



## PSYCHOLOGICAL IMPACT OF THE COVID- 19 PANDEMIC AMONG THE DENIZENS OF SIKKIM

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### **Abstract**

*The COVID-19 pandemic has forced the administrations to take strict measures such as social isolation, restrictions on movement, home quarantine, cancellation of amusement, etc, which has brought the human population to a new unprecedented situation causing a long-term effect on the mental health of the people. To evaluate the psychological impact of the COVID - 19 pandemic on the denizens of Sikkim. The present study was conducted upon 380 males and females between the age ranges of 18-50 years from Sikkim. The data was collected through an online survey using Google Forms with links shared using Facebook Messenger, WhatsApp Messenger, and E-mail. A total of 38- item questionnaire and Cohen Perceived Stress scale were administered for this present study. More than 50 % of respondents were found to be worried more than usual in the last two weeks. About 72 (18.95%) participants were feeling depressed and 145 (38.16%) participants were becoming more irritable most of the time in the past 2 weeks respectively. The sleep cycle was found to be disturbed in 23.68% of respondents. About 55.53% of respondents were worried about the financial loss that was incurred during the period of lockdown. The present study suggested that majority of the people were found to be irritable and worried about the financial loss due to the COVID-19 lockdown. The COVID-19 pandemic also affected the people of Sikkim mentally as well as psychologically.*

**Keywords: Coronavirus Disease, Lockdown, Psychological Impact, Stress.**

### **Introduction**

Humankind is confronting a severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) which is known as coronavirus disease 2019 (COVID-19). The rapid spread of the novel coronavirus, SARS-CoV-2 throughout the world has become a public health emergency on a global scale. The COVID-19 pandemic has forced administrations to take unprecedented measures to stop the spread of COVID-19. Even though such measures have potential benefits, however, due to social isolation, restrictions on movement, a shutdown of schools, quarantine at home, cancellation of amusement and sports events, etc. had led to mental health problems (Galae S et. al, 2020; Brooks, S. K, 2020).

Reynolds, D. L. et. al (2008) has been reported that quarantine due to severe acute respiratory syndrome (SARS) and middle east respiratory syndrome (MERS) epidemic in the past has been associated with a higher prevalence of stress-related mental disturbances, such as anxiety, and depression. Hence, there have been many studies conducted in India to assess the mental health problems of people after the implementation of prophylactic measures by the Government in this pandemic situation. Hence, there have been many studies performed in India to assess the mental health of people after the implementation of prophylactic measures by the Government in this pandemic situation.



A study from West Bengal on the ‘psychological impact of COVID- 19 pandemic on general population’ reported that worry and sleep disturbances were common among the respondents due to the lockdown and the prevailing of the COVID- 19 pandemic (Chakraborty, K., & Chatterjee, M, 2020). Another study conducted by Gupta et al., reported that the COVID- 19 lockdown is associated with changes in sleep schedule and the quantity and quality of night- time sleep. In addition, a study on the ‘psychological impact of lockdown due to COVID- 19 pandemic on the general public’ reported that the impact of lockdown and the prevailing of the COVID- 19 pandemic was observed in more than two-fifths of the people who are experiencing common mental disorders (Grover, S et al, 2020).

Sikkim is a small state of India and is in increased danger of COVID-19 pandemic due to boundaries shared with the three international boundaries such as China, Bhutan, and Nepal. In Sikkim, there was not a single case of COVID-19 reported till 22 May 2020, due to the strict implementation of Govt. guidelines to contain the spread of the disease. However, after the lockdown was lifted by the Govt. and the homecoming of its denizens, the first case of COVID-19 was reported from one of the quarantine centers of the state. After that, the state also observed an increasing number of COVID-19 cases in its quarantine centers. But now, every district of Sikkim reports the case of COVID-19. However, on the good side, many of them were cured and have been discharged from the centers.

