Peritraumatic distress in Southern Indian inhabitants during second wave COVID-19 pandemic: A community-level survey

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Introduction: As coronavirus disease 2019 (COVID-19) is a new disease which has ruining and dismantling the harmony of people internationally, its development and spread, creates turmoil, nervousness and dread among worldwide. Aim: To evaluate seriousness of peritraumatic problems among southern Indian inhabitants during the COVID-19 pandemic. Methodology: A referral sampling technique was continued until a sufficient sample size was reached, while this self-administered survey catches insights about depression, fears, psychological change, evasion cognitive change, and collectively quantifies the stress on a scale of 0–60. Expressive factual examinations were utilized to sum up clear cut information and inferential measurable investigations included Chi-square tests and Pearson’s correlations were done. Results: The study included only those participants who understood English and had access to the internet. Inconsequential outcomes were found among gender in which both male and female members frequently showed apprehension and nervousness about COVID-19. 44.8% tried not to watch the news on COVID-19 as they were excessively frightened and make frenzy to family members. 90.9% of participants with lower education levels were more stressed over the thought of getting COVID-19 when showing manifestations related with the novel corona virus, which was statistically significant. Conclusion: The current assessment shows that almost all the study participants have felt restless, uncomfortable and terrified of watching the news whilst stressed over appearances related with COVID-19 due to their greater access to information.

Keywords: Coronavirus, mental stress, pandemic, peritraumatic distress
more than 100 million affirmed cases throughout the planet.[9] A second wave beginning in March 2021 was much devastating than the first, with shortages of vaccines, hospital beds, oxygen cylinders, and other medicines in parts of the country. On April 30, 2021, it became the first country to report over 400,000 new cases in 24 hrs.[10]

Outbreaks such as the COVID-19 pandemic have a negative psychological impact which increases demand for mental health care needs. Factors like lockdown, social isolation, disruptions in life routines may cause peritraumatic distress.[7] During the outbreak of these infections, several psychiatric co-morbidities such as depression, panic attack, anxiety, psychomotor excitement, suicide, and stress symptoms were reported.[8]

The most noteworthy quantities of new deaths were accounted for from India (7875 new deaths; 0.6 new deaths per 100,000; a 69% increment), Indonesia (885 new deaths; 0.3 new deaths per 100,000; a 26% lessening), and Bangladesh (622 new deaths; 0.4 new deaths per 100,000; a 39% increment). Because of the increasing COVID cases in India, during the second wave pandemic, the fundamental motivation behind the current examination is to quantify mental experiencing like pressure, nervousness, and dread among the overall population.[9] A second wave of coronavirus swept across the country causing widespread destruction and death. While we’re still unclear, there are countless reports of a third wave of COVID arriving, which could be just as intense and put a strain on healthcare resources.[10] Despite the fact that anxiety and depression are the most common mental health problems encountered in primary care. The difficulty in recognizing and diagnosing mental health problems is a multifaceted problem influenced by the knowledge and attitudes of primary care physicians. Diagnosing and treating a mental health problem in primary care begins with the clinician’s response to a patient disclosure of emotional problems. So, it is important for primary care physicians to perceive, evaluate, and react to this distressing pandemic situation.[11]

Health crises such as the COVID-19 pandemic lead to psychological changes, not only in the medical workers but also in the citizens, and such psychological changes are initiated by fear, anxiety, depression, or insecurity.[12] Thus, this study aimed to assess the severity of peritraumatic distress among the general population during the COVID-19 pandemic.

