their mental health during the COVID-19 pandemic.

Table 1: Analysis of Mental Health between Males & Females

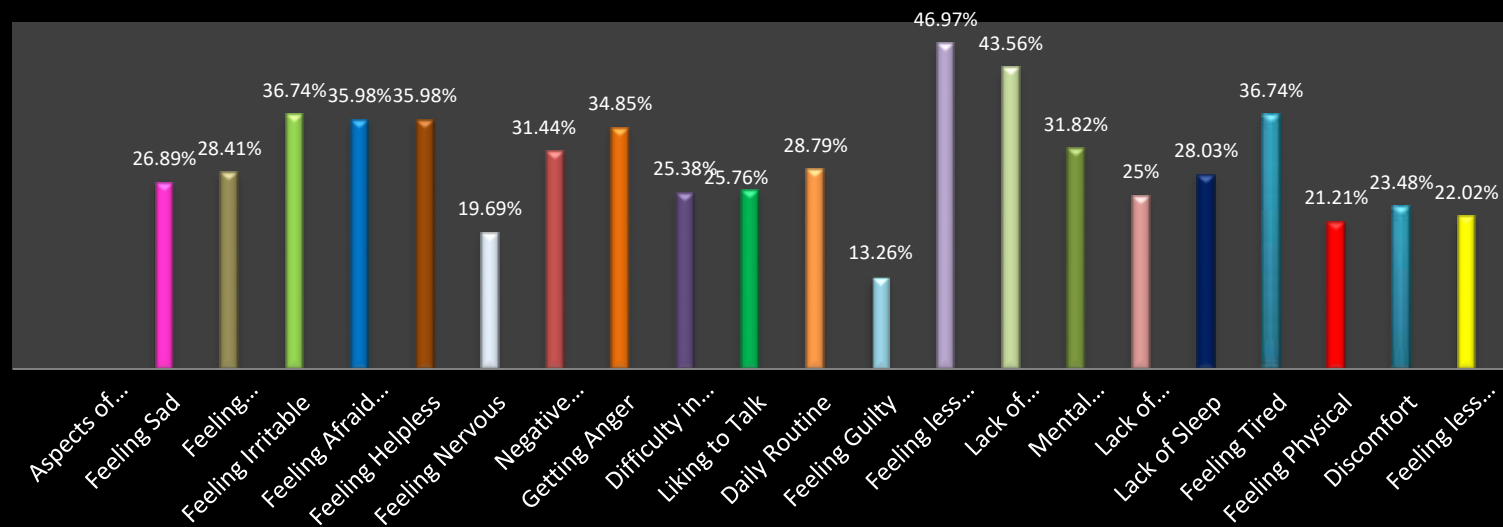
Aspects of Mental Health	Males (56%)			Females (44%)			χ^2
	Yes (%)	No (%)	Can't Say (%)	Yes (%)	No (%)	Can't Say (%)	
Feeling Sad	22.02%	67.56%	10.42%	26.89%	59.47%	15.53%	83.47***
Feeling Discouraged	16.96%	73.51%	9.52%	28.41%	62.12%	9.47%	11.60**
Feeling Irritable	21.43%	72.02%	6.55%	36.74%	54.55%	8.71%	65.89***
Feeling Afraid of loss	34.23%	55.65%	10.12%	35.98%	55.68%	8.33%	54.85***
Feeling Helpless	22.62%	69.94%	7.44%	35.98%	55.68%	8.33%	61.63***
Feeling Nervous	16.67%	74.11%	9.23%	19.69%	71.21%	9.09%	.927
Negative Thought	20.83%	72.92%	6.25%	31.44%	56.82%	11.74%	17.49***
Getting Anger	20.24%	73.81%	5.95%	34.85%	57.58%	7.58%	18.26***
Difficulty in taking decision	18.15%	75%	6.85%	25.38%	62.12%	12.5%	12.22**
Liking to Talk	17.26%	75.59%	7.14%	25.76%	61.74%	12.5%	13.63***
Daily Routine	26.79%	65.48%	7.74%	28.79%	60.98%	10.23%	1.72
Feeling Guilty	8.04%	86.61%	5.36%	13.26%	79.55%	7.19%	43.11***
Feeling less energetic	33.33%	61.90%	4.76%	46.97%	44.69%	8.33%	55.62***
Lack of Concentration	28.87%	65.77%	5.36%	43.56%	47.35%	9.09%	20.68***
Mental Confusion	19.35%	74.40%	6.25%	31.82%	60.23%	7.95%	14.24***
Lack of Confidence	12.79%	80.36%	6.85%	25%	69.32%	5.68%	14.82***
Lack of Sleep	22.02%	74.405%	3.57%	28.03%	67.04%	4.92%	3.94
Feeling Tired	18.75%	76.49%	4.76%	36.74%	59.09%	3.27%	24.56***
Feeling Physical Discomfort	13.39%	83.63%	2.98%	21.21%	72.73%	6.06%	10.85**
Feeling less Hungry	22.02%	73.51%	4.46%	23.48%	70.45%	6.06%	32.48***

