Title: Prevalence of Psychological Illness Among Quarantined People in Trivandrum District During the COVID-19 Pandemic: A Cross-sectional Study

Author names: 1. Name: Sneha S Prakash
Degree: Undergraduate Medical Student
Affiliation: Government Medical College, Thiruvananthapuram
2. Name: Sneha Sabu
Degree: Undergraduate Medical Student
Affiliation: Government Medical College, Thiruvananthapuram
3. Name: Jayaprakash Raghavan
Degree: DPM, M.D. Paediatrics, PhD. Child Psychiatry
Affiliation: Additional Professor and Child Psychiatrist,
Department of Paediatrics,
SAT Hospital,
Government Medical College, Thiruvananthapuram
4. Name: Chintha Sujatha
Degree: M.D. Community Medicine
Affiliation: Associate Professor,
Department of Community Medicine,
Government Medical College, Thiruvananthapuram
Degrees:
Affiliations:

About the author: Sneha S Prakash is currently a third-year medical student of Government Medical College, Thriuvananthapuram, India of a five-and-half years' program. She is also a recipient of National Talent Search Examination scholarship.

Acknowledgment: Dr Sharija S, Additional Professor, Department of Forensic Medicine, Government Medical College, Thriuvananthapuram
Financing: None
Conflict of interest statement by authors: No conflict of interest.
Compliance with ethical standards: Approved by Human Ethics Committee (HEC.No.03/51/2020/MCT)

Authors Contribution Statement:

Contributor Role	Role Definition	Authors 1	2	3	4	5	6
Conceptualization	Ideas; formulation or evolution of overarching research goals and aims.	X	X	X	X		
Data Curation	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later reuse.	X	X				
Formal Analysis	Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data.	X	X				
Funding Acquisition	Acquisition of the financial support for the project leading to this publication.						
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection.	X	X				

Methodology	Development or design of methodology; creation of models	X	X	X	X
Project Administration	Management and coordination responsibility for the research activity planning and execution.	X	X	X	X
Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.			X	X
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.			X	X
Supervision	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.			X	X
Validation	Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs.			X	X
Visualization	Preparation, creation and/or presentation of the published work, specifically visualization/data presentation.	X	X	X	X
Writing – Original Draft Preparation	Creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation).	X	X		
Writing – Review & Editing	Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages.			X	X

Manuscript word count: 2467

Abstract word count: 249

Number of Figures and Tables: Tables: 4

Personal, Professional, and Institutional Social Network accounts.

- **Facebook:** 1. Sneha S Prakash
  2. Sneha Sabu
  3. Jayaprakash Raghavan
  4. Chintha Sujatha
- **Twitter:** 1. SnehaSPrakash
  2. SnehaSabu5
  3. Nil
  4. Nil

Discussion Points:

1. Prevalence of psychological impact among quarantined people in Trivandrum district
2. Is depression prevalent among quarantined people?
3. Is depression more prevalent among younger, highly qualified people during quarantine?
4. Does staying with family increase worries while in quarantine?
5. Why is psychological intervention so necessary for people in quarantine?

ABSTRACT.

Background: Quarantine is considered the most effective way to curb the transmission of an infectious disease. The outbreak of Coronavirus Disease-19 in 2020 lead to many people being quarantined at various locations. Literature had shown that people who undergo quarantine face psychological problems like depression, anxiety and stress. The aim of this study was to estimate the prevalence of psychological issues among quarantined people during this pandemic.

Methods: This cross-sectional study was done in Trivandrum, Kerala, India. Adults aged 18 years and above who underwent quarantine in the area of the Pangappara Medical Health Centre were included. A semi-structured questionnaire and the Depression Anxiety Stress Scale-21 were administered to those who had given their informed consent. Quantitative variables were summarized with means and standard deviations and categorical variables with proportions. Significance of association was tested using chi square tests.

Results: 143 participants were included in this study. It was found that 23.8% had depression, 14% anxiety and 16.8% had significant stress. People from the age group of 26-40 years ($p = 0.017$), people from the higher educated group ($p = 0.010$) and non-resident Keralites (Keralites who were residing elsewhere and returned to Kerala during the pandemic) ($p = 0.041$) had the highest prevalence of depression.