**Methodology**

A cross-sectional investigation was conducted among general population of Andhra Pradesh, India in April 2021. With a certainty level of 95%, the assessed test size was 967 utilizing an edge mistake of 5%. A cold-calling sampling method was adopted in the study, and the questionnaire was sent to the contacts of the surveyors. All the participants were further requested to forward the tool in their respective contacts. Data were gathered utilizing Google forms in English language comprising demographic details like age, gender, education, work, and recently approved peri-traumatic distress scale which was adjusted by the current investigation region, and the link was shared among various platforms. Participants were requested to forward the questionnaire further to their contacts. Obscurity was guaranteed as there is no close-to-home contact, as only the responses were recorded in the study. This self-administered survey catches insights about depression, fears, psychological change, evasion cognitive change, and collectively quantifies the stress on a scale of 0–60. A modified peri-traumatic index scale score under 20 shows ‘low or no stress’, 21–40 demonstrates ‘gentle to moderate stress’ and more than 41 shows ‘extreme stress’. Study approval was taken from the institutional review board (36/IRB/SIBAR/2021). Before the start of the study, an informed consent was obtained from all the individuals willing to participate and ensured their participation was voluntary and anonymous. The investigators assured the participants that the data shall be kept confidential and shall only be used for research purposes. The information was pooled, arranged, and examined utilizing SPSS version 23 (IBM Corp., Armonk, NY, USA). Descriptive statistical analyses were used to summarize categorical data and Inferential statistical analyses included Chi-square tests and Pearson’s correlation were done. Straight relapse examination was finished utilizing stepwise factor determination to decide critical indicators of mental misery while P value ≤0.05 was considered as statistically significant.

**Results**

All the participants were above 18 years of age and of Indian origin, while study included only those participants who understood English and had access to the internet. The majority of respondents had a degree and above qualification, 901 (93.2%), and 912 (94.3%) were employed. There were 967 participants from both genders (636 males, 65.86%, and 331 females, 34.2%). In the present study, 1.3% are health care workers and the remaining 98.7% are general public [Table 1].

About 46.4% of study subjects felt more nervous and anxious while only 9.7% of the participants were normal, irrespective of situation. The majority of the participants felt sympathetic toward COVID patients and their families. Almost all the age groups are worried and felt nervous and scared of watching the news about COVID-19. At the same time majority of the participants worried about symptoms associated with COVID-19. 38.2% of the participants said that they don’t believe fake news without confirmation and would not like to share it with others. 44.8% sometimes avoid watching the news on COVID-19 as they were too scared as it could make to family members panic. Similarly, 65.7% of respondents felt helpless, and angry about people around them, while 34.9% were occasionally irritable and have frequent conflicts with family members than in normal times [Table 2].

Participants with lower education level are more scared to watch the news, which was statistically significant (P ≤ 0.01). 90.9% of...
participants with lower education levels were more worried about getting infected when showing symptoms associated with the novel coronavirus, which was statistically significant [Table 3].

The majority of the study subjects in all the participated age groups showed worried about symptoms associated with COVID‑19 which showed no significant results. But older age respondents showed more often back pain/chest distress, which was statistically significant ($P \leq 0.042$). [Table 4].

Insignificant results were found among gender in which the majority of both male and female participants often showed nervousness and anxiety about COVID-19. Statistical difference was found between male and female participants about back pain and chest distress, which was more often in male participants than female subjects [Table 5].

### Discussion

The majority of respondents in the present study had an education level of degree and above, while most of them were employed. The reason may be because of online study, most of the educated people might have shown interest to participate. This is similar to the study by Hyejung Yoon et al. and Harshal Sri Ram Sathe et al. Of the total sample, more than half the study subjects were males, which was in contrast to the study done by Vikram Ramasubramanian et al. and similar to the study by Harshal Sri Ram Sathe et al.

In the present study, most of the respondents were from 25–34 years of age group and study subjects of 35 years and above were scared to watch the news regarding novel coronavirus when compared to younger age groups this may be due to the fact that responsibilities in family and work tensions makes them scared to watch COVID-19-related news. But studies done by Naina Wakode et al., Sikandar A. Qalati et al., and Vikram Ramasubramanian et al. were in contrast to the present study, while similar results were reported by Mostafa A. Abolfotouh et al.