(P value * < 0.05, ** < 0.01, *** 0.001 are significant at 2 degree of freedom)

From the above table it has been concluded that the obtained value of chi-square was found significant (P-value * < 0.05, ** < 0.01, *** 0.001 at 2 degrees of freedom), which is mostly true for maximum mental health indicators. The results indicate that there is a significant difference between males and females in their mental health. And the null hypothesis is rejected.

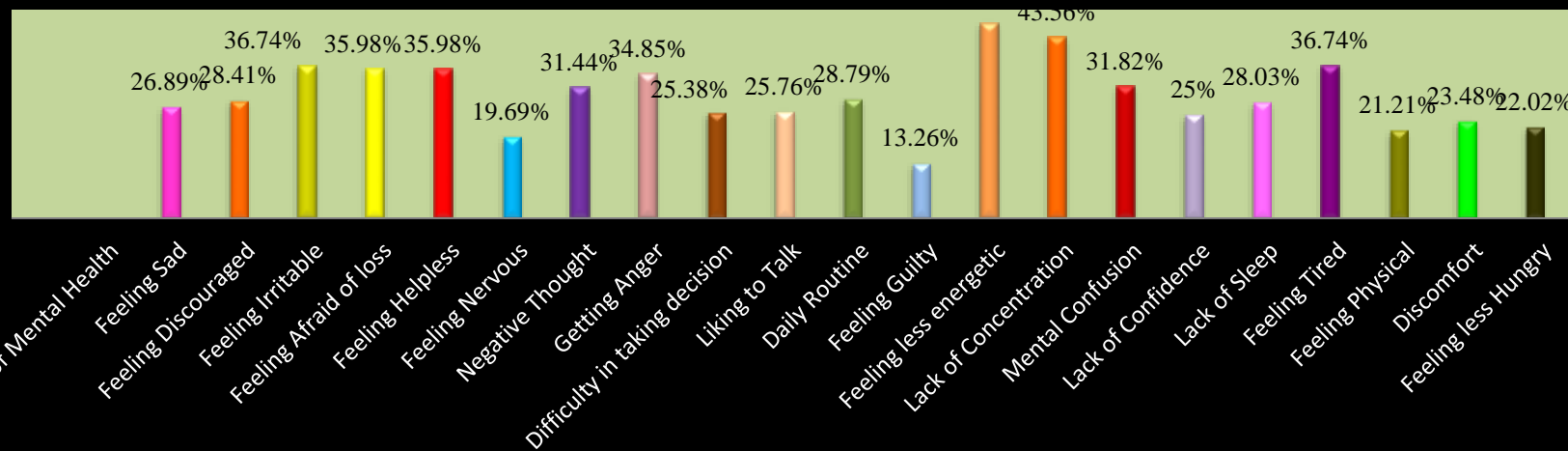
The graphical representation of the “Yes” responses given by the male and female, because high yes responses show the poor mental health of the individual.

Mental Health Aspects & "Yes" Response By Male



(Figure 1 shows the percentage of "Yes" response by males for mental health aspects)

Mental Health Aspects & "Yes" Responses of Females



(Figure 2 shows the percentage of "Yes" response by females for mental health aspects)

H₀2: There is no significant association between urban and rural on their mental health during the COVID-19 pandemic.