Due to the above-mentioned situation triggered due to the pandemic the people in the state are in apprehension. Indeed, many studies have reported that the COVID-19 pandemic has led to many mental disorders such as acute stress, PTSD, anxiety-related disorders, depression, etc. (Gualano, M. R et al, 2020). Among all, stress has been found as one of the main factors associated with the COVID-19 pandemic. Stress can be defined as our responses to events that disrupt, or threaten our physical or psychological functioning. In addition, it will also exert negative effects on both physical and psychological health (Husky, M. M, et al 2020; Lazarus R. S, et al 1984). Therefore, the present study aims to investigate the psychological impact of the COVID-19 pandemic and Perceived Stress among the denizens of Sikkim and also help to understand the impact of the COVID-19 pandemic on the mental health of people.

## **Materials and Methods**

**Sample:** The present study was conducted on 380 males and females between the age ranges of 18-50 years from Sikkim. The online survey was performed among the denizens of Sikkim by using the Google Form with a link sent through WhatsApp, Messenger, and E- mail. Each participant received a PDF booklet containing background demographic profiles and the psychological measures of Knowledge and attitude towards the COVID- 19 pandemic, the psychological impact of the COVID- 19 pandemic on the respondents, and the Perceived Stress Scale (PSS-10). The inclusion criteria for the present survey were denizens of Sikkim, able to read English, had an internet connection, and aged more than 18 years. The exclusion criteria were not having the interest to participate and not providing informed consent.

## **Instruments used**

### **Knowledge and attitudes of the respondents towards the COVID- 19 pandemic**

It is a 6-item questionnaire that was used to understand the awareness of the COVID- 19 pandemic among the participant.



**The psychological impact of the COVID- 19 pandemic on the respondents:**

It is a 22-items questionnaire used to assess the impact of lockdown due to the prevailing COVID- 19 pandemic on the psychology of respondents.

**A psychological tool used:**

Perceived Stress Scale (PSS-10: Cohen, Kamarck, and Mermelstein. 1983; Cohen and Williamson, 1988).

A 10 items questionnaire ‘Perceived Stress Scale’ was used to assess the level of stress among the participants. The scale scores ranged from 0- 40, with higher scores indicating higher levels of stress.

**Procedure:**

The original versions of all the psychological instruments/scales were used after informed consent was obtained assuring them in maintaining the confidentiality and keeping in mind the ethical considerations. The data obtained were screened, cleansed, and coded for further statistical analyses.

**Ethical considerations**

- All participants were asked if they want to participate and only those who voluntarily participate are chosen for the collection, taking into consideration with the respect to the rights of the participants to withdraw at any point in time.
- Seek permissions and inform consent are taken from the participants and related authorities.
- Maintain confidentiality of the participants and the data collected.
- Inform participants about the purpose of the research and inform them how the research should be used only for academic purposes.
- Acknowledging the participant's contributions.

**Statistical Analyses**

The psychometric properties of each of the scales of the psychological measures were ascertained. Descriptive analysis was computed in terms of mean and standard deviation with range for continuous variables while categorical variables were represented using percentages. Student’s t-test and One-Way ANOVA were used for continuous variables and the Chi-square test for categorical variables P-value less than 0.05 was considered significant.

**Results**

**The result (Table-1) shows the descriptive statistics (mean, standard deviation) for all the socio-demographic profiles.**

<b>Variables</b>	<b>Frequency (%)</b>
Age (mean; standard deviation)	27 ±5.02 (range 18-50 years)
Gender	
Male	195 (51.32%)
Female	185 (48.68%)
Other	Nil
Profession	
Health professional	11 (2.89%)
Administrative officials- includes LDC, police engineer-	48 (12.63%)



Academician (professor/teacher/lab technician)-	62 (16.32)
Private sector employee-	54 (14.21%)
Student-	170 (44.74%)
Others (lawyer, farmer,businessmen)-	35 (9.21%)
Level of education	
10th pass	10 (2.63%)
12th pass	35 (9.21%)
Graduate	148 (38.95%)
Postgraduate	166 (43.68%)
Postdoctoral	21 (5.53%)
Religion	
Hindu	220 (57.89%)
Buddhist	87 (22.89%)
Muslim	51 (13.42%)
Christian	5 (1.32%)
Others	17 (4.47%)
Residence	
Rural	253 (66.58%)
Urban	127 (33.42%)

Above table also revealed that the total respondents, 195 (51.32%) were male and 185 (48.68%) were females. The mean age of the respondents was 27±5.02 (18-50 years).