The major part of the participants felt sympathetic towards COVID-19 patients and their families, because of unexpected situations which affected families, financial strain and the lack of support will effect psychological conditions, so it is important for the primary care physicians to practice empathy during pandemic situations, which was on agreement with the study done by Dhar Bahadur Shrestha et al. and the results were contradictory to the study done by Vikram Ramasubramanian et al.

When asked about irritable and frequent conflicts with their family, 36.9% said that they never had any conflicts and 34.9% had occasionally. The coronavirus has led to sweeping changes and disrupting in nearly every aspect of daily life, loss of job, financial matters might be a source of stress contributing to

### Table 1: Distribution of study participants according to their demographic details and overall stress level

| Demographics | Frequency | Percentage |
|---------------|-----------|------------|
| Age           |           |            |
| <25 years     | 59        | 6.1        |
| 25-34 years   | 414       | 42.8       |
| 35-44 years   | 220       | 22.8       |
| 45-54 years   | 274       | 28.3       |
| Gender         |           |            |
| Male          | 636       | 65.8       |
| Female        | 331       | 34.2       |
| Occupation     |           |            |
| Student       | 16        | 1.7        |
| Unemployed    | 39        | 4.0        |
| Employed      | 912       | 94.3       |
| Education     |           |            |
| Intermediate  | 66        | 6.8        |
| Degree and PG | 901       | 93.2       |
| Are you a healthcare worker? | | |
| No            | 954       | 98.7       |
| Yes           | 13        | 1.3        |
| Overall peritraumatic stress | | |
| Mild stress (score 1-20) | 128 | 13.2 |
| Moderate stress (score 21-40) | 838 | 86.7 |
| Severe stress (score 41-60) | 1 | 0.1 |

### Table 2: Percentages of study participants according to their perceptions on COVID-19

| Question                                                                 | Never | Occasionally | Sometimes | Often | Most of the time |
|--------------------------------------------------------------------------|-------|--------------|-----------|-------|------------------|
| Compared to usual, I feel more nervous and anxious?                     | 9.7%  | 23.7%        | 15.8%     | 46.4% | 4.3%             |
| I feel sympathetic to COVID-19 patients and their families?             | 1.6%  | 7.1%         | 32.8%     | 20.7% | 37.8%            |
| I feel helpless and angry about people around me, governors and media?  | 3.8%  | 25.0%        | 65.7%     | 2.9%  | 2.6%             |
| I will believe the COVID-19 information from all sources without any evaluation? | 38.2% | 28.6%        | 14.4%     | 17.7% | 1.1%             |
| I am constantly sharing news about COVID-19?                            | 22.1% | 46.2%        | 19.0%     | 6.5%  | 6.1%             |
| I avoid watching COVID-19 news since I am too scared to do so?           | 13.7% | 12.0%        | 44.8%     | 15.8% | 13.8%            |
| I am more irritable and have frequent conflicts with my family?         | 36.9% | 34.9%        | 28.2%     | 0.0%  | 0.0%             |
| During this COVID-19 period, I often feel dizzy if I have back pain and chest distress? | 63.4% | 10.0%        | 11.9%     | 14.7% | 0.0%             |
| I have changes in my eating habits?                                     | 20.4% | 27.8%        | 48.5%     | 2.3%  | 1.0%             |
| During this COVID-19 period, I concentrated more on exercises/yoga than before? | 14.0% | 35.6%        | 32.3%     | 12.7% | 5.5%             |
| I feel uncomfortable when communicating with others during COVID-19?     | 8.1%  | 6.6%         | 15.8%     | 14.4% | 55.1%            |
| I am worried about getting infected when showing symptoms associated with novel coronavirus? | 0.5%  | 5.8%         | 6.2%      | 1.7%  | 85.8%            |
Table 3: Perceptions of the participants toward COVID-19 according to their educational level

