

Analysis of the Psychological State of People during the Covid - 19 Pandemic

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Abstract

The COVID-19 pandemic could have affected people not only physically, but also psychologically. It is in this background that this study was undertaken by WEDO (NGO), Kozhikode, Kerala, India. Data was collected on-line using a questionnaire containing 15 psychological traits and their level of experience, and the characteristics of respondents such as age, sex, education etc. from a sample of 300 respondents from India using the snow ball sampling technique. The total score of the traits was worked out as the psychological state score. The data was analyzed as proportion / score and through statistical tests. The COVID-19 pandemic has influenced the psychology of the respondents negatively. The influence of existing tension of people in creating more tension during the pandemic period is evident from the study. Random Forest technique results show that Enthusiasm, Satisfaction, Loving nature and Peacefulness are the main psychological traits, which influence the personality state score. The characteristics of respondents such as age, education, pre COVID tension and pre COVID tension affecting the tension during the pandemic period are found to influence the personality score statistically through Chi-square test. Odds ratio test shows that respondents with PG qualification have about 4.62 times more chance of maintaining a better psychological state during the pandemic period than less educated people. Males have 1.16 times more chance of maintaining a better psychological state than females. The study has revealed the negative effect of the COVID-19 pandemic on the psychological state of people, with majority attributing this to the pandemic itself.

Keywords: psychological traits, Enthusiasm, Satisfaction, Loving nature, COVID-19

Introduction

COVID-19 disease is an infectious disease caused by the SARS-CoV-2 virus. In addition to the physical medical effects through contracting the disease, the psychological or mental impact of the pandemic could be significant, even in people who have not got the disease. Factors such as loss of job / income, separation from family, isolation, fear of the disease etc. can lead to negative psychological conditions. Konstatntinos Kontoangelos et al (2020) opined that extensive stressor will emerge or become worsened due to the COVID-19 pandemic. It was in this background that the study reported in this paper was carried out to analyse the psychological state of people during the pandemic period.

Materials and Methods

The study was undertaken by WEDO (NGO), Kozhikode, Kerala, India using an on-line questionnaire among a sample of 300 respondents from various parts of India using the snow ball sampling technique. 15 psychological traits (shown in Table 1) were considered to analyse the psychological state of the respondents during the COVID-19 pandemic period. The responses to the level of experience of the traits (on an average during the pandemic period) were: Felt very strongly, Felt strongly, Felt moderately, Felt slightly, Did not feel with scores of 1, 2, 3, 4 and 5 respectively. The sum of scores of the traits was considered as the psychological state score of the respondents during

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the pandemic period. A higher score indicates a more positive psychological state and vice versa. The data was analysed as proportion / score and through statistical techniques such as Random Forest technique, Chi-square test and Odds Ratio.

Results and Discussion

Table 1: shows the proportion of respondents reporting the experience of various psychological traits during the COVID-19 pandemic period. It can be made out from Table 1 that 50 % and more of the respondents have not at all experienced and experienced only slightly the positive traits such as happiness, feeling lively, satisfied, energetic, enthusiastic and peaceful during the COVID-19 pandemic period. Similarly, more than 50 % and more of the respondents have experienced the negative personality traits, namely, sadness, tiredness, anger and uneasiness moderately during the pandemic period (Table 1). These results indicate that the pandemic has influenced the psychology of the respondents in a negative manner. Mahmoud AL-Omiri et al (2021) reported that COVID-19 was associated with feelings of stress, depression, sadness, and loneliness. Elements such as separation from loved ones, loss of freedom, uncertainty about the advancement of the disease, and the feeling of helplessness due to the pandemic affect people more (Cao et al., 2020; Li and Wang, 2020).

It can be observed from Table 2 that respondents in the range of 60 to 80 % attribute less experience (indicating the responses, namely, did not feel at all, and felt slightly only) of six out of the seven positive psychological traits to the COVID-19 pandemic. Similarly, 66.7 to 100 % respondents have attributed more experience (indicating the responses, namely, felt strongly, and felt very strongly) of five out of six negative psychological traits to the occurrence of the pandemic (Table 2). These results also indicate the negative influence of the pandemic on the psychology of the respondents.