**Table-2: The result shows the Knowledge and attitude of the respondents toward coronavirus disease 19 pandemic.**

Variables	Frequency (%)
Have you heard about COVID- 19 pandemic?	
Yes	379 (99.74%)
No	0 (0.00%)
May be	1 (0.26%)
What is COVID- 19?	
Bacterial disease	29 (83.42%)
Severe flu- like illness caused by (nCoV/SARS)	317 (7.63%)
Disease caused by protozoa	0 (00%)
Others	34 (8.95%)
What are the symptoms of COVID- 19?	
Fever	5 (1.32%)
Cough	4 (1.05%)
Body aches and pains	0 (0.00%)
Shortness of breath	0 (0.00%)
Sneezing	5 (1.32%)
All of the above	366 (96.32%)
What are the options to stop COVID- 19 pandemic?	
Social distancing	3 (0.79%)
Hand washing	0 (0.00%)



Cough etiquette	0 (0.00%)
Wearing mask	0 (0.00%)
All of the above	377 (99.21%)
Do you support the government's decision of day lockdown?	345 (90.79%)
Yes	8 (2.11%)
No	27 (7.11%)
May be	
Are you satisfied with the steps taken by the central and state government to contain COVID- 19 pandemic?	
Yes	183 (48.16%)
No	32 (8.42%)
To some extent	165 (42.42%)

From the table-2, we can conclude that, among all the respondents, 99.74% respondents have heard about the COVID- 19 pandemic. Similarly, about 83.42% respondents knew about the causative agent of COVID- 19. Majority of respondents were well aware about the symptoms of COVID-19 and have knowledge of options to stop COVID- 19, such as social distancing, hand washing, cough etiquette, and wearing mask. Most of the respondents 345 (90.79%) were in support of the government's decision of lockdown. Among the respondents 183 (48.16%) were satisfied, 32 (8.42%) were not satisfied and 165 (42.42%) were satisfied to some extent to the steps taken by the central and state government to contain COVID- 19 pandemic.

**Table 3: The result shows the psychological impact of Covid-19 pandemic on the respondents.**

Variables	Frequency (%)
Have you come in direct contact with COVID- 19 patient?	
Yes	5 (1.32%)
No	375 (98.68%)
Are you associated with the care of suspected/confirmed COVID- 19 patients?	
Yes	34 (8.95%)
No	346 (91.05%)
Is there any confirmed COVID- 19 patient in your locality?	
Yes	88 (23.16%)
No	292 (76.84%)
Are you feeling worried more than usual in the last 2 weeks?	
Yes	212(55.79%)
No	168 (44.21%)
Are you preoccupied with the idea of contracting COVID- 19 during the past 2 weeks?	
Yes	105(27.63%)
No	275 (72.37%)
Have your sleep- cycle become disturbed in the past 2 weeks?	
Yes	90 (23.68%)
No	290(76.32%)
Do you keep checking for fever with thermometer repeatedly in the past 2 weeks?	
Yes	30 (7.89%)
No	350 (92.11%)