| Questions                                                                 | Educational level | Never  | Occasionally | Sometimes | Often  | Most of the time | R     | P    |
|---------------------------------------------------------------------------|-------------------|--------|--------------|-----------|--------|------------------|-------|------|
| Compared to usual, I feel more nervous and anxious?                      | Degree            | 9.5%   | 23.6%        | 16.0%     | 46.5%  | 4.3%             | 0.010 | 0.956|
|                                                                           | Intermediate      | 12.1%  | 24.2%        | 13.6%     | 45.5%  | 4.5%             | 0.010 | 0.956|
| I avoid watching COVID-19 news since I am too scared to do so?           | Degree            | 13.4%  | 11.9%        | 45.6%     | 15.6%  | 13.4%            | 0.108 | 0.011*|
|                                                                           | Intermediate      | 16.7%  | 13.6%        | 33.3%     | 18.2%  | 18.2%            | 0.108 | 0.011*|
| I am more irritable and have frequent conflicts with my family?          | Degree            | 36.4%  | 30.3%        | 33.3%     | 0.0%   | 0.0%             | 0.019 | 0.583|
|                                                                           | Intermediate      | 37.0%  | 35.2%        | 27.9%     | 0.0%   | 0.0%             | 0.019 | 0.583|
| During this COVID-19 period, I often feel dizzy or have back pain and chest distress? | Degree            | 68.2%  | 13.6%        | 7.6%      | 10.6%  | 0.0%             | 0.041 | 0.378|
|                                                                           | Intermediate      | 0.0%   | 0.0%         | 4.5%      | 4.5%   | 90.9%            | 0.010 | 0.043*|

Chi-square test, R=Pearson's correlation, *statistically significant

Table 4: Age-wise comparisons of the participants toward COVID-19 distress

| Questions                                                                 | Age       | Never  | Occasionally | Sometimes | Often  | Most of the time | R     | P    |
|---------------------------------------------------------------------------|-----------|--------|--------------|-----------|--------|------------------|-------|------|
| Compared to usual, I feel more nervous and anxious?                      | <25 years | 5.1%   | 35.6%        | 16.9%     | 42.4%  | 0.0%             | 0.041 | 0.057|
|                                                                           | 25‑34 years| 8.7%   | 24.4%        | 12.3%     | 49.0%  | 5.6%             | 0.102 | 0.003*|
|                                                                           | 35‑44 years| 11.8%  | 22.7%        | 17.3%     | 43.2%  | 5.0%             | 0.102 | 0.003*|
|                                                                           | 45‑54 years| 11.8%  | 20.8%        | 19.7%     | 46.0%  | 2.9%             | 0.102 | 0.003*|
| I avoid watching COVID-19 news since I am too scared to do so?           | <25 years | 27.1%  | 8.5%         | 42.4%     | 5.1%   | 16.9%            | 0.041 | 0.057|
|                                                                           | 25‑34 years| 16.9%  | 11.1%        | 43.0%     | 17.6%  | 11.4%            | 0.102 | 0.003*|
|                                                                           | 35‑44 years| 10.5%  | 13.2%        | 47.7%     | 13.6%  | 15.0%            | 0.102 | 0.003*|
|                                                                           | 45‑54 years| 8.4%   | 13.1%        | 45.6%     | 17.2%  | 15.7%            | 0.102 | 0.003*|
| I am more irritable and have frequent conflicts with my family?          | <25 years | 22.0%  | 42.4%        | 35.6%     | 0.0%   | 0.0%             | 0.059 | 0.098|
|                                                                           | 25‑34 years| 37.0%  | 33.1%        | 30.0%     | 0.0%   | 0.0%             | 0.059 | 0.098|
|                                                                           | 35‑44 years| 40.9%  | 31.4%        | 27.7%     | 0.0%   | 0.0%             | 0.059 | 0.098|
|                                                                           | 45‑54 years| 36.9%  | 38.7%        | 24.5%     | 0.0%   | 0.0%             | 0.059 | 0.098|
| During this COVID-19 period, I often feel dizzy or have back pain and chest distress? | <25 years | 71.2%  | 15.3%        | 0.0%      | 13.6%  | 0.0%             | 0.058 | 0.042*|
|                                                                           | 25‑34 years| 64.5%  | 9.2%         | 11.1%     | 15.2%  | 0.0%             | 0.058 | 0.042*|
|                                                                           | 35‑44 years| 65.5%  | 8.6%         | 15.0%     | 10.9%  | 0.0%             | 0.058 | 0.042*|
|                                                                           | 45‑54 years| 58.4%  | 11.3%        | 13.1%     | 17.2%  | 0.0%             | 0.058 | 0.042*|
| I am worried about getting infected when showing symptoms associated with novel coronavirus? | <25 years | 1.7%   | 6.8%         | 1.7%      | 89.8%  | 0.0%             | 0.045 | 0.926|
|                                                                           | 25‑34 years| 0.2%   | 5.6%         | 5.6%      | 1.7%   | 87.0%            | 0.045 | 0.926|
|                                                                           | 35‑44 years| 0.9%   | 5.5%         | 6.4%      | 1.4%   | 85.9%            | 0.045 | 0.926|
|                                                                           | 45‑54 years| 0.7%   | 7.3%         | 6.9%      | 1.8%   | 83.2%            | 0.045 | 0.926|