Conclusion: People who undergo quarantine face a lot of psychological issues. The health care system should provide adequate psychosocial support to quarantined people suffering from psychological problems. Health care workers should be trained in this regard.

Key Words: Coronavirus Disease (COVID)-19; Quarantine; Depression; Anxiety; Stress (Source: MeSH-NLM).

INTRODUCTION.

The Coronavirus Disease (COVID)-19 pandemic that started in China was declared a public health emergency of international concern by the World Health Organization (WHO) on 30 January 2020.[1] On 11 March 2020, the World Health Organization declared it as a pandemic.[2] The first case of COVID-19 in India, was reported in the southern state of Kerala, on 30th January 2020.[3] The number of cases has been increasing ever since. Transmission of infectious diseases is often controlled by quarantine and isolation of the population at risk.[4]

Quarantine is the separation and restriction of people who have potentially been exposed to a contagious disease to ascertain if they become unwell so as to reduce the risk of them infecting others.[5] The term 'quarantine' was first used in Venice, Italy in 1127 with regard to the spread of leprosy and widely used during the period of Black Death in England.[6] In the case of the COVID-19 pandemic, WHO issued the guidelines for quarantine on 29 February, 2020.[7] Previous studies show that the implementation of a strict quarantine triggers a variety of psychological problems such as panic disorder, anxiety disorder and depression.[8] Other negative psychological issues that may be triggered by quarantines include post-traumatic stress symptoms, confusion and anger.[9] A study conducted among Chinese university students during the COVID-19 outbreak also reports that mandatory quarantine is significantly associated with emotional distress.[10] According to *Hawryluck, et.al*, symptoms of post-traumatic stress disorder and depression were observed in 28.9% and 31.2% of people quarantined during the Severe Acute Respiratory Syndrome (SARS) epidemic.[11]

There are several studies that have investigated the psychological impact of a pandemic and the lockdown that followed on the general population, as well as among healthcare workers. [12–21] The quarantined population differs from the general population in that they had to follow a strict protocol and stay in isolation due to the risk of a probable exposure to the disease. According to the guidelines issued by the Ministry of Health and Family Welfare, Government of Kerala, the people coming from outside countries, from states outside Kerala and those who had primary contact with people who tested positive for COVID-19 were the ones who were required to spend 14 days in home quarantine or an institutional quarantine facility.[22] There are only limited studies, especially in an Indian setting that investigate the extent and prevalence of psychological issues among those who were quarantined. These psychological issues include depression, anxiety and stress. Thus, this study aims to create a better understanding of these psychological issues and their relationship with factors such as age and educational status of the population, so as to help in formulating better policies to improve population mental health during this period.

The primary objective of this study is to estimate the prevalence of psychological issues such as depression, anxiety and stress among quarantined people in Trivandrum district during the COVID-19 pandemic. The secondary objective is to assess associations of psychological issues during a quarantine with socio demographic factors.

MATERIALS OR PATIENTS AND METHODS.

A cross-sectional study was done in the area of Pangappara Medical Health Centre Unit, in Trivandrum district, India. Trivandrum district is the capital city of Kerala, India with a mostly urban population.

The study population included all adults who had undergone quarantine in Trivandrum district during the COVID-19 pandemic, under the Pangappara Medical Health Centre Unit, could be contacted over phone and consented to participate in the study. The data was collected between July 2020 and September 2020 through telephonic interview at individual level. The data was collected from consenting individuals who had completed their quarantine, within a week of completing quarantine. The study was started only after obtaining permission and ethical approval from the health authorities and clearance from the Institutional Ethics Committee (HEC No. 03/51/2020/MCT). The list containing the details of the people under quarantine in the district, under the Pangappara Medical Health Centre Unit was obtained from the Administrative Medical Officer. Those quarantined individuals in the list, who were aged 18 years and above and had given their informed consent constituted the study participants. These study participants were contacted over the phone and invited to participate in the study. The participants gave their informed consent after learning about the procedure and objectives of the study. They were assured that they would not have any financial burden due to participating in the study, that they could withdraw from it at any time they wanted and that none of their personal details would be published or misused in any way.

