Initial Psychological Response of Various Population Groups to COVID-19 Pandemic: A Cross Sectional Study

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ABSTRACT

Introduction: The corona virus pandemic has brought with it psychological problems like anxiety, stress, and depression. Research studies are urgently required to generate data that would help formulate strategies to manage the ensuing psychiatric and psychological maladies at societal level.

Aims & Objectives: The aim of our study is to better comprehend the initial psychological response of society to COVID-19 outbreak though a survey.

Place and duration of study: This cross-sectional study was conducted in King Edward Medical University, Lahore from April 2020 to October 2020.

Material & Methods: An online questionnaire comprising of 20 items including the Zung self-rating Anxiety Scale (SAS) was disseminated to three fifty (350) participants. Two hundred and seventy-one (n=271) responses were received. Collected data was entered and analyzed using the SPSS software version 20. Categorical variables were presented as frequencies and percentages. Relationships between categorical variables were tested by Chi square test. Regression analysis was conducted to investigate the effect of various variables on total stress score. A p-value of <0.05 was considered significant.

Results: It was revealed that 85.2% of the respondents reported minimal psychological impact, 14.8% had mild to moderate anxiety levels and 0.4% reported marked to severe anxiety. The impact was 2.5 times greater in subjects belonging to lower socioeconomic status (p=0.02).

Conclusion: Population belonging to lower socioeconomic class is more vulnerable to be impacted by psychological disturbances due to the pandemic owing to economic losses that are magnified in the population with fragile earning sources.

Key words: COVID-19, pandemic, anxiety, psychological stress, socioeconomic status, Zhang self-rating anxiety scale.

INTRODUCTION

Various pandemics with high morbidity and mortality have affected millions of people all around the world throughout human history.[1,2] The first viral pandemic was reported in 1918. It was named as Spanish flu, and the causative virus was the H1N1 influenza virus. It affected 500 million people around the world, and almost 40 million people died worldwide from 1918-1919.[3] Similarly the second H1N1 swine flu pandemic occurred during 2009-210 affecting 6.8 billion people worldwide and caused around 5 million deaths.[4]

The recent pandemic of COVID-19 is another flu pandemic that started in the city of Wuhan, China, in December 2019.[5] This disease outbreak was declared as a pandemic by WHO on 30 January 2020 and has affected almost every country of the world.[6] Some countries like China, Japan, Iraq, South Korea, and some European countries have managed to contain the virus to some extent after a lot of efforts.[6] It is similar to common flu but highly contagious.[7] In February 2020, covid-19 was first reported in Pakistan in two patients who had recently returned from Iran.[8] By April 2020, the Ministry of Health, government of Pakistan, confirmed a total of 3277 positive cases including 18 critical patients and 50 mortalities.[9] Till date (2-4-21) there have been 537,477 diagnosed cases with 11,450 reported deaths.[10]

The extensive coverage and repetition of reports in the media, might be contributing to the unspecific anxiety, depression and COVID-specific fear.[11] In addition the myths and conspiracy theories regarding COVID-19, spread by social media platforms, add to the confusion and psychological stress of the public.[12,13] Several studies have shown that excessive mainstream and social media consumption is associated with increased level of

COVID-19 associated fear and panic in the society.[11,14,15]

There is limited data on COVID-19 associated anxiety and stress response especially in the South East Asian region. The excessive psychological response to a pandemic disease can result in avoidance, functional impairment, and clinically significant distress among people.[16] It can lead to exaggerated safety behaviors like repeated hand washing and seeking reassurance from doctors repetitively, which further impairs functioning. Mass psychogenic illness can result from these highly publicized disease outbreaks in which healthy individuals become over sensitive to their benign bodily signs and sensations. They suspect themselves as infected, further engaging in extreme safety behaviors. Such individuals utilize more medical resources, including medications and other protective equipment, causing further load on the economy of the affected country.[17]

The stress and anxiety response to the corona pandemic may vary in different strata of the local population. The current study aimed to investigate the psychological responses (stress and anxiety) of the masses in Pakistan about the ongoing COVID-19 pandemic and find out how it is affecting the functionality of individuals belonging to different socio economic and demographic strata. Understanding such responses will be helpful in public health campaigns directed at stimulating people to take necessary precautions against corona virus infection without psychological stress.

MATERIAL AND METHODS

A cross sectional descriptive study was designed. Ethical permission was taken from the Institutional Review Board. Three hundred fifty questionnaire (350) requests were sent by email to medical doctors and students of Lahore. Two hundred and seventy-one (n=271) responses were received. The online questionnaire was composed of 3 parts. The questions were prepared after thorough review of literature and were sent to 3 independent psychiatrists for their expert opinion.

Statistical analysis:

The results were recorded as frequencies and percentages. Logistic regression analysis was applied with anxiety levels (mild, moderate or severe versus normal) as dependent variable and age, gender, monthly income and being a medical professional as dependent variables. Significance was set at 'p' less than 0.05.

RESULTS

The respondents included both men and women between eleven (11) and sixty (60) years of age. The majority was either medical students or related to the medical profession. The detailed demographic characteristics are shown in Table-1.

The psychological impact of COVID-19 pandemic, measured using the Zung self-rating Anxiety Scale (SAS) scale, revealed a sample mean score of 35.92 (SD = 8.36). Of all the respondents, 239 (85.2%) reported minimal psychological impact (score < 45) and they were labeled normal according to Zhang self-rating anxiety scale; 39 (14.4%) had mild to moderate anxiety levels (scores 45–59); and 1 respondent (0.4%) reported marked to severe anxiety (scores 60-74).

We further explored if any of the demographic characteristics put the subjects at a greater risk of anxiety than others. It was revealed that low income subjects were 2.5 times more likely to be stressed than subjects with higher income (p=0.021). None of the other demographic factors were significant risk factors for psychological stress in our cohort (Table-3).