Chi-square test, R=Pearson's correlation, *statistically significant

Table 5: COVID distress of the participants according to their gender

| Questions                                                                 | Gender | Never  | Occasionally | Sometimes | Often  | Most of the time | R     | P    |
|---------------------------------------------------------------------------|--------|--------|--------------|-----------|--------|------------------|-------|------|
| Compared to usual, I feel more nervous and anxious?                      | Male   | 8.6%   | 23.0%        | 16.8%     | 47.8%  | 3.8%             | 0.049 | 0.205|
|                                                                           | Female | 11.8%  | 25.1%        | 13.9%     | 43.8%  | 5.4%             | 0.049 | 0.205|
| I avoid watching COVID-19 news since I am too scared to do so?           | Male   | 13.4%  | 11.9%        | 42.9%     | 15.9%  | 15.9%            | 0.058 | 0.105|
|                                                                           | Female | 14.2%  | 12.1%        | 48.3%     | 15.7%  | 9.7%             | 0.058 | 0.105|
| I am more irritable and have frequent conflicts with my family?          | Male   | 38.5%  | 34.4%        | 27.0%     | 0.0%   | 0.0%             | 0.048 | 0.314|
|                                                                           | Female | 33.8%  | 35.6%        | 30.5%     | 0.0%   | 0.0%             | 0.048 | 0.314|
| During this COVID-19 period, I often feel dizzy or have back pain and chest distress? | Male   | 58.6%  | 11.3%        | 13.4%     | 16.7%  | 0.0%             | 0.124 | 0.001*|
|                                                                           | Female | 72.5%  | 7.6%         | 9.1%      | 10.9%  | 0.0%             | 0.124 | 0.001*|
| I am worried about getting infected when showing symptoms associated with novel coronavirus? | Male   | 0.3%   | 5.2%         | 6.9%      | 1.9%   | 85.7%            | 0.014 | 0.311|
|                                                                           | Female | 0.9%   | 6.9%         | 4.8%      | 1.2%   | 86.1%            | 0.014 | 0.311|

Chi-square test, R=Pearson's correlation, *statistically significant

Mental health problems. This was in accordance with the study done by Yan Guo et al.[18] and different from the study done by Vikram Ramasubramanian et al.[13]

Only meager of the study populations are health care workers while majority was general public. Though nearly half of them often felt nervous and anxious toward COVID-19, and majority of the participants are worried most of the time about getting infected when showing symptoms associated with the novel coronavirus. The difference was seen among educational qualifications, where participants with lower education levels showed more worried about getting infected when showing...
symptoms associated with novel coronavirus than higher education levels, this may be the reason that higher level of education might practice better coping strategies, which was relevant to a study done by Mogesie Necho et al. Naina Wakode et al. and which was in contrast to the study by Dhar Bahadur Shrestha et al. and Jianyin Qiu et al.