Inclusion criteria included all persons aged 18 years and above who had undergone quarantine in Trivandrum district during the COVID-19 pandemic. Exclusion criteria included persons below the age of 18.

The study tools used to measure psychological illness, sociodemographic factors, and medical comorbidities included the Depression and Anxiety Stress Scale (DASS-21)[23] as well as a semi-structured questionnaire. The semi-structured questionnaire was used to collect relevant information regarding the socio-demographic factors as well as comorbidities. The socio-demographic factors investigated included variables like age, sex, educational status, occupational status and resident status. Non-resident Keralites include Non-Resident Indians (NRIs) as well as Keralites who had been residing in other states and returned to Kerala during the time of the pandemic, resident Keralites denote the native residents of Kerala and non-Keralites residing in Kerala refer to the natives of other states who were residing in Kerala during the pandemic period. The DASS-21 is a symptom-analysis scale and contains 21 questions, 7 questions each for Depression, Anxiety and Stress.[23] Each question is graded on a 4-point Likert scale and the scores range from 0 to 3. To calculate the total score for each condition, the scores of relevant questions were added together and the value obtained was multiplied by 2 as per the description in the tool manual. The scores obtained for each question in the DASS-21 questionnaire was added as per the guidelines given in the DASS score sheet to obtain the total scores for depression, anxiety and stress.[23] The cut-off scores given in the tool manual to categorize as Depression, Anxiety and Stress were at 9, 7 and 14 respectively. This tool has been validated in the regional setting and used for other Indian studies.[18]

Statistical Analysis and Sample Size Calculation:

According to *Hawryluck, et.al* the prevalence of post-traumatic stress disorder among quarantined people is 28.9%.[11] Using this value in the equation $3.84 * pq/d2$, the sample size is calculated as (as suggested by statistician):

158 p = 29, q = 71, Absolute precision d = 25% of p = 8. Sample size = $3.84 * pq/d2$ = 124.So, the target sample
159 size was set at 130 to be conservative.
160 The sociodemographic data and the DASS-21 scores collected were entered in a Microsoft Excel
161 spreadsheet and analyzed using Statistical Package for Social Sciences (SPSS) Version 25.0 for Windows.
162 Quantitative variables were summarized in means and standard deviations while categorical variables were
163 summarized as proportions. Significance of association was tested using Chi square tests ($p<0.05$).
164

RESULTS.

There were about 250 people in the list and those above 18 were 204 in number. When we tried contacting them over phone, 17 calls could not be connected because either the phones were switched off or they were out of network coverage area and 18 persons did not attend the call. Out of the remaining 169, only 143 individuals gave consent to participate in the study.

The study population was composed of 143 adults of which 96 (67.1%) were males and 47 (32.9%) were females, with ages ranging from 18 to 72, the mean age being 36.28. The socio-demographic characteristics of the study population are shown in Table 1. The main socio-demographic characteristics that were assessed included gender, age, educational status, occupation and place of residence. All the 143 adults included in the study were quarantined at their respective homes except one person who was under institutional quarantine.

Nearly about one-fourth of the study population, 34 out of 143 (23.8%) were found to have depressive symptoms, 20 out of 143 (14%) were found to have symptoms of anxiety, and 24 out of 143 (16.8%) were found to have symptoms of stress as per DASS-21. Associations of socio-demographic factors with depression are shown in Table 2. Among these factors, age group (in years) (p=0.017), education status (p=0.010) and place of residence (Resident Status) (p=0.041) showed statistically significant associations with depression. Associations of socio-demographic factors with anxiety are shown in Table 3. None of these variables significantly associated with anxiety. Associations of socio-demographic factors with stress are shown in Table 4. Among these factors, only education status (p=0.005) was significantly associated with stress.

DISCUSSION.

Among the study population, it was found that, 23.8% had depressive symptoms, 14% symptoms of anxiety and 16.8% symptoms of significant stress as per DASS-21. People from the age group of 26 to 40 years had the highest prevalence of depression followed by the 18 to 25 years age group. With regard to educational status, a higher proportion of people from the higher educated group was found to have depression when compared with the group that had a lower educational status. Stress followed the same pattern of association and was significantly associated with higher educational status. With regard to resident status, a higher prevalence of depression was found among Non-Resident Keralites.