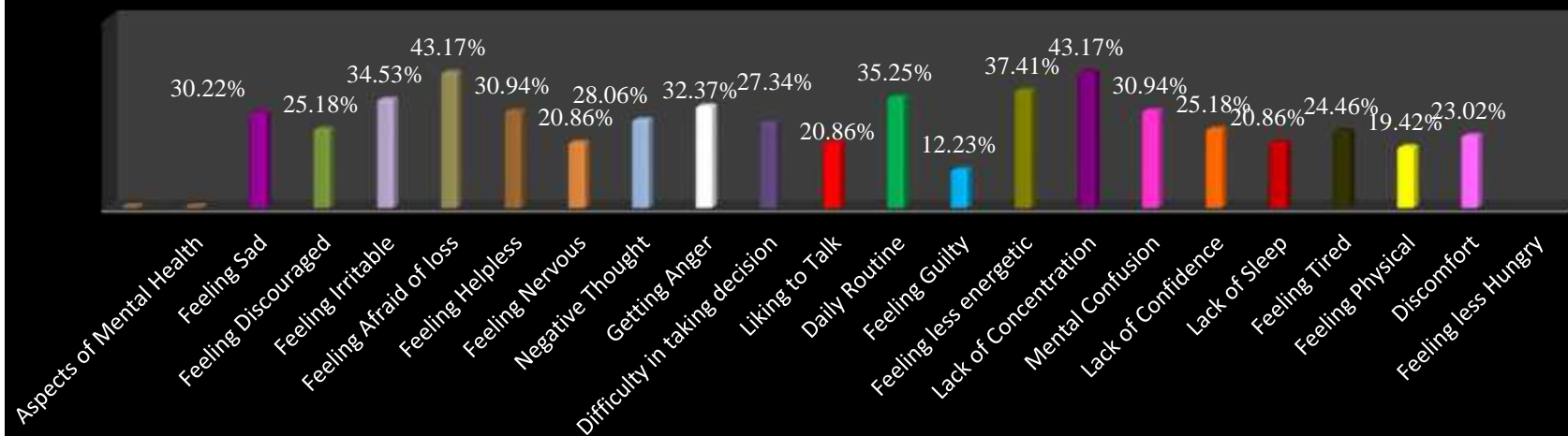
Table 2: Analysis of Mental Health between Urban& Rural area

Aspects of Mental Health	Urban (76.83%)			Rural (23.17%)			χ ²
	Yes (%)	No (%)	Can't Say (%)	Yes (%)	No (%)	Can't Say (%)	
Feeling Sad	22.34%	66.38%	11.28%	30.22%	52.52%	17.27%	9.00**
Feeling Discouraged	20.82%	70.07%	9.11%	25.18%	61.87%	12.95%	3.55
Feeling Irritable	26.25%	66.16%	7.59%	34.53%	58.27%	7.19%	3.66
Feeling Afraid of loss	32.54%	58.13%	9.33%	43.17%	47.48%	9.35%	5.62
Feeling Helpless	23.64%	67.68%	8.68%	30.94%	65.47%	3.59%	5.99*
Feeling Nervous	17.14%	73.54%	9.33%	20.86%	70.50%	8.63%	1.02
Negative Thought	24.73%	65.94%	9.33%	28.06%	65.47%	6.47%	1.47
Getting Anger	24.95%	68.76%	6.29%	32.37%	60.43%	7.19%	3.45
Difficulty in taking the decision	19.52%	71.37%	9.11%	27.34%	62.59%	10.07%	4.35
Liking to Talk	21.04%	71.15%	7.81%	20.86%	64.03%	15.11%	6.77*
Daily Routine	25.38%	65.73%	8.89%	35.25%	56.12%	8.63%	5.32
Feeling Guilty	9.76%	84.59%	5.64%	12.23%	80.58%	7.19%	1.27
Feeling less energetic	39.91%	53.36%	6.72%	37.41%	57.55%	5.04%	0.996
Lack of Concentration	32.97%	60.95%	6.07%	43.17%	47.48%	9.35%	8.17*
Mental Confusion	22.99%	69.63%	7.38%	30.94%	63.31%	5.76%	3.74
Lack of Confidence	16.05%	77.66%	6.29%	25.18%	68.35%	6.47%	6.13
Lack of Sleep	25.81%	68.76%	5.42%	20.86%	79.14%	0%	10.21**
Feeling Tired	27.33%	68.33%	4.33%	24.46%	70.50%	5.04%	0.519
Feeling Physical Discomfort	16.05%	78.74%	5.21%	19.42%	79.14%	1.44%	4.22
Feeling less Hungry	22.56%	72.67%	4.77%	23.02%	70.50%	6.47%	0.68

(P value *<0.05, **< 0.01, *** 0.001 are significant at 2 degree of freedom)