In the present study, 35.6% occasionally concentrated on exercises/yoga than before, maybe due to the reason that being physically and mentally fit can fight against stress which is necessary for everyone and majority of the respondents also changed their dietary habits, this might be due to awareness given by government and health care workers to improve immunity against COVID-19, which was in contrast to a study done by Dhar Bahadur Shrestha et al.

More than half of the respondents reported that they could not stop themselves from collecting information about coronavirus and share information with others, as access to information is greater through media, “We’re not just fighting an epidemic; we’re fighting an infodemic”, as said by WHO Director-General Tedros Adhanom Ghebreyesus. While the results were in contrast to a study done by Priscilla Samson et al.

The majority of the participants often showed nervousness and anxiety about COVID-19. But when asked about back pain and chest distress, which was seen more often in male participants than female subjects, which was different from the study done by Mark Shevlin et al. which could be because of the fact that males being a head of the family, they experience more pressure and stress with financial and family responsibilities which might increase in this perplexing COVID situations. Overall, 86.7% of participants had mild to moderate levels of stress which was, in contrast to a study done by Vikram Ramasubramanian et al. and a total of 65.7% of participants felt helpless, angry about people around, government, and media which was similar to the study by Priscilla Samson et al. Plethora of psychosocial issues, such as contamination fears, dissatisfaction, fatigue, lockdown sway, a flood of deception (infodemic), bits of hearsay, different paranoid ideas, lacking supplies, monetary misfortune, and social stigma about the disease have negatively affected psychological well-being all around the world during this pandemic.

Results of the present study depict that the stress was higher among the study participants as the second wave was characterized by high morbidity rates, oxygen supply shortage, availability of meager beds in hospitals, finally with the emergence of mental health problems.

Mental health is an essential component of overall health. In India, counseling about mental health issues is still viewed as a social stigma, which is why people avoid seeking treatment for mental illness. The mental health of people prone to depression and anxiety disorders should not be overlooked and efforts to varying degrees should be made to identify and maintain morale. In the era of COVID-19, panic disorder is very common among the public and there is a need to regulate schools, offices and homes to provide counseling services to all age groups so that all Indians can benefit healthy mental health and well-being.

Key points
- Participants with lower education level are more scared to watch the news, and were more worried about getting infected when showing symptoms associated with novel corona virus.
- Regardless of age, almost all the participants worried about symptoms associated with COVID-19, while back pain and chest distress was more common in males than females.

Conclusion
The COVID-19 emergency and the going with lockdown have without a doubt influenced each person in for sure and mental sufferings in human existence everywhere. The current investigation shows that practically almost all the study population are stressed and felt apprehensive and frightened of watching the news and stressed over manifestations related with COVID-19. It would likewise be valuable to analyze the content that individuals are getting from social networks and assist them with fostering the important abilities to have the option to channel such information. Likewise, the public authority should share however much data as could reasonably be expected with the general population, such as knowledge about COVID-19, every day flare-up status, and the public authority’s pandemic counteraction technique; this might assist with reducing psychological stress. Multisectoral comprehensive strategies and resilient system are required to tackle the direct and indirect effects of pandemic.

Limitations
- This study has some limitations. First, there are always limitations in the use of self-report questionnaires.
- Questionnaires are not diagnostic tools. The choice of the cut-off point is arbitrary and depends on the subjective of the participants.
- On the one hand, anonymity has allowed people to express themselves more freely; on the other, we have no data on the truthfulness of the information.
- The study cannot be generalized as it is an online survey, only educated and those who has access to the devices and internet has answered the questionnaire.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.
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