In a study conducted in West Bengal, Chakraborthy et.al., found that the prevalence of depression among the general population due to lockdown was 24.7%.[12] Another study conducted in India found the prevalence of depression to be 25%, anxiety 28% and stress 11.6% among the general population during the pandemic period.[18] Our study differs from those studies since, they were conducted among the general public while our study was specifically conducted among a group of people who were under quarantine. The quarantined population differs from the general population in that the quarantined population were more likely to be exposed to infection (in order to be forced to quarantine) and thus had to observe strict social distancing norms and other practices like handwashing, usage of face masks, etc.

The findings obtained in our study correlate very well with many other studies which had revealed that pandemics in general put great pressure on the mental health of the general population. Many of these studies have used the same scale as we used (DASS-21).[18] As stated earlier, *Hawryluck et.al.,* found similar findings among quarantined persons during the SARS epidemic.[11] Another study conducted in Hong Kong among survivors of SARS found that 10% to 18% reported symptoms related to PTSD, anxiety and depression.[24] In a study among the Ebola survivors and healthcare workers during the 2014-15 Ebola outbreak in Sierra-Leone, it showed that the survivors had higher prevalences of depression, anxiety and several other psychological disorders.[25]

The results obtained in the present study can be attributed to the fact that the quick spread of the pandemic across the world resulted in a lot of people returning to their homes and native lands. Then, they found that they had to spend a certain number of days in quarantine and had to stay in their homes even after their quarantine periods were over. Moreover, a majority of the recreational activities such as travelling, meeting people and social gatherings in general were not possible in the pandemic scenario. The importance of social groups in providing support has been studied in detail by groups such as *Felton et.al*.[26] Moreover, while still in quarantine, people had to get used to their 'new normal' way of life that included more video calls, online meetings, online classes and work-from-home. Above all, the fear of an unknown disease that was quickly spreading everywhere, the day by day increase in the number of cases and misinformation regarding various aspects of the disease could have contributed to the general increase in the prevalence of depression, anxiety, and stress among the quarantined population. In fact, Chakraborthy et.al., in their study, had found that a significant proportion of the population were preoccupied with idea of getting infected.[12] Some of the participants in our study also reported that they felt uncomfortable due to the social stigma attached to being in quarantine and that they had to face negative comments from their neighbors in relation to this.

The higher prevalence of depression among the younger age groups in the present study, may be because of the restrictions that the quarantine had imposed upon them, right in their prime productive age.

This included restrictions on social mobility and their usual pursuits of recreation like meeting with their social circle and travelling. Another study also reported that younger age groups, especially the 18-24 years age group and the 25 - 35 years age group had more negative psychological impact when compared with the rest of the population, while the ones above 65 years of age had the least psychological impact.[14] Moreover, the majority of these participants were home-quarantined and had fears regarding whether they would infect any of their family members who might be more vulnerable. A majority of people, especially belonging to the 26 to 40 years age group had worries regarding the safety of their families, especially their elderly parents and young children. In fact, a study conducted in Wuhan by Zhu et. al., reported that living with family and worries about family members getting infected were risk factors for psychological problems among healthcare workers during the beginning of the COVID-19 pandemic.[20]

This study also led to a finding that a higher proportion of people among the group with higher education had depression and stress. This could be because they were more aware of the risks and chances of contracting the infection. They were possibly also more aware of the ongoing research on the long-term complications that might arise due to COVID-19; hence, they had more worry compared to their counterparts from the group that had less education. On the other hand, the participants were not being diagnosed by a healthcare provider, but were answering questions over the phone. So, perhaps, people with lower education status were more prone to report bias or there might have been a knowledge gap, which led to this finding.

The higher prevalence of depression among Non-Resident Keralites could be attributed to their worries regarding the loss of their jobs and livelihood, fear of infecting their family members, the difficulties of getting accustomed to work-from-home and other such concepts. Some of the study participants also reported that they were sad about the fact that they could not see their family and friends from their hometowns, although they understood the reason and necessity of the quarantine process. This could also have been a factor contributing to a higher prevalence of depression among this group.