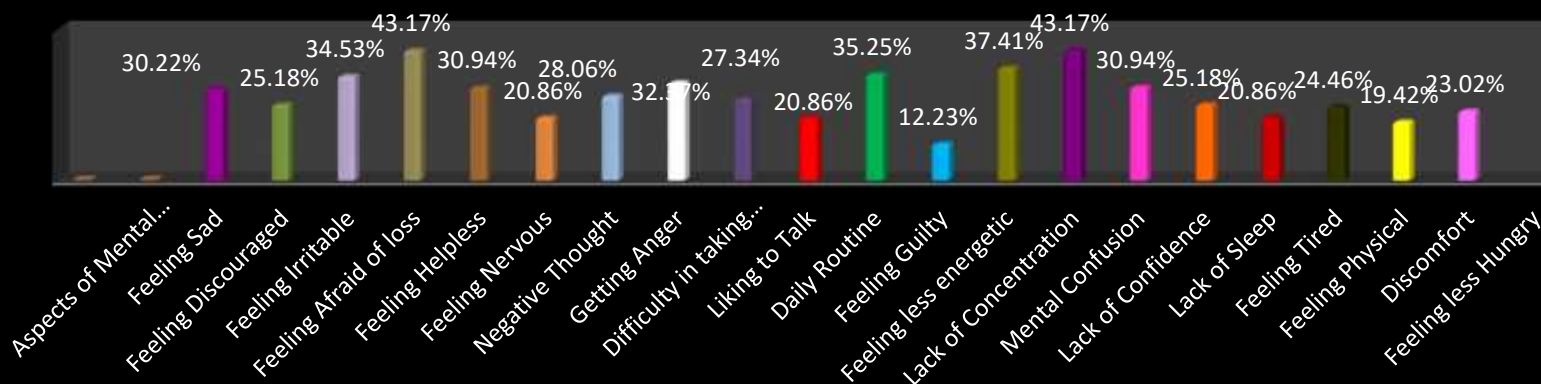
From the above table it has been concluded that the obtained value of chi-square was found significant (P-value *<0.05, **< 0.01, *** 0.001 at 2 degrees of freedom) for five indicators. The results indicate that there is a significant difference between respondents of urban and rural areas for the feeling of sadness and helplessness, their likability to talk concentration level, and sleep patterns. And the null hypothesis is rejected.

Mental Health Aspects & "Yes" Responses of Urban Participants



(Figure 3 shows the percentage of "Yes" response by urban participants for mental health aspects)

Mental Health Aspects & "Yes" Responses of Rural Participants



(Figure 4 shows the percentage of "Yes" response by rural participants for mental health aspects)

H_0 3: There is no significant association between males of urban and rural areas on their mental health during the COVID-19 pandemic.

Table 3: Analysis of Mental Health between urban males & rural males

Aspects of Mental Health	Urban males (75%)			Rural males (25%)			χ^2
	Yes (%)	No (%)	Can't Say (%)	Yes (%)	No (%)	Can't Say (%)	
Feeling Sad	19.85%	71.83%	16.67%	28.57%	54.76%	16.67%	9.095**
Feeling Discouraged	16.27%	75%	15.48%	17.86%	66.67%	15.48%	3.45
Feeling Irritable	19.44%	73.81%	5.95%	27.38%	66.67%	5.95%	2.36
Feeling Afraid of loss	30.95%	58.73%	9.52%	44.055	46.43	9.52%	4.91
Feeling Helpless	20.63%	70.63%	3.57%	28.5%	67.86%	3.57%	18.16***
Feeling Nervous	14.68%	75.79%	8.33%	22.62%	69.05%	8.33%	31.77***
Negative Thought	20.24%	72.62%	3.57%	22.62%	73.81%	3.57%	15.18**
Getting Anger	18.65%	75.39%	5.95%	255	69.05%	5.95%	21.59***
Difficulty in taking decision	16.27%	76.98%	7.14%	23.81%	69.05%	7.14%	2.52
Liking to Talk	17.06%	76.59%	9.52%	17.86%	72.62%	9.52%	29.49***
Daily Routine	25%	67.46%	8.33%	32.14%	59.52%	8.33%	29.14***
Feeling Guilty	7.54%	87.69%	7.14%	9.52%	83.33%	7.14%	22.45***
Feeling less energetic	34.52%	60.32%	5.16%	29.76%	66.67%	3.57%	14.17**
Lack of Concentration	26.19%	69.44%	4.37%	36.90%	54.76%	8.33%	29.24***
Mental Confusion	19.05%	74.21%	6.75%	20.24%	75%	4.76%	17.72**
Lack of Confidence	11.51%	81.35%	7.14%	16.67%	77.38%	5.95%	22.43***
Lack of Sleep	23.41%	71.83%	4.76%	17.86%	82.14%	0%	5.784
Feeling Tired	19.05%	76.19%	4.76%	17.86%	77.38%	4.76%	16.06***
Feeling Physical Discomfort	13.09%	83.33%	3.57%	14.29%	84.52%	1.19%	6.08
Feeling less Hungry	20.63%	75.39%	3.97%	26.19%	67.86%	5.95%	19.70***

(*P* value * <0.05 , ** <0.01 , *** 0.001 are significant at 2 degree of freedom)

From the above-mentioned table it has been concluded that obtained value of chi-square has been found significant for most of the mental health indicators at (*P*-value * <0.05 , ** <0.01 , *** 0.001 at 2 degrees of freedom). And the null hypothesis is rejected.