60 % of the respondents reported that pre-COVID tension has affected the tension experienced by them after the pandemic (Table 3). It can also be made out from Table 3 that a comparatively higher proportion of people having moderate and high pre-COVID tension mention that it has affected their post COVID tension, when compared to those who reported less and very less pre-COVID tension. These results indicate the influence of existing tension of people in creating more tension during the pandemic period. The pandemic induced uncertainty, individual health threat and quarantine measures may

exacerbate pre-existing conditions such as depression, anxiety etc.

In order to identify the psychological traits, which influence the psychological state score, the Random Forest technique based on Inc Node purity values was attempted. The results are presented in Table 4. Inc Node purity values above 300 only were considered for analysis. Accordingly, as per Table 4, the traits, namely, Enthusiasm, Satisfaction, Loving nature and Peacefulness are the main ones, which influence the personality state score. These traits can be considered to contribute to a positive mental state for people under the conditions such as fear of contracting the disease, isolation, loss of job/income etc. existing during the COVID-19 pandemic. All the other traits showed Inc Node purity values in the range of 12.6 to 271.8 only.

Table 5 shows the distribution of psychological state score into low, medium and high groups based on quartile method. More or less equal proportion of respondents are there under the high, medium and low personality state groups (Table 5), implying that the more respondents were not able to maintain a better level of psychological status due to the pandemic. Except sex, the other characteristics of the respondents, namely, age, qualifications, level of pre COVID tension and pre COVID tension affecting post COVID tension are influencing the psychological state score significantly through Chi square test (Table 6).

Table 7: shows the psychological state score under various categories of the characteristics of respondents, which was worked out based on the quartile method.

52 % of the middle-aged respondents and 14 % in the young age group fall in the high and medium psychological state categories together, while nobody in the old age group falls under these two categories. While 46 % of males fall in the high plus medium psychological state groups, the figure is only 20 % for females (Table 7), implying that males were able to maintain a better psychological state than females during the pandemic period. None of the respondents with Degree and PG qualifications have low psychological state score, when compared to 22 % and 12 % respectively under the up to 10th and plus two educational categories (Table 7). This indicates that people with higher education were able to maintain a comparatively better psychological state during the pandemic period. While 20 % and 18 % respondents having high and very high pre COVID tension respectively fall in the low psychological state category, none of the respondents reporting low and

middle levels of pre COVID tension are there in the low category (Table 7), indicating the influence of higher tension before the COVID pandemic period in reducing the psychological state of the respondents during the pandemic period. This trend is again confirmed from the fact that, while only 8 % of the respondents who mention that pre COVID tension has not affected their post COVID tension get a low post COVID psychological state score, 26 % respondents who report that pre COVID tension has affected their post COVID tension get a low psychological state score after the pandemic started (Table 7).

Odds ratio comparing high and low categories of the psychological state score was attempted. The ratios shown in Table 8 indicate the chance of exposure of

an individual to a high score, implying a better psychological state of the respondents during the pandemic period. From Table 8, it can be inferred that respondents with PG qualification have 4.62 times more chance of getting a higher psychological state score than those with lesser qualification, indicating a better psychological condition for more educated respondents during the pandemic period. Similarly, males have 1.16 times more chance of maintaining a better psychological state than females during the pandemic period (Table 8). This confirms the already observed result shown in Table 7 those male respondents maintain a better psychological state than females during the pandemic period.

Table 1: Experience of psychological traits during the COVID-19 pandemic

Psychological trait	Respondents (%)					Total (%)
	Level of experience of the trait					
	Did not feel	Felt slightly	Felt moderately	Felt strongly	Felt very strongly	
Happiness	30	40	10	20	-	100
Caring for others	-	-	90	10	-	100
Lively	50	-	40	10	-	100
Satisfied	50	10	40	-	-	100
Energetic	30	20	30	20	-	100
Loving nature	10	30	30	30	-	100
Enthusiastic	30	20	40	10	-	100
Peaceful	40	20	40	-	-	100
Sad	-	10	70	10	10	100
Tired	-	30	50	10	10	100
Drowsy	-	50	40	-	10	100
Angry	-	20	70	10	-	100
Uneasy	-	50	50	-	-	100
Fed up	-	30	40	20	10	100
No rest	-	40	40	20	-	100