A limitation of this study was that it was conducted by interviewing the study participants over the phone, which might not yield results with the same accuracy as self-reporting or a face-to-face interview. Other limitations such as selection bias, interviewer bias and report bias may also have affected the outcome of the study. In addition, as this was a cross-sectional study, we can only infer correlation and not causation from these results and a clear conclusion cannot be clearly stated because of the possibility of confounders altering the levels of psychological distress in the study population.

Conclusion:

The present study has concluded that a considerable group of people who had undergone quarantine faced psychological problems like depression, anxiety and stress. This issue needs to be addressed since the proper mental health-care of quarantined people is very important. This can be done by reaching out to them and providing adequate psychological support and counselling services. Moreover, primary healthcare workers should be trained to identify and address the mental health issues of quarantined people and offer necessary support and services. The services that have already been launched by the Government of Kerala to provide mental health support such as telecounselling services namely, “Ottakkalla Oppamund” (translated as “You’re not alone, we are with you”), need to be strengthened. As the authors, we feel that, family members and the general public should be made aware of the fact that those in quarantine are prone to experiencing psychological problems and could do with their support.

REFERENCES.

1. World Health Organization. WHO Director-General's statement on IHR Emergency Committee on Novel Coronavirus (2019-nCoV). Available from: https://www.who.int/director-general/speeches/detail/who-director-general-s-statement-on-ihr-emergency-committee-on-novel-coronavirus-(2019-ncov); cited 2021 January 21.
2. World Health Organization. WHO Director-General's opening remarks at the media briefing on COVID-19. 11 March 2020. Available from: https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020; cited 2021 January 21.
3. Department of Health and Family Welfare, Government of Kerala. COVID-19 Dashboard. Available from: https://covid19.kerala.gov.in/dboard.php; cited 2020 November 27.
4. Hossain MM, Sultana A, Purohit N. Mental health outcomes of quarantine and isolation for infection prevention: A systematic umbrella review of the global evidence. Epidemiol Health. 2020 March 17.
5. Centers for Disease Control and Prevention. Quarantine and Isolation. Available from: https://www.cdc.gov/quarantine/index.html;(2017) cited 2020 Jan 30.
6. Newman K. Shutt Up: Bubonic plague and quarantine in early modern England. J Sol Hist. 2012 February 06;45(3):809-834.
7. World Health Organization. Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19) : interim guidance, 29 February 2020. Available from: https://apps.who.int/iris/handle/10665/331299; cited 2021 January 21.
8. Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: Implications and policy recommendations. Gen Psychiatr. 2020 March 06;33(2):1-3.
9. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et. al. The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. The Lancet. 2020 March 14-20;395(10227):912-920.
10. Xin M, Luo S, She R, Yu Y, Li L, Wang S, et. al. Negative Cognitive and Psychological Correlates of Mandatory Quarantine During the Initial COVID-19 Outbreak in China. American Psychologist. 2020;75(5):607-617.
11. Hawryluck L, Gold WL, Robinson S, Pogorski S, Galea S, Styra R. SARS Control and Psychological Effects of Quarantine, Toronto, Canada. Emerging Infected Dis. 2004 July;10(7):1206-1212.
12. Chakraborthy K, Chatterjee M. Psychological impact of COVID-19 pandemic on general population in West Bengal: A cross-sectional study. Indian J Psychiatry 2020 May 15;62(3):266-72.
13. Grover S, Sahoo S, Mehra A, Avasthi A, Tripathi A, Subramanyan A et. al. Psychological impact of COVID-19 lockdown: An online survey from India. Indian J Psychiatry. 2020 July 27;62(4):354-362.
14. Rodriguez-Rey, Garrido-Hernansaiz H, Collado S. Psychological Impact and Associated Factors During the Initial Stage of the Coronavirus (COVID-19) Pandemic Among the General Population in Spain. Front. Psychol. 2020 June 23;11:1540.