H₀ 4: There is no significant association between females of urban and rural areas on their mental health during the COVID-19 pandemic.

Table 4: Analysis of Mental Health between urban females & rural females

Aspects of Mental Health	Urban females (79.17%)			Rural females (20.83%)			χ^2
	Yes (%)	No (%)	Can't Say (%)	Yes (%)	No (%)	Can't Say (%)	
Feeling Sad	25.36%	59.81%	14.83%	32.73%	49.09%	18.18%	2.06
Feeling Discouraged	26.32%	64.11%	9.57%	36.36%	54.55%	9.09%	2.20
Feeling Irritable	34.45%	56.94%	8.61%	89.09%	10.91%	0%	52.58***
Feeling Afraid of loss	34.45%	57.42%	8.13%	41.82%	49.09%	9.09%	1.25
Feeling Helpless	27.27%	64.11%	8.61%	34.55%	61.82%	3.64%	2.26
Feeling Nervous	20.09%	70.81%	9.09%	18.18%	72.73%	9.09%	.103
Negative Thought	30.14%	57.89%	11.96%	36.36%	52.73%	10.91%	.78
Getting Anger	32.54%	60.77%	6.69%	43.64%	47.27%	9.09%	3.25
Difficulty in taking the decision	23.44%	64.59%	11.96%	32.73%	52.13%	14.55%	2.69
Liking to Talk	25.84%	64.59%	9.57%	25.45%	50.91%	23.64%	8.216*
Daily Routine	25.84%	63.64%	10.53%	40%	50.91%	9.09%	4.28
Feeling Guilty	12.44%	80.86%	6.69%	16.36%	76.36%	7.27%	.637
Feeling less energetic	46.41%	44.98%	8.61%	49.09%	43.64%	7.27%	.18
Lack of Concentration	41.14%	50.71%	8.13%	52.73%	36.36%	10.91%	3.61
Mental Confusion	27.75%	64.11%	8.13%	47.27%	45.45%	7.27%	7.77*
Lack of Confidence	21.53%	73.21%	5.26%	38.18%	54.55%	7.27%	7.33*
Lack of Sleep	28.71%	65.07%	6.22%	25.45%	74.55%	0%	4.17
Feeling Tired	37.32%	58.85%	3.83%	34.55%	60%	5.45%	.378
Feeling Physical Discomfort	19.62%	73.21%	7.18%	27.27%	70.91%	1.82%	3.29
Feeling less Hungry	24.88%	69.38%	5.74%	18.18%	74.55%	7.27%	1.17

(*P* value * <0.05 , ** <0.01 , *** 0.001 are significant at 2 degree of freedom)

From the above-mentioned table it has been concluded that obtained value of chi-square has been found significant for only four mental health indicators at (*P*-value * <0.05 , ** <0.01 , *** 0.001 at 2 degrees of freedom). The null hypothesis is rejected.

H₀₅: There is no significant association between males and females of the urban area on their mental health during the COVID-19 pandemic.