Have you visited doctor(s) on multiple occasions to rule out the symptoms of COVID- 19 in the past 2 weeks? Yes No	8 (2.11%) 372 (97.89%)
Are you taking the prophylactic dose of hydroxychloroquine (as advised by ICMR) to ward off COVID- 19? Yes No	29 (7.63%) 351 (92.37%)
If the answer to the above question is “yes,” are you taking it on the advice of a doctor? Yes No, on my own Not applicable	8 (2.11%) 21 (5.52%) 351 (92.37%)
Are you feeling depressed for most of the time in the past 2 weeks? Yes No	72 (18.95%) 308 (81.05%)
Are you worried more than usual about the future of yourself and family members in the past 2 weeks? Yes No	260 (68.42%) 120 (31.58%)
Have you become more irritable than usual in the past 2 weeks? Yes No	145 (38.16%) 235 (61.84%)
Are you worried about the financial loss that you are incurring during the period of lockdown? Yes No	211 (55.53%) 169 (44.47%)
Have you done routine blood tests in the past 2 weeks to be sure that your health is ok? Yes No	18 (4.74%) 362 (95.26%)
Do you get more worried after reading the WhatsApp or Facebook messages related to COVID- 19 in the past 2 weeks? Yes No May be	174 (45.79%) 94 (24.74%) 112 (29.47%)
How are you spending time during the lockdown? Reading books Watching movies Doing household chores Laying/sleeping Listening to music Engaging in social media Painting Work from home Others Playing mobile game Using facebook	46 (12.11%) 42 (11.05%) 88 (23.16%) 9 (2.37%) 13 (3.42%) 29 (7.63%) 3 (0.79%) 71 (18.68%) 17 (4.47%) 22(5.79%) 40 (10.53%)





Have you taken the help of psychiatry helpline to reduce your anxiety or depression during the past 2 weeks? Yes No	5 (1.32%) 375 (98.68%)
Are you on any antidepressant(s)/anti- anxiety medication which has been started in the past 2 weeks? Yes No	6 (1.58) 374 (98.42%)
Are you taking any sleep medication for the past 2 weeks? Yes No	4 (1.05%) 376 (98.95%)
How do you think COVID- 19 pandemic has affected your mental status negatively? Has affected me to some extent Has affected me to a great extent Has not affected me at all	259 (68.16%) 16 (4.21%) 105 (27.63%)
Do you find that COVID-19 pandemic has posed a threat to your existence? Yes No May be	122 (32.11%) 132 (34.74%) 126 (33.16%)
Have you found it difficult to adjust to the new routine during the lockdown period? Yes No May be	183 (48.16%) 122 (32.11%) 75 (19.74%)
Do you think that COVID- 19 is dangerous disease? Yes No	294 (77.37%) 86 (22.63%)
Do you think this COVID- 19 will gone astray? Yes No	201 (52.89%) 179 (47.11%)
Do you get afraid when you heard you neighbor or friend get COVID-19 positive? Yes No	310 (81.58%) 70 (18.42%)

The outcome of Table 3 revealed that the participants of 5 (1.32%) were found to have come in direct contact with COVID- 19 patients. The majority of respondents 346 (91.05%) were not associated with the care of suspected/confirmed COVID- 19 patients. 23.16 % of respondents had confirmed COVID- 19 patients in your locality. More than 50 % of respondents were worried more than usual in the last 2 weeks and 41.84 % of respondents were preoccupied with the idea of contracting COVID- 19 during the past 2 weeks. 105(27.63%) percent of respondents were repeatedly thinking of getting themselves tested for the presence of COVID- 19 in their body (although you have no symptom), sleep cycle was disturbed in 90 (23.68%) of respondents in the past 2 weeks. Only 30 (7.89%) and 8 (2.11%) of respondents were checked for fever with a thermometer repeatedly in the past 2 weeks and visited the doctor(s) on multiple occasions to rule out the symptoms of COVID- 19 in the past 2 weeks respectively.

About 29 (7.63%) respondents were taking the prophylactic dose of hydroxyl chloroquine (as advised by ICMR) to ward off COVID- 19 among which most of the respondents i.e., 21 (5.52%) were taking without doctor advice. 72 (18.95%) of respondents were feeling depressed for most of the time in the



past 2 weeks. The majority of respondents 260 (68.42%) were worried more than usual about the future of themselves and family members in the past 2 weeks.