Table 2: Respondents attributing the experience of psychological traits to COVID-19 pandemic

Psychological trait	Respondents (%) attributing less / more experience* of the traits to COVID-19 pandemic		Total
	Due to the pandemic	Not due to the pandemic	
<i>Positive traits</i>			
Happiness	80	20	100
Lively	80	20	100
Satisfied	66.7	33.3	100
Energetic	75	25	100
Loving nature	40	60	100
Enthusiastic	80	20	100
Peaceful	60	40	100
<i>Negative traits</i>			
Sad	50	50	100
Tired	100	-	100
Drowsy	70	30	100
Angry	-	100	100
Fed up	66.7	33.3	100
No rest	-	100	100

*Indicating the responses, namely, did not feel the positive traits at all / felt them slightly only; felt the negative traits strongly / very strongly

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Table 3: Effect of pre-COVID tension on post-COVID tension

Detail	Respondents (%)		Total (%)
	Yes	No	
Pre-COVID tension affected the tension experienced after COVID pandemic	60	40	100
	Respondents (%)		
Level of pre-COVID tension experienced	Affected post COVID tension	Not affected post COVID tension	
Very less	-	100	100
Less	33.3	66.7	100
Moderate	50	50	100
High	100	-	100

Table 4: Results of Random Forest Technique of traits influencing psychological state score

Sl.No	Psychological trait	Inc Node purity value
1	Enthusiasm	856.4
2	Satisfaction	463.1
3	Loving nature	436.5
4	Peacefulness	308.1

Table 5: Percentage distribution of psychological state score

Psychological state score	Respondents (%)
High	32
Medium	34
Low	34

Table 6: Chi-square test of psychological state score with characteristics of the respondents

Characteristic	Chi-square value	Asymp. Sig. (2-sided)
Age	31.889	2.02E-06
Sex	4.473	0.10683
Qualification	42.286	1.2E-06
Pre-COVID tension	44.596	4.39E-07
Pre-COVID tension affecting post-COVID tension	22.191	1.52E-05

Table 7: Psychological state score under various categories of the characteristics of respondents

Characteristic Category*	Respondents (%)			Total (%)
	Psychological state score group			
	High	Medium	Low	
Age				
Old	Nil	Nil	18	18
Middle	32	20	8	60
Young	Nil	14	8	22
Total				100

Sex				
Male	20	26	14	60
Female	12	8	20	40
Total				100
Education				
Up to 10 th	4	16	22	42
Plus, Two	8	Nil	12	20
Degree	20	6	Nil	26
PG	Nil	12	Nil	12
Total				100
Pre-COVID tension				
Nil	Nil	Nil	8	8
Slight	8	4	Nil	12
Moderate	4	18	Nil	22
High	8	12	20	40
Very high	Nil	Nil	18	18
Total				100
Pre-COVID tension affected post-COVID tension				
Yes	Nil	22	26	48
No	32	12	8	52
Total				100

*Based on the quartile method

Table 8: Odds ratios of personal characteristics with high personality state score

Character	Class	Odds ratio
Education	Higher Education (PG)	4.62
Gender	Male	1.16

Conclusion

The results of this study indicate that the pandemic has influenced the psychology of the respondents in a negative manner. Less experience of positive psychological traits and more experience of negative traits have been attributed to the COVID-19 pandemic by 60 % and more of the respondents. The influence of existing tension of people in creating more tension during the pandemic period is evident from the study. Random Forest technique results show that Enthusiasm, Satisfaction, Loving nature and Peacefulness are the main psychological traits, which influence the personality state score. These traits could contribute to a positive mental state for people under the conditions such as fear of contracting the disease, isolation, loss of job/income etc. existing during the COVID-19 pandemic. The characteristics of the respondents such as age, education, pre COVID tension and pre COVID tension affecting the tension during the pandemic period are found to influence the personality score statistically through Chi-square test. Odds ratio test shows that respondents with PG qualification have about 4.62 times more chance of getting a higher psychological state score than those with lesser qualification, indicating a better psychological condition for more educated respondents during the pandemic period. Similarly, males are found to have 1.16 times more chance of maintaining a better

psychological state than females during the pandemic period.

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