

Does Gender and Locality Impact Dysfunctional Anxiety Caused by the Coronavirus Pandemic? A Cross-Sectional Study of the Residents of Hyderabad, Pakistan

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ABSTRACT

Background/objectives: COVID-19 has affected 521 million people worldwide since March 2020. Disease outbreaks increase fear and anxiety. Stress, anxiety, and other mental illnesses. Various tools have been created to assess the psychological impact of COVID-19. Corona Anxiety Scale is among the reliable tools. This study examined the relationship between gender and location (urban/rural) and corona anxiety.

Methodology: This cross-sectional study was conducted at the Physiology department university of Sindh Jamshoro from December 2020 to January 2021. After informed consent, a total of 479 participants completed 5 item corona anxiety scale questionnaire.

Results: Among 479 individuals 10.2% (49) were suffering from corona anxiety. 12% (43) females were suffering from corona anxiety as compared to 5% (6) males. 10.2% of residents of both urban and rural areas were suffering from corona anxiety. Pearson's chi-square correlation revealed a positive association between the female gender and corona anxiety p-value (.016).

Conclusion: Corona Anxiety is more prevalent among the female gender. Residence in rural or urban areas has no association with corona anxiety.

KEY WORDS

anxiety, COVID-19, stress

INTRODUCTION

Since its emergence as a full-blown pandemic in March 2020, COVID-19, or more specifically, the Severe Acute Respiratory Syndrome Coronavirus 2 (SARs-COV-2 virus), has affected 521 million individuals throughout the world and claimed a massive 6.26 million lives to date. In Pakistan, a total of 1.53 million cases and 30,376 deaths have been cited thus far¹⁾.

In addition to the myriad of direct clinical manifestations of COVID-19, such as fever, cough, shortness of breath, loss of taste and smell, as well as a variety of neuropsychiatric, cardiovascular, and metabolic dysfunctions, there have been significant collateral effects of this enigmatic infectious disease on the entire global community²⁾. The most glaring among these effects is the negative psychological impact, not only of the pandemic itself but of the ensuing isolation of the "lockdown" as well³⁾.

Fear and anxiety have been observed to peak during infectious disease outbreaks⁴⁾. Individuals suffering from stress, anxiety, and other related psychological disorders brought on by such rapid onset public health crises tend to experience severe debilitation as far as carrying out normal life functions is concerned⁵⁾. In the case of the Coronavirus pandemic, the situation was further worsened by the government-imposed "lockdown" where basic activities of daily life were brought to a sudden halt and the social isolation, particularly the inability to physically interact with one's loved ones, further triggered the escalation of a stressful environment⁶⁾. Furthermore, news outlets and social media platforms

continuously bombarding the public with updates regarding the rapid spread and the adverse effects of COVID-19 as well as the ever-increasing loss of life claimed by the pandemic, contributed to creating panic among the masses⁷⁾.

Two years into the pandemic, multiple variants of the SARs-COV-2 virus are still emerging and causing new "waves" of regional and global outbreaks every few months⁸⁾. While rigorous efforts are being made to counter the physically debilitating and life-threatening effects of these variants and curb their spread, the need to address, research and rectify the negative influence of the pandemic on mental health has become even more pertinent⁹⁾. Additionally, the social stigma attached to mental disorders often leads to such cases being grossly under-reported¹⁰⁾. For this purpose, effective and reliable screening tools are needed to aid healthcare workers dealing with individuals suffering from functional impairment due to COVID-19-related stress and anxiety.

One such tool, developed, by Sherman A Lee, at the department of psychology, University of Newport, Virginia, USA, is the Corona Anxiety Scale (CAS). It is a short, self-report screener designed to help healthcare workers identify and care for individuals suffering from psychological stress and anxiety brought on by the COVID-19 pandemic¹¹⁾.

While several studies have undertaken the task of exploring the psychological impact of the COVID-19 pandemic on the community at large, research regarding anxiety associated with the pandemic warrants a deeper and wider exploration¹²⁾.

Although the use of various standardized scales to quantify psychological parameters, namely the Depression, Anxiety and Stress scale (DASS-21) and the Generalized Anxiety Scale (GAD)¹³⁾ to gauge the

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psychological impact of the pandemic has been observed, studies using a scale specifically designed for the quantification of stress and anxiety during the Coronavirus pandemic, like the Corona Anxiety Scale (CAS), have been scarce. Particularly, gender and locality (urban/rural) based differences in scores of this exclusively designed scale (CAS), particularly among the South Asian demographic, have not been researched at length.

For this purpose, the current study carried out the CAS online survey, specifically designed to gauge the level of anxiety that an individual may be experiencing as a result of the COVID-19 pandemic, that may be causing debilitation of functions of daily living. This study aimed to find a correlation between gender as well as area of living (urban versus rural) with dysfunctional anxiety, brought on by the COVID-19 pandemic and the lockdown measures, amongst the residents of the city of Hyderabad, Pakistan. The duration of the study spanned the second wave of the Corona pandemic which lasted from December 2020 to January 2021.

METHODOLOGY

This cross-sectional study was conducted in the Department of Physiology, University of Sindh, Hyderabad after getting approval from the institutional ethical board of the University of Sindh Jamshoro from December 2020 to January 2021 via ERC letter no Physiol/IRB/198.