About 145 (38.16%) respondents were becoming more irritable than usual in the past 2 weeks and 211 (55.53%) respondents were worried about the financial loss that you are incurring during the period of lockdown. The minority of the respondents 18 (4.74%) were done routine blood tests in the past 2 weeks to be sure that their health is ok. Most of the respondents 174 (45.79%) were worried after reading the WhatsApp or Facebook messages related to COVID- 19 in the past 2 weeks. Doing household chores was done by most of the respondents 88 (23.16%) to spend during the lockdown. Only a few 5 (1.32%), 6 (1.58%), and 4 (1.05%) respondents were taken the help of a psychiatry helpline to reduce their anxiety or depression during the past 2 weeks, took antidepressant(s) /anti- anxiety medication which has been started in the past 2 weeks and taking any sleep medication for the past 2 weeks respectively.

The majority of respondents 259 (68.16%) found that the COVID- 19 pandemic had affected their mental status to some extent. 122 (32.11%) respondents found that the COVID- 19 pandemic has posed a threat to your existence and most of the respondents 183 (48.16%) found it difficult to adjust to the new routine during the lockdown period. The majority of respondents 294 (77.37%) thought that COVID- 19 is a dangerous disease; however, 201 (52.89%) respondents believed that COVID- 19 will be disappeared. About 310 (81.58%) respondents got afraid when they heard their neighbor or friend get COVID-19 positive.

**Table-4: Descriptive statistics (mean, standard deviation) and internal consistency (Cronbach’s Alpha) of the scales Perceived Stress Scale.**

Variable	PSS 10 (Mean Standard deviation)	Statistical value
Total mean score	15.28 ±7.13	-
Female	16.28 ±7.26	t=2.740, df=366 p=.006
Male	14.26 ±6.85	
Rural	18.08 ±5.13	t=1.840, df=348 p=0.067
Urban	18.65 ±6.36	
Secondary	11.73 ±6.74	F=2.707, df=4 p=0.03
Senior secondary	13.61 ±8.51	
Graduate	15.32 ±6.97	
Post-graduate	16.75 ±6.39	
Research scholar	15.88 ±4.99	
Age		F=1.401, df=3 p=0.242
18-20	16.27 ±9.97	
21-30	15.91± 6.62	
31-40	14.63 ±7.19	
41-50	11.17 ±3.06	

From Table 4, it can be concluded that the mean score of females is significantly higher than that of males. Similarly, the mean score was significantly higher in an urban area than the rural area. The mean PSS 10 score was found to be increased with the increase in education and the One-Way Anova





analysis suggested that there were significantly different. Further, the mean PSS 10 score was significantly decreased with the increase in age of respondents, however, it was not significantly different.

## Discussion

The findings of the present study as reported in the above-mentioned results get corroborative evidence from the theoretical foundations pertaining to the psychological measures as employed and from the extant of empirical research. As the present study is the first of its kind which was conducted through an online survey to evaluate the psychological impact due to prevailing lockdown among denizens of Sikkim.

The study showed that the majority of people are well aware of COVID-19 and more than 80% of people were aware of the symptoms of COVID- 19 and precautionary steps to be followed to prevent the spread of the disease. The majority of people support the government lockdown decision and were satisfied to some extent whereas only a few people were against it. In addition, more than fifty percent of the participant of the present study were worried and found to be anxious and their sleep- sleep- cycle was also disturbed. Present results are in line with the previous study by Chakraborty and Chatterjee, 2020.

Among all the participants 29 (7.63%) individuals were taking a prophylactic dose of hydroxychloroquine out of which 21 (5.52%) of the participants were taking it without a doctor's advice. It is a matter of serious concern that hydroxychloroquine has many dreaded side effects and people are taking the drug without the advice of a doctor. About 72 (18.95%) participants were feeling depressed and 145 (38.16%) participants were becoming more irritable most of the time in the past 2 weeks respectively. Therefore, it is evident that the COVID- 19 pandemic has negatively affected the mental health status of the participant (Alkhomees A. A, et al, 2020).