Table 5: Analysis of Mental Health between Urban males & urban females

Aspects of Mental Health	Urban Male (54.66%)			Urban Females (45.34%)			χ^2
	Yes (%)	No (%)	Can't Say (%)	Yes (%)	No (%)	Can't Say (%)	
Feeling Sad	19.84%	71.83%	8.33%	25.36%	59.81%	14.83%	8.32*
Feeling Discouraged	16.27%	75%	8.73%	26.32%	64.11%	9.57%	7.557*
Feeling Irritable	19.44%	73.81%	6.75%	34.44%	56.94%	8.61%	15.24***
Feeling Afraid of loss	30.95%	58.73%	10.32%	34.44%	57.42%	8.13%	1.05
Feeling Helpless	20.63%	70.63%	8.73%	27.27%	64.11%	8.61%	42.79***
Feeling Nervous	14.68%	75.79%	9.52%	20.09%	70.81%	9.09%	45.15***
Negative Thought	20.24%	72.62%	7.14%	30.14%	57.89%	11.96%	53.36***
Getting Anger	18.65%	75.39%	5.95%	32.54%	60.77%	6.69%	41.71***
Difficulty in taking a decision	16.27%	76.98%	6.75%	23.44%	64.59%	11.96%	8.88*
Liking to Talk	17.06%	76.59%	6.35%	25.84%	64.59%	9.57%	43.87***
Daily Routine	25%	67.46%	7.54%	25.84%	63.64%	10.53%	42.57***
Feeling Guilty	7.54%	87.69%	4.76%	12.44%	80.86%	6.69%	30.28*
Feeling less energetic	34.52%	60.32%	5.16%	46.41%	44.98%	0%	41.57***
Lack of Concentration	36.19%	69.44%	4.37%	41.15%	50.72%	8.13%	43.95***
Mental Confusion	19.05%	74.21%	6.75%	27.75%	64.11%	8.13%	40.03***
Lack of Confidence	11.51%	81.35%	7.14%	21.53%	73.21%	5.26%	36.32***
Lack of Sleep	23.41%	71.83%	4.76%	28.71%	65.07%	6.22%	27.63***
Feeling Tired	19.05%	76.19%	4.76%	37.32%	58.85%	3.83%	38.58***
Feeling Physical Discomfort	13.09%	83.33%	3.57%	19.62%	73.21%	7.18%	30.07***
Feeling less Hungry	20.63%	75.39%	3.97%	24.88%	69.38%	5.74%	24.25***

(*P* value * <0.05 , ** <0.01 , *** 0.001 are significant at 2 degree of freedom)

From the above-mentioned table it has been concluded that obtained value of chi-square has been found significant for all of the mental health indicators at (*P*-value * <0.05 , ** <0.01 , *** 0.001 at 2 degrees of freedom). The null hypothesis is rejected.

H₀ 6: There is no significant association between males and females of rural areas on their mental health during the COVID-19 pandemic.

Table 6: Analysis of Mental Health between rural males & rural females

Aspects of Mental Health	Rural Male (60.43%)			Rural Females (39.57%)			χ^2
	Yes (%)	No (%)	Can't Say (%)	Yes (%)	No (%)	Can't Say (%)	
Feeling Sad	28.57%	54.76%	16.67%	32.73%	49.09%	18.18%	.438
Feeling Discouraged	17.86%	66.67%	15.48%	36.36%	54.55%	9.09%	6.36*
Feeling Irritable	27.38%	66.67%	5.95%	45.45%	45.45%	9.09%	6.17*
Feeling Afraid of loss	44.05%	70.91%	9.52%	41.82%	49.09%	9.09%	.095
Feeling Helpless	28.57%	67.86%	3.57%	34.55%	61.82%	3.64%	.57
Feeling Nervous	22.62%	69.05%	8.33%	18.18%	72.73%	9.09%	.40
Negative Thought	22.62%	73.81%	3.57%	36.36%	55.73%	10.90%	7.26*
Getting Anger	25%	69.05%	5.95%	43.64%	47.27%	9.09%	6.63*
Difficulty in taking the decision	23.81%	69.05%	7.14%	32.73%	55.73%	14.55%	4.19
Liking to Talk	17.86%	72.62%	9.52%	25.45%	50.91%	23.64%	7.75*
Daily Routine	32.14%	59.52%	8.33%	40%	50.91%	9.09%	1.044
Feeling Guilty	9.52%	83.33%	7.14%	16.36%	76.36%	7.27%	1.47
Feeling less energetic	29.76%	66.67%	3.57%	49.09%	46.64%	7.27%	7.29*
Lack of Concentration	36.90%	54.76%	8.33%	52.73%	36.36%	10.91%	4.53
Mental Confusion	20.24%	75%	4.76%	47.27%	45.45%	7.27%	12.80*
Lack of Confidence	16.67%	77.38%	5.95%	38.18%	54.55%	7.27%	8.74*
Lack of Sleep	17.86%	82.14%	0%	25.45%	74.55%	0%	1.16
Feeling Tired	17.86%	77.38%	4.76%	34.55%	60%	5.45%	5.24
Feeling Physical Discomfort	14.29%	84.52%	1.19%	27.27%	70.91%	1.82%	3.76
Feeling less Hungry	26.19%	67.86%	5.95%	18.18%	74.55%	7.27%	1.23

(*P* value * <0.05 , ** <0.01 , *** 0.001 are significant at 2 degree of freedom)

The above-mentioned table indicates that obtained value of chi-square has been found significant for only seven mental health indicators at (*P*-value * <0.05 , ** <0.01 , *** 0.001 at 2 degrees of freedom). The null hypothesis is rejected.