Students who were coming to attend their on-campus classes were asked to participate in the study. After the informed consent study participants were requested to fill out the questionnaire. A total of 479 participants filled out a questionnaire that included socioeconomic data and a 5-item version of the corona anxiety scale. The coronavirus anxiety scale, often known as the CAS, is a self-report mental health screener that measures dysfunctional anxiety linked to the coronavirus outbreak. A rating on a scale from 0 (not at all) to 4 (almost every day) is assigned to each component of the CAS based on the individual's experiences over the most recent two weeks. The diagnostic capabilities of the CAS include a sensitivity of 90% and a specificity of 85%. A CAS score of more than 9 is considered dysfunctional anxiety related to coronavirus.

The expected and actual frequencies were compared using Pearson's chi-squared test to see if there was a statistically significant difference. SPSS version 23 was used for statistical analysis. Qualitative data is expressed in frequencies while the mean along with standard deviation is used to represent the quantitative findings. P values less than .05 were taken as statistically significant.

RESULTS

A total of 479 participants took part in this online survey. All participants completed all questions so there were no dropouts. The mean age of study participants was 23.46 + 6.71. Among the respondents, 74.7% (358) were females while 25.3% (121) were males. 30.7% (147) were living in a rural area while 69.3% (332) were residents of the urban area. The reliability of the 5 items of CAS used in the study was also calculated and the Cronbach's alpha value came out as .887. Among 479 individuals 10.2% (49) were suffering from corona anxiety. The female gender was more anxious as compared to males as a positive correlation was found between the female gender and corona anxiety however no correlation was found amid an area of living and corona anxiety as shown in Table 1.

DISCUSSION

During the two-year span of the Coronavirus pandemic, there have been several studies that have explored the psychological impact of the Covid-19 pandemic as well as that of the lockdown. One of the more notable among these is the study conducted by Passavanti, M. *et al.*, 2021 in which seven different self-report psychodiagnostics and/or screening scales were used including the scale used by Wang *et al.*, 2020 and Moccia *et al.*, 2020^{14,15} for measuring coping mechanisms, general awareness, psychological impact and the presence of psychological pathology, the Mindfulness Awareness Attention Scale (MAAS) for dispositional mindfulness and awareness, the Impact of Event Scale-Revised (IES-R) for probable Post-Traumatic Stress Disorders (PTSD),

Table 1: Correlation of Gender and area of living with Corona Anxiety.

Sr No.	Variable	Corona Anxiety Negative	Corona Anxiety Positive	Total	Pearsons Chi-square Correlation X ² P-value
1.	Gender				
	Male	115	6	121	4.898
	Female	315	43	358	.016*
	total	430	49	479	
2.	Area Of Living				
	Rural	132	15	147	.000
	Urban	298	34	332	.566
	Total	430	49	479	

the Depression Anxiety and Stress Scale (DASS-21), the Patient Health Questionnaire (PHQ-9) for the screening and diagnosis of depression, the Perceived Stress Scale (PSS10) for quantifying perceived stress and the Brief-COPE scale, a short version of the Coping Orientation to Problems Experienced inventory for the identification of coping strategies in the face of challenging circumstances. It disseminated the aforementioned screeners and survey questionnaires online using Google forms and Wen Juan Xing platforms among 1612 individuals residing in seven different countries including Australia, China, Ecuador, Iran, Italy, Norway, and the United States, and showed that the Coronavirus pandemic significantly affected psychological parameters in more than 50% of the tested sample. It also showed that factors like age, gender, level of education, income and daily outdoor activity, and exposure to different types of media, etc. all influenced the outcome of the surveys significantly¹⁶. A prominent similarity with the current study is the positive correlation between gender and psychological parameters influenced by the COVID-19 pandemic, while stark differences as far as sample size, region and the type of scale/s used to quantify mental health variables and even the choice of said variables can be seen amongst the two studies.

Another study, by Tee, M. L. *et al.*, 2020, did an online survey during the first wave of the Coronavirus pandemic using a sample of 1879 individuals residing in the Philippines. The scales used were the DASS-21 and the IES-R¹⁷. Once again, a significant correlation between the female gender and worsened anxiety and stress related to the pandemic was observed, which corroborates the findings of the current study. Differences mainly included the non-COVID-19-specific surveys used in the referenced study, the sample size, timeline, and regional disparity.

The aforementioned studies, although significant in their own right, differ from the current study in that a questionnaire/ scale designed exclusively for dysfunctional anxiety quantification and screening related to the COVID-19 pandemic was not used. Rather, generalized mental health scales were employed and the prime focus on male versus female psychological response to the pandemic or the rural versus urban population was not seen.

The few studies that did employ the Corona Anxiety Scale as the primary outcome measure did so using mostly the western population, (or did not include the Pak-Indo subcontinent), or measured dysfunctional anxiety among very specific demographics like nurses, doctors, first-line responders, and healthcare workers, etc. Eyni, S. *et al.*, 2020 conducted one such study in which the CAS as well as the Multidimensional Scale of Perceived Social Support and Sense of Coherence Inventory (SOC)13 scales were circulated online amongst a sample of 200 nurses in Rasht, Iran. Their findings suggested a strong negative correlation between perceived social support and a sense of coherence and corona anxiety¹⁸.

The seminal study using the CAS, by Lee, S. A. (2020) collected data from 775 individuals via an online survey during the initial stages of the pandemic and showed that the CAS questionnaire was robust in terms of validity and reliability. It also showed that factors like a diagnosis of coronavirus, alcohol/drug coping, negative religious coping, suicidal tendencies, and severe despondency were associated with high CAS scores. However, unlike the current study, gender did not seem to

have any correlation with elevated corona anxiety¹¹.

CONCLUSION

It has been shown that women are more likely to have Corona Anxiety. There is no correlation between where someone lives and their likelihood of experiencing corona anxiety.

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