

Research Paper

Analysis of the Mental State of People on COVID-19 Pandemic

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ABSTRACT

Background: The COVID-19 pandemic would have probably affected the mental state of people due to its severity and recurrence. **Aim:** In this background, a study was undertaken to understand the mental state of people on the pandemic through the analysis of their feelings towards various psychological aspects related to the pandemic. **Tools used:** Negative and positive feelings on various aspects related to the pandemic were analyzed based on data collected on-line from 200 randomly selected respondents from Kerala State of India using a questionnaire containing ten items with five-point responses scored from 0 to 4, as proposed by Pedrozo-Pupo et al (2020). The total mental state score of the respondents was worked out as the sum of scores of the items. The level of negative mental state in relation to the condition of “no negative mental state experienced” was calculated. The data was analyzed through Chi-square test, Mann-Whitney-U Test and Odds ratio test. **Results:** Majority of the respondents have not experienced high level of negative feelings/mental state on the pandemic, while most of them experienced the positive feelings well. Females experienced comparatively high level of negative feelings related to the pandemic than males. Younger people had comparatively higher negative feelings than those who are aged. Chi-square test showed that age influences the mental state of people on the pandemic. Mann-Whitney-U Test revealed that the difference in mental state score between people aged 20 to 50 and 50 to 80 years is significant. The Odds ratio for age and sex indicates that respondents in the 20-50 age group have 113 % more chance of getting a lower total mental state score / experiencing higher level of negative mental state on the pandemic than those in the 50-80 age group, while females have 93 % more chance of getting a lower total mental state score / experiencing higher level of negative mental state than males. **Conclusions:** Majority of the respondents did not experience high level of negative feelings/mental state on the pandemic, while most of them experienced the positive feelings well. Comparatively high level of negative feelings was experienced by females than males, and by younger people than aged. The usefulness of undertaking studies on the psychological outcome of COVID among different sections of people in various States of India is highlighted in the paper, which may be helpful for those working in the health sector to advocate specific measures to overcome probable psycho-somatic disorders arising out of the pandemic

Keywords: COVID-19 Pandemic, Mental State, Kerala

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Analysis of the Mental State of People on COVID-19 Pandemic

The COVID-19 pandemic which started in 2020, with a subsequent wave in 2021 brought about unsurmountable problems for people and institutions in terms of contracting the disease, deaths, mental health problems, loss of income/jobs, restrictions on movement/travel, economic loss etc. The prevalence of high distress among Indians at the time of COVID-19 has been reported (Anand et al, 2021). Roy et al (2021) reported major mental health issues in India due to the COVID 19 pandemic as stress, anxiety, depression, insomnia, denial, anger and fear.

Mental state is every aspect of an organism's inner state that could contribute to its behaviour or other responses, which may comprise of all thoughts, feelings, beliefs, intentions, active memories and perceptions that are present at a given moment. (<https://www.google.com/search?q=are+feelings+part+of+mental+state&oq=are+feelings+part+of+mental+state&aqs=chrome..69i57j33i22i29i30.13034j0j4&sourceid=chrome&ie=UTF-8> - retrieved 6th September 2021). The COVID-19 pandemic would have probably affected the mental state of people on account of the problems and uncertainty due its severity and persistence. It is in this background that this study was undertaken to understand the mental state of people on the pandemic, with the assumption that the results could prove useful for adopting suitable measures to overcome specific psychological problems, if any, faced by people.

METHODOLOGY

Procedure

Negative and positive feelings of the respondents on various aspects related to the pandemic were analyzed through ten items, as proposed by Pedrozo-Pupo et al (2020). The five-point responses to the items were scored from 0 to 4, with reverse scoring for positive items. The sum of scores of the items was considered as the total mental state score of the respondent. The maximum possible total mental state score in the study is 40, which a respondent will get if he/she gives the response, namely, “never” for all negative mental state items and the response, namely, “very often” for the positive items.

The level of negative mental state of respondents in relation to the condition of “no negative mental state experienced” was worked out by subtracting the total score from the maximum possible total score of 40 (which indicates “no negative mental state experienced”), and expressing it as a percentage out of 40. Higher the total score, less is the negative mental state.

Sample

Data was collected on-line from a random sample of 200 respondents from Kerala State of India using a questionnaire containing the ten mental state items and the characteristics of the respondents such as sex and age.

Statistical analysis

The data was analyzed through Chi-square test, Mann-Whitney-U Test and Odds ratio test and presented as proportions and scores.

RESULTS

Table 1 shows the COVID-19 pandemic related feelings experienced by the respondents. Regarding the negative feelings - Sl. no. 2,3,6,9 and 10 in Table 1, majority report experiencing them never and almost never. Only in the case of one negative feeling, namely, felt affected as if something serious will happen unexpectedly with the COVID-19 epidemic

Analysis of the Mental State of People on COVID-19 Pandemic

(Sl.no.1), total of 46 % respondents report either never or almost never. However, this proportion is more than those who report experiencing this negative feeling very much and fairly often, and even those reporting as sometimes (Table1).