However, only a few participants (1-4%) have taken the help of a psychiatrist and are under medication. It has been found that social media exposure was associated with depression and anxiety during the COVID-19 outbreak (Gao J et al, 2020). More than fifty percent of the participants were worried about the financial loss that are incurring during the period of lockdown. The present study observed that the majority of the participant got more worried after reading the WhatsApp or Facebook messages related to COVID- 19 in the past two weeks. This result shows that too much exposure to the media may increase fear and overestimate the risk of COVID-19 which leads to mental health problems (Thygesen, H et al, 2022).

As a result, most of the participants were spending time during the lockdown doing household chores followed by working from home as many of the servicemen may have gone to their homes in the rural areas (66.58%). About 80.58% of the participant was found to get afraid when they hear a neighbor or friend get COVID-19 infected. However, the majority of participants 201 (52.89%) believed that the battle against COVID 19 can be won and disappear from humankind which is in agreement with a study from Nepal (Rajbanshi, M et al, 2022).

The present study also revealed that the stress levels (PSS-10) were moderate among the participants. Likewise, the mean total score of PSS-10 was significantly higher in females than the males which are in line with the findings by Remor, 2006. It may be possible due to sex differences in coping with



stress, and generally, females had high levels of stress than males (Hovanitz, C. A et al, 1989; Tamres, L. K et al, 2016).

Gruebner et al. (2017) reported that major mental illnesses were higher in urban than rural areas. Our previous investigation also showed a higher rate of suicide in urban areas of Sikkim (Chettri, R et al, 2016). It has been suggested that urban environments are more stressful due to substandard housing, noise pollution, and inadequate services (Krupat, E, 1980; Glass D.C, 1972). While study done by House, J. S, reported that in rural areas, social support and social interactions are higher as compared to urban areas.

Consistent with the other studies, the present study was found to decrease with the increase in age of the respondents although it was not significant (Warttig, S. L, 2013; Vallejo, M. A, 2018). The reason for levels of stress decrease with an increase in age may be due to a shift in motivation to avoid situations and satisfy goals in order age which minimize negative emotional experiences (Carstensen L. L, et al, 1999). Similarly, PSS total score revealed that the levels of stress were high in higher education. However, the level of stress was low in research scholars compared to post-graduate students. The possible reasons for these results are probably due to the financially sound of the research scholar. As, Sikkim is very fresh in the research field due to which competition is not very high, and higher opportunities for jobs for research scholars in Sikkim. In addition, post-graduate students are on verge of completing their education life and they might have the pressure of society, family, and future careers.

### **Conclusions**

The state of Sikkim is struggling with mental health issues such as a high rate of suicide (Chettri et al., 2016) and the COVID-19 pandemic has further added burden to the mental health of the denizens of Sikkim. Therefore, there is a need to further examine the psychological effects COVID-19 pandemic on vulnerable groups and develop well-coordinated strategic plans, and implement them to reduce the psychological impact of the COVID-19 pandemic among the denizens of Sikkim. It is worth mentioning that the current prevailing COVID-19 is an opportunity for humankind to learn to deal with and formulate coping strategies in case of a pandemic in the future.

The limitations of this research should be noted. Firstly, the sample size of the participants was small. Since the sample was a convenience sample, it may not be representative of the whole Sikkim population. Secondly, the present survey was limited to participants who had access to a smartphone device and availability of Internet access. Thirdly, students shared the major size of the sample. Further extended studies with the inclusion of externally valid psychological variables are required to throw some light on future prevention and intervention for the improvement of general health for the target population of the study. Considering these limitations, the present study highlights the significant impact of the COVID-19 pandemic on the mental health of the denizens of Sikkim.



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