Discussion

This study was conducted for measuring the mental health of the individuals during the Covid-19 pandemic. There were more males 56% compared to females 44%. In the result tables, chi-square shows that the significant difference between gender and urban & rural area in their mental health during the Covid-19 pandemic at the level of *P-value* 0.05, 0.01, and 0.001 at 2 degrees of freedom. Male and female differed significantly between feeling sad ($\chi^2=83.47, p<0.001$), Feeling Discouraged ($\chi^2= 11.60, p<0.01$), Feeling Irritable ($\chi^2 =65.89,p=0.001$),Feeling Afraid of loss ($\chi^2 =54.85, p<0.001$), Feeling Helpless($\chi^2 =61.63,p<0.001$) ,Negative Thought ($\chi^2 =17.49, p<0.001$), Getting Anger ($\chi^2=18.26,p<0.001$),Difficulty in taking decision ($\chi^2 =12.22, p<0.01$),Liking to Talk ($\chi^2 =13.63,p<0.001$), Feeling Guilty ($\chi^2 =43.11,p<0.001$),Feeling less energetic($\chi^2 =55.62,p<0.001$),Lack of Concentration($\chi^2 =20.68, p<0.001$), Mental Confusion ($\chi^2 =14.24, p<0.001$), Lack of Confidence ($\chi^2 =14.82, p<0.001$), Feeling Tired ($\chi^2 =24.56,p<0.001$),Feeling Physical Discomfort ($\chi^2 =10.85,p<0.01$),Feeling less Hungry ($\chi^2=32.48,p<0.001$). A review article claim that there are numerous mental health threats associated with the current pandemic and subsequent restrictions (**Fegert, J.M., Vitiello, B. Plener, P.L.& Clemens, V.2020**). And in the present survey found that in most of the mental health indicators female respondents were found more vulnerable as compared to their male counterparts during pandemic 2020. Due to covid-19, the lockdown period was increased by the government into different phases, which ultimately increased pressure upon the family members. Possibly the increased family responsibilities, childcare, lack of household help and increased workloads are the reasons for psychological pressures among female respondents.

In this survey maximum number of respondents was from urban areas 76.83% and 23.17% were from rural areas. Urban people and rural people differed significantly between feeling sad ($\chi^2=9.00, p<0.01$), Feeling Helpless ($\chi^2 =5.99,p<0.05$) ,Liking to Talk ($\chi^2 =6.77,p<0.05$), Lack of Concentration($\chi^2 =8.17, p<0.05$), Lack of sleep ($\chi^2 =10.21, p<0.01$). Results of the remaining mental health indicators indicate that there is no significant difference between respondents in rural and urban areas rather they experience more or less similar mental health challenges during pandemic 2020.

The respondent's further category is urban male (75%) and rural male (25%) were differed in feeling sad ($\chi^2=9.095, p<0.01$), Feeling Helpless ($\chi^2 =18.16, p<0.001$), Feeling nervous ($\chi^2 =31.77, p<0.001$), Negative thought ($\chi^2 =15.18, p<0.01$), Getting anger ($\chi^2 =21.59,p<0.001$),Liking to talk ($\chi^2 =29.49,p<0.001$),Daily routine ($\chi^2 =29.14,p<0.001$), Feeling guilty($\chi^2 =22.45,p<0.001$), Feeling less energetic ($\chi^2 =14.17,p<0.01$),Lack of concentration ($\chi^2 =29.24,p<0.001$), Mental confusion ($\chi^2 =17.72,p<0.01$), Lack of confidence ($\chi^2 =22.43,p<0.001$), Feeling tired ($\chi^2 =16.06,p<0.001$), Feeling hungry ($\chi^2 =19.70,p<0.001$). According to the results % value of yes responses indicate that rural men are sadder, helpless, nervous, and having more negative thoughts than the males of urban areas. Rural men are feeling difficulties to have their normal routine, experience more guilt, less energy, lack of concentration, mental confusion, more tiredness, and lack of appetite than the male of the urban population. Thus it has been concluded that there has been a significant difference between rural and urban male responses. Challenging work opportunities, difficulty in managing their family needs and daily requirements during this pandemic might be caused such a difference among them.

Another category is urban females (79.17%) and rural females (20.83%). Urban & rural females were differed between feeling irritable ($\chi^2 = 52.58, p < 0.001$), liking to talk ($\chi^2 = 8.22, p < 0.05$), mental confusion ($\chi^2 = 7.77, p < 0.05$), lack of confidence ($\chi^2 = 7.33, p < 0.05$). According to the results % value of yes responses indicate that rural and urban females are experiencing almost similar kind of stressors during pandemic 2020. Therefore it has been concluded that there found no significant difference between the females of rural and urban areas. But it has also been found with the % or yes responses that more rural women are experiencing sadness, discouraged helplessness, and nervousness. This might be the result of managing their household and family responsibilities during this pandemic due to COVID-19, especially with uncertain financial resources.