Considering the positive feelings- Sl. no. 4,5,7and 8, total of more than 55 % respondents report experiencing them very much and fairly often (Table 1). Respondents in the range of 18 to 26 % (total) only report experiencing these positive feelings never and almost never (Table1).

Table 1. Experience of COVID -19 related feelings by the respondents

Sl. no.	Feeling	Respondents (%) reporting					Total (%)
		Very much	Fairly often	Some times	Almost never	Never	
1	I have felt affected as if something serious will happen unexpectedly with the COVID-19 epidemic	12.0	6.0	36.0	16.0	30.0	100
2	I have felt that I am unable to control the important things in my life due to the epidemic	4.0	10.0	28.0	20.0	38.0	100
3	I have been nervous or stressed by the epidemic	6.0	12.0	30.0	14.0	38.0	100
4	I have been confident about my ability to handle my personal problems related to the epidemic	42.0	28.0	8.0	10.0	12.0	100
5	I have felt that things are going well (optimistic) with the epidemic	32.0	26.0	16.0	14.0	12.0	
6	I have felt unable to cope up with the things I have to do in order to control the possible COVID-19 infection	2.0	4.0	30.0	22.0	42.0	100
7	I have felt that I can control the difficulties that could appear in my life due to the COVID-19 infection	26.0	40.0	16.0	10.0	8.0	100
8	I have felt that I have everything under control in relation to the COVID-19 epidemic	30.0	26.0	24.0	12.0	8.0	100
9	I have felt that difficulties accumulate in these days of the COVID-19 epidemic and I feel unable to overcome them	2.0	8.0	22.0	32.0	36.0	100
10	I have been upset because things related to the COVID-19 epidemic are out of my control	Nil	14.0	20.0	28.0	38.0	100

Table 2 shows the range of total mental state score of the respondents. Only 18 % have a low total score in the range of 12 to 19, equivalent to a high level of negative mental state of 70 to 52.5 % respectively, when compared to the condition of no negative mental state due to the pandemic. 52 % respondents have score in the range of 21 to 29, equivalent to 47.5 to 27.5 % of negative mental state respectively. 16 % respondents have total score in the range of 32 to 38, equivalent to only 20 to 5 % negative mental state respectively. Further, there are 14 % respondents who have not experienced any negative mental state at all due to the pandemic (Table 2).

Analysis of the Mental State of People on COVID-19 Pandemic

Table 2. Range of total mental state score of the respondents

Range of total mental state score	Respondents (%)
12-19	18
21-29	52
32-38	16
40	14
Total	100

It can be made out from Table 3 that while 22 % of females have total score in the range of 12 to 16, which works out to a high level (70 to 60 %) of negative mental state in comparison with the condition of no negative mental state experienced due to the pandemic, none of the males report this high level of negative mental state. While 18.5 % males have total score in the range of 32 to 36 (low level of negative mental state of 20 to 10%), only 13 % females have score in the range of 32 to 38, equivalent to an almost similar level (20 to 5 %) of negative mental state. Further, while 18.5 % males have a score of 40 (indicating no negative mental state at all), only 8.5 % of females report this (Table 3).

Table 3. Sex wise range of total mental state score

Range of total mental state score	Respondents (%)	
	Male	Female
12-16	Nil	22.0
16-18	15.0	Nil
21-29	Nil	56.5
22-29	48.0	Nil
32-36	18.5	Nil
32-38	Nil	13.0
40	18.5	8.5
Total	100	100
Chi-Square test	4.45 ^{NS}	

Table 4 shows that none of the respondents in the younger age group of 20-50 years have a high total score in the range of 32 to 38, indicating only 20 to 5 % negative mental state respectively (in relation to the condition of no negative mental state). However, 17.5 % of respondents in the 50-80 age group are having this low level of negative mental state (Table 4).

While 35 % respondents under the 50-80 age group have not experienced any negative mental state at all (score of 40), it is only 3 % in the 20 to 50 age group (Table 4).

Table 4. Age wise range of total mental state score

Range of total mental state score	Respondents (%)	
	20-50 years of age	50-80 years of age
12-16	21.0	Nil
16-18	Nil	12.0
21-29	Nil	35.5
22-29	60.5	Nil
32-36	15.5	Nil
32-38	Nil	17.5
40	3.0	35.0
Total	100	100
Chi-Square test	11.37; Significant at $p < 0.05$	

Analysis of the Mental State of People on COVID-19 Pandemic

The Chi-square test of age wise total mental state score is significant (Table 4). However, Chi-square test of sex wise total mental state score is non-significant (Table 3).

Table 5 shows the statistically significant result of the Mann-Whitney-Wilcoxon Test comparing the total mental state score of two categories of age.