Factor	Total Sample (n=271)	Percent Sample
Gender		
Male	106	39.1
Female	165	60.9
Age Range (in years)		
11-20	97	35.8
21-30	164	60.5
31-40	9	3.3
51-60	1	.4
Monthly Income (in Pakistani Rupees)		
I Don't Earn	238	87.8
Less than 20,000	11	4.1
20,000 – 40,000	7	2.6
Greater than 40,000	13	4.8
Socioeconomic Status (based on self-perception)		
Middle Class	166	61.3
Lower Middle Class	15	5.5
Upper Middle Class	88	32.5
Low class	2	.7
Profession		
Medical Professional	69	25.5
Government Employee	2	.7
Private Employee	9	3.3
Unemployed	7	2.6
Business	2	.7
Student	179	66.1
Others	3	1.1

Table-1: Demographic characteristics of the respondents

#	Questions	Responses
1	Do you think it is necessary to get mental health tips if one panics in the pandemic situation?	Yes: 232 (86%) No: 8 (3%) Maybe: 30 (11.1%)
2	From the last week, how often you avoid ordering food online?	Many times: 167(61.6%) Sometimes: 37 (13.7%) Never: 66 (24.4%)
3	From the last week, how often you feel the urge to go outside?	Frequently: 84 (31.0%) Less frequently:134(49.4%) Never: 52 (19.2%)
4	From the last week, how often you avoid large meetings and gatherings? *	Many times: 105(37.8%) Sometimes: 20 (7.4%) Never: 7 (2.6%) Always: 138 (50.9%)
5	From the last week, how often you avoid social contact?	Many times: 219(80.8%) Sometimes: 44 (16.2%) Never: 7 (2.6%)
6	Feel helpless due to COVID-19?	Yes: 113 (41.7%) No: 156 (57.9%)
7	Do you think travelling across/within the country is safe during these times? *	Yes: 14 (5.3%) No: 240 (88.6%) Maybe: 16 (5.9%)
8	Do you think social distancing is essential to stop the corona Virus spread?	Yes: 250 (92.3%) No: 5 (1.8%) Maybe: 15 (5.5%)
9	How much do you feel affected by the posts on social media about corona Virus Infection?	To a large extent: 59(21.8%) To some extent: 156(57.6%) Not affected at all:55(20.3%)

Table-2: A summary of responses of the respondents

Risk Factors	P value	Odds ratio
Low monthly income (less than 10,000 PKR)	0.02*	2.5*
Gender	0.75	0.92
Medical professionals	0.99	0.99
Age	0.11	1.52

Table-3: Risk Factors for COVID related Psychological Stress

DISCUSSION

The most interesting finding of our study is that 85% participants thought they could use expert recommendation, only 3% denied such help. This is similar to result reported from Wuhan where 50.4% sought online help, 36.3% referred to books (36.3%) and 17.5% took counseling.[18] Exploring the factors that enhance COVID impact included corona related social posts on social media to a large effect in 21.8%, to some extent in 57.8% and no effect in 20.3%. This needs to be explored what exactly makes some more vulnerable and some more resilient in future studies. In Spanish sample, being a young female with negative self-perceptions, more time exposed to COVID, more contact with relatives and higher expressed emotions were associated with increased burden.[19] In our study pandemic influenced 61.6% people to not order food frequently while 24.4% avoided food delivery altogether (Table-2). In US 25.6% and in UK 29.6% people thought that only Chinese restaurants should be avoided according to an online perceptions study.[20] Meanwhile in Italy, a lifestyle change in form of increased worry about weight gain in 48.6%, quitting smoking (3.3%) and turning to organic food (15%) was seen.[21] In the current research, 49.4% participants reported a reduced urge to go outdoors while 31.0% felt the urge frequently and 19.2% never felt the urge. The pandemic anxiety made 37.8% participants avoid large gatherings on many occasions, while 50.9% always avoided. It was only 2.6% were the ones which did not avoid at all. This small non avoiding population could be interesting to study further. One of the explanations came from a study of personality traits. It was found people who were low on agreeableness and high of dark triad traits like Machiavellianism, psychopathy factor 1 and narcissistic rivalry were least likely to follow guidelines.[22]

We further found that 41.7% participants felt helpless during COVID while 57.9% did not feel this way. What makes one feels helpless or not could be a future inquiry. It has been found for example, that adapting recommendations in form of avoidance behavior is associated with trust in government, perceived effect of effectiveness and ability to follow recommendations.[23]

It also came to light that 88.6% of the respondents thought it unsafe to travel both abroad and locally while 5.3% thought it was safe. Furthermore 92.3% of the subjects thought that social distancing was an essential to stop the corona virus spread, and only 1.8% thought it was not essential. When we compare these percentages with a related Iranian medical study, a similar pattern is revealed. In the study, 94.47% were practicing preventive behaviors and 86.96% held correct answers about COVID facts.[24]

In our study normal range of anxiety was experienced by 85.2% participants while mild to moderate level by 14.4% and marked to severe in 0.4% of the sample. This means broad based public interventions could be more helpful.

In the future more customized perceptions and behaviors amongst different specialties can be checked. We can also include the tangible change in the actual behavior in response to a particular perception. We can further include perceptions in participants with a history or active psychiatric illness as well. In this study we only documented presence of a study.

CONCLUSION

The current study shows that most subjects rated their psychological impact as mild-to-moderate. The psychological stress was 2.5 more prevalent in subjects from lower socioeconomic status. Our study adds to the ever emerging data on psychological impact of the corona pandemic and can be useful for public health officials to formulate the various interventions for improvement of mental health during COVID-19 outbreak.

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