A survey study in the UK found Women, young people, and those with preschool-aged children are experiencing the greatest increase in mental distress. This study supports the present survey results. (Pierce, M. et.al 2020)

Urban male (54.66%) and urban females (45.34%), differed significantly between feeling sad ($\chi^2 = 8.32, p < 0.05$), Feeling Discouraged ($\chi^2 = 7.56, p < 0.05$), Feeling Irritable ($\chi^2 = 15.24, p = 0.001$), Feeling Helpless ($\chi^2 = 42.79, p < 0.001$), feeling nervous ($\chi^2 = 45.15, p < 0.001$) Negative Thought ($\chi^2 = 53.36, p < 0.001$), Getting Anger ($\chi^2 = 41.71, p < 0.001$), Difficulty in taking decision ($\chi^2 = 8.88, p < 0.05$), Liking to Talk ($\chi^2 = 43.87, p < 0.001$), daily routine ($\chi^2 = 42.57, p < 0.001$) Feeling Guilty ($\chi^2 = 30.28, p < 0.001$), Feeling less energetic ($\chi^2 = 55.62, p < 0.001$), Lack of Concentration ($\chi^2 = 43.95, p < 0.001$), Mental Confusion ($\chi^2 = 40.03, p < 0.001$), Lack of Confidence ($\chi^2 = 36.32, p < 0.001$), lack of sleep ($\chi^2 = 27.63, p < 0.001$), Feeling Tired ($\chi^2 = 38.58, p < 0.001$), Feeling Physical Discomfort ($\chi^2 = 30.07, p < 0.01$), Feeling less Hungry ($\chi^2 = 24.25, p < 0.001$). According to the results % value of yes responses indicate that urban females are sadder, discouraged, helpless, nervous, and having more negative thoughts than the males of urban areas. Urban females are experiencing difficulties to have their normal routine, more guilt, less energy, lack of concentration, mental confusion, more tiredness, and lack of appetite than the urban female respondents. Thus it has been concluded that there has been a significant difference between urban female and urban male respondents. Challenging work opportunities, difficulty in managing their family needs, and daily requirements all by themselves during this pandemic can be the causal factors. A lockdown when the whole family is forced to stay home including children and their online classes in the absence of their household helps (maids) created more challenges for the females in comparison to males.

Rural male (60.43%) and rural females (39.57%) differed significantly between Feeling Discouraged ($\chi^2 = 6.36, p < 0.05$), Feeling Irritable ($\chi^2 = 6.17, p = 0.001$), Getting Anger ($\chi^2 = 7.26, p < 0.05$), Difficulty in taking decision ($\chi^2 = 6.63, p < 0.05$), Liking to Talk ($\chi^2 = 7.75, p < 0.05$), Feeling less energetic ($\chi^2 = 7.20, p < 0.001$), Mental Confusion ($\chi^2 = 12.80, p < 0.05$), Lack of Confidence ($\chi^2 = 8.74, p < 0.05$). In the result table, most of the indicators show the chi-square value is not significant, therefore it has been concluded that there found no significant difference between the males and females of rural areas. According to the results % value of yes responses indicate that rural females are experiencing more mental stressors as compared to their male counterparts during pandemic 2020. But it has also been found with the % or yes responses that more rural women are experiencing discouraged, irritated, negative thoughts and mental confusions than the males. This might be the result of managing their household and family responsibilities during this pandemic due to COVID-19, especially with uncertain financial resources.

Conclusion

The findings of the study show that the psychological wellbeing and mental health of the people have been affected during the pandemic 2020. The results concluded that the mental health of females has shown a clear decline than their male counterparts whereas the mental health of the urban population has been more affected as compared to the rural population. The results also indicate that stressors affecting mental health were found significant in the case of males & females residing in the urban area. Males of urban and rural areas were also experiencing similar stress during pandemic 2020.

Suggestions for further studies:-

1. Mental health should be the measure of individuals who are working in different areas during the Covid 19 pandemic.
2. The study can be done on other psychological variables (i.e., sleep, psychological disorders, and self-confidence) which are affected by the Covid-19 pandemic.
3. Further study should be based on psychological intervention which can be helpful during pandemic Covid-19.

Limitation

As it is the online survey, the urban population was higher than the rural population. Most of the rural people do not have better internet access and knowledge to fill the online forms, especially during the Covid-19 outbreak.

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