Table 5. Test of significance of difference in age wise total mental state score

Details	Total mental state score of respondents	
	Age group (years)	
	20-50	50-80
	25.2	31.1
Mann-Whitney-U Test Statistic	167; Significant at $p < 0.05$	

Table 6 shows the results of the odds ratio test, which indicates the extent to which one category of sex and age has the chance to get a lower total mental state score (indicating higher level of negative mental state related to the pandemic) than the other category of these characteristics.

Table 6. Odds ratio of age and sex wise total mental state score

Details	Age group	Sex
	20-50 vs. 50-80	Females vs. Males
Odds ratio	2.13	1.93

DISCUSSION

The results in Table 1 indicate that the extent of negative mental state related to the pandemic experienced by the respondents is not very much, while, majority have been able to experience the positive feelings well. This assumes significance, since such a trend observed after the first and second wave (which probably had more consequences) after which this study was carried out, can be considered as favourable in terms of the COVID related mental health of people. This is also promising, considering the rising rates of mental health disorders reported as a consequence of the second wave of COVID in various countries (Simon et al, 2020).

The results presented in Table 2 show that majority of the respondents in the study have not experienced high level of negative feelings related to the pandemic. Chandran et al (2020) have reported that majority of the respondents had low to medium uncertainty only due to the first wave of COVID 19 pandemic, and even though anxiety increased after the pandemic, most of the respondents reported low to medium anxiety only.

Based on the data presented in Table 3, it can be inferred that females have experienced comparatively higher negative feelings related to various aspects of the pandemic than males. KFF Health Tracking Polls conducted during the COVID 19 pandemic have generally found that women are more likely than men to report negative mental health impacts (Source: Nirmita Panchal, Rabah Kamal, Cynthia Cox and Rachel Garfield. The Implications of COVID-19 for Mental Health and Substance Use. Published: Feb 10, 2021. <https://www.kff.org/coronavirus-covid-19/issue-brief/the-implications-of-covid-19-for-mental-health-and-substance-use/>- retrieved 5th September 2021)

Analysis of the Mental State of People on COVID-19 Pandemic

Younger respondents have experienced comparatively higher negative feelings related to the pandemic than aged people (Table 4). In a study, which examined the impact of COVID-19 pandemic on psychological distress globally, younger age groups were found to be more vulnerable to stress, depression and anxiety symptoms (Varma et al, 2021)

The results of Chi-Square test indicates that age is associated with the mental state of the respondents on the pandemic (Table 4). However, gender of the respondents was not found to influence their mental state (Table 3).

Based on Mann-Whitney-Wilcoxon Test, the difference in mental state score between 20 to 50 and 50 to 80 years age is statistically significant (Table 5). However, no significant difference in score is observed between males and females.

The odds ratio of 2.13 for age (Table 6) implies that respondents in the 20-50 age group have 113 % more chance of getting a lower total mental state score / experiencing higher level of negative mental state related to the pandemic than those in the 50-80 age group. This is also confirmed from the data presented in Table 4, which shows that younger respondents have experienced comparatively higher negative feelings related to various aspects of the pandemic than aged people. The odds ratio of 1.93 for sex (Table 6) indicates that females have 93 % more chance of getting a lower total mental state score / experiencing higher level of negative mental state related to the pandemic than males. Data presented in Table 3, which shows that females experienced comparatively higher level of negative feelings than males support the odds ratio result for sex of the respondents. In their study, Kocak et al (2021) found that women and youths in the age group of 16 to 25 years had higher COVID-19 related fear, anxiety, depression and stress.

CONCLUSIONS

1. The data showed that majority of the respondents have not experienced high level of negative feelings related to the pandemic, while majority have been able to experience the positive feelings well.
2. Females experienced comparatively higher negative feelings related to the pandemic than males.
3. Younger people experienced comparatively higher negative feelings than those who are aged.
4. Chi-square test showed that age influences the mental state score of people.
5. Mann-Whitney-Wilcoxon Test revealed that the difference in score of people aged 20 to 50 and 50 to 80 years is significant.
6. The odds ratio for age indicates that respondents in the 20-50 age group have 113 % more chances of getting a lower total mental state score / experiencing higher level of negative mental state related to the pandemic than those in the 50-80 age group.
7. The odds ratio for sex of the respondents indicates that females have 93 % more chances of getting a lower total mental state score / experiencing higher level of negative mental state related to the pandemic than males.

It will be useful if studies on psychological outcome of the COVID pandemic are undertaken among different sections of people in various States of India, also involving institutions such as NGOs etc. who have the expertise and contact with people. This would help to get a better picture of the issues being faced by various categories of people in different places, which could be useful for those working in the health sector to advocate specific measures to overcome them. Handling the mental health problems arising out of more COVID pandemic

Analysis of the Mental State of People on COVID-19 Pandemic

waves in the future will be necessary to reduce probable psycho-somatic disorders, which, otherwise may be a burden for people as well as the Government, which is already reeling under pressure due to various problems created by the two waves of the pandemic.

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Conflict of Interest

The author(s) declared no conflict of interest.

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