15. Salari N, Hosseinian-Far A, Jalali R, Vaisi-Raygani A, Rasoulpoor S, Mohammadi M, et. al. Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: A systematic review and meta-analysis. Global Health. 2020 July 06;16(1):57.
16. Shah SMA, Mohammad D, Qureshi MFH, Abbas MZ, Aleem S. Prevalence, Psychological Responses and Associated Correlates of Depression, Anxiety and Stress in a Global Population, During the Coronavirus Disease (COVID-19) Pandemic. Community Ment Health J. 2021 Jan;57(1):101-110.
17. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et. al. Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. Int J Environ Res Public Health. 2020 March 06;17(5):1729.
18. Verma S, Mishra A. Depression, anxiety and stress and socio-demographic correlates among general Indian public during COVID-19. International Journal of Social Psychiatry. 2020 June 20;66(8):756-762.
19. Wilson W, Raj JP, Rao S, Ghiya M, Nedungalaparambil NM, Mundra H, et. al. Prevalence and Predictors of stress, anxiety and Depression among Healthcare Workers Managing COVID-19 Pandemic in India: A Nationwide Observational Study. Indian Journal of Psychological Medicine. 2020 July 06;42(4):353-358.
20. Zhu Z, Xu S, Wang H, Liu Z, Wu J, Li G, et. al. COVID-19 in Wuhan: Sociodemographic characteristics and hospital support measures associated with the immediate psychological impact on healthcare workers. EClinicalMedicine. 2020 July;24:100443.
21. Mohindra R, R R, Suri V, Bhalla A, Singh SM. Issues relevant to mental health promotion in frontline health care providers managing quarantined/isolated COVID-19 patients. Asian J Psychiatr. 2020 June;51:102084.
22. Health and Family Welfare Department, Government of Kerala. Revised Guidelines for testing, quarantine, hospital admission and discharge for COVID-19 based on current risk assessment. 12-03-2020 Available from: https://dhs.kerala.gov.in/wp-content/uploads/2020/03/reg_12032020.pdf cited 2021 January 21.
23. Lovibond PF, Lovibond SH. The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. Behav Res Ther. 1995 March;33(3):335–343.
24. Wu KK, Chan SK, Ma TM. Posttraumatic stress, anxiety and depression in survivors of severe acute respiratory distress syndrome (SARS). J Trauma Stress. 2005 February;18(1):39-42.
25. Ji D, Ji YJ, Duan X, et. al. Prevalence of psychological symptoms among Ebola survivors and healthcare workers during the 2014-2015 Ebola outbreak in Sierra Leone: A cross-sectional study. Oncotarget. 2017 February 21;8(8):12784-12791.
26. Felton BJ, Berry C. Groups as social network members: overlooked sources of social support. Am J Community Psychol. 1992 April;20(2):253-61.

345 **FIGURES AND TABLES.**

346

347 **Table 1**. Socio-demographic characteristics of the study population (N = 143)

348

Socio-demographic Variables	**Frequency n (%)** 349
Gender	
Male	96 (67.1)
Female	47 (32.9)
Age Groups (in years)	
18-25	24 (16.8)
26-40	75 (52.4)
41-65	42 (29.4)
>65	2 (1.4)
Education	
Predegree and below	31 (21.7)
Degree and above	112 (78.3)
Occupation	
Professionals and skilled workers	103 (72.0)
Unskilled workers	11 (7.7)
Students	12 (8.4)
None	17 (11.9)
Place of Residence (Resident Status)	
Non-Resident Keralites	83 (58.0)
Resident Keralites	49 (34.3)
Non-Keralites residing in Kerala	11 (7.7)

350 Legend: Non-resident Keralites include non-resident Indians (NRIs) as well as Keralites who had been
351 residing in other states and returned to Kerala during the time of the pandemic, resident Keralites denote the
352 native residents of Kerala and non-Keralites residing in Kerala refer to the natives of other states who were
353 residing in Kerala during the pandemic period.

354 The category Predegree and below in education includes people who have received formal education
355 only up to Class 12 or below. The category Degree and above includes people who have completed formal
356 school education and are either pursuing or have received a college degree.

Table 2. Associations of socio-demographic factors with depression (N = 143)

Socio-demographic Variables	Total in each category n	Depression	P value
		Present n (%)	
Gender			
Males	96	22 (22.9)	0.73
Females	47	12 (25.5)	
Age Groups (in years)			
18-25	24	7 (29.2)	0.017
26-40	75	24 (32.0)	
41-65	42	3 (7.1)	
>65	2	0 (0)	
Education			
Predegree and below	31	2 (6.5)	0.010
Degree and above	112	32 (28.6)	
Occupation			
Professionals and skilled workers	103	25 (24.3)	0.051
Unskilled workers	11	2 (18.2)	
Students	12	6 (50.0)	
None (Unemployed)	17	1 (5.9)	
Place of residence (Resident Status)			
Non-resident Keralites	83	26 (31.3)	0.041
Resident Keralites	49	6 (12.2)	
Non-Keralites residing in Kerala	11	2 (18.2)	

Legend: Non-resident Keralites include non-resident Indians (NRIs) as well as Keralites who had been residing in other states and returned to Kerala during the time of the pandemic, resident Keralites denote the native residents of Kerala and non-Keralites residing in Kerala refer to the natives of other states who were residing in Kerala during the pandemic period.

363 The category Predegree and below in education includes people who have received formal education
364 only up to Class 12 of school or below. The category Degree and above includes people who have completed
365 formal school education and are either pursuing or have received a college degree.
366

367 **Table 3**. Associations of socio-demographic factors with anxiety (N = 143

368

Socio-demographic Variables	Total in each category n	Anxiety	P value
		Present n (%)	
Gender			
Males	96	12 (12.5)	0.464
Females	47	8 (17.0)	
Age groups (in years)			
18-25	24	5 (20.8)	0.369
26-40	75	12 (16.0)	
41-65	42	3 (7.1)	
>65	2	0 (0)	
Education			
Predegree and below	31	2 (6.5)	0.172
Degree and above	112	18 (16.1)	
Occupation			
Professionals and skilled workers	103	14 (13.6)	0.180
Unskilled workers	11	1 (9.1)	
Students	12	4 (33.3)	
None (Unemployed)	17	1 (5.9)	
Place of Residence (Resident Status)			
Non-resident Keralites	83	14 (16.9)	0.503
Resident Keralites	49	5 (10.2)	
Non-Keralites residing in Kerala	11	1 (9.1)	

369 Legend: Non-resident Keralites include non-resident Indians (NRIs) as well as Keralites who had been
370 residing in other states and returned to Kerala during the time of the pandemic, resident Keralites denote the
371 native residents of Kerala and non-Keralites residing in Kerala refer to the natives of other states who were
372 residing in Kerala during the pandemic period.

373 The category Predegree and below in education includes people who have received formal education
374 only up to Class 12 of school or below. The category Degree and above includes people who have completed
375 formal school education and are either pursuing or have received a college degree.

Table 4. Associations of socio-demographic factors with stress (N = 143)

Socio-demographic Variables	Total in each category n	Stress	P value
		Present n (%)	
Gender			
Males	96	16 (16.7)	0.957
Females	47	8 (17.0)	
Age groups			
18-25	24	6 (25.0)	0.071
26-40	75	16 (21.3)	
41-65	42	2 (4.8)	
>65	2	0 (0)	
Education			
Predegree and below	31	0 (0.0)	0.005
Degree and above	112	24 (21.4)	
Occupation			
Professionals and skilled workers	103	17 (16.5)	0.205
Unskilled workers	11	0 (0.0)	
Students	12	4 (33.3)	
None (Unemployed)	17	3 (17.6)	
Place of Residence (Resident Status)			
Non-resident Keralites	83	19 (22.9)	0.051
Resident Keralites	49	5 (10.2)	
Non-Keralites residing in Kerala	11	0 (0.0)	

Legend: Non-resident Keralites include non-resident Indians (NRIs) as well as Keralites who had been residing in other states and returned to Kerala during the time of the pandemic, resident Keralites denote the native residents of Kerala and non-Keralites residing in Kerala refer to the natives of other states who were residing in Kerala during the pandemic period.

382 The category Predegree and below in education includes people who have received formal education
383 only up to Class 12 of school or below. The category Degree and above includes people who have completed
384 formal school education and are either pursuing or have received a college degree.