

## ORIGINAL ARTICLE

# Prevalence of Psychological Distress during COVID-19, Social Distancing and Risk Factor of PTSD among General Population of Pakistan: A Web Based Survey

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## ABSTRACT

**Aim:** To examine the prevalence of psychological distress during COVID-19, social distancing and risk factor for PTSD among general population of Pakistan.

**Methodology:** The sample was drawn from Pakistani population having access to internet, age 18 years and above, through convenient sampling. Online survey method was used for the information assortment and the scales were Depression Anxiety Stress Scale (DASS 21) and Impact of Event Scale (IES). Descriptive Statistics, Frequency, Percentages, Correlation and t-test analysis were used for data analysis.

**Results:** Results showed that women scored high on depression, anxiety, and stress scale as compared to males. Results also highlighted elevated level of anxiety in grownups and working individuals while elderly population resulted in more significant levels of stress than other subsequent groups. Another finding of the study was high level of depression among university students and individuals with already compromised quality of psychological health are prone to various psychological disturbances particularly conditions like PTSD due to other mental conditions.

**Keywords:** Covid-19, psychological distress, PTSD, depression, anxiety, stress

## INTRODUCTION

There have been times when global serious situations in different regions of the world including disease breakouts, changed the perceptual pattern and living styles of people significantly<sup>1</sup>. Like citywide isolation centers and quarantines were executed in some regions of China and Canada during the outbreak of severe acute respiratory syndrome (SARS) in 2003<sup>2</sup> and had offered a challenging situation to the Medical fields of the world<sup>3</sup> while whole communities were quarantined in West African regions during Ebola outbreak in 2014. Recently another virus named COVID-19 that started from China<sup>4</sup>, created worldwide panic like situation. Having apparently no possible identified cause, prevention and cure till date, the disease shows some common symptoms including fever, sore throat, and difficulty breathing<sup>5</sup> and the situation led to take emergency measures of restricting people's movement and interaction as preventive measure. A huge upsurge of terror was experienced due to plenty of information available on terribly rising cases update worldwide and in country<sup>6</sup>. The information was mostly shared in terrifying manner<sup>7</sup> that created atmosphere of terror and fear. The measures of isolation were expected to reduce the risk of spreading while infected ones were quarantined i.e. kept isolated in supervisory settings till complete recovery. The term "quarantine" is defined as the separation of infected individuals from non-infected ones and usually executed in hospital settings while in some situations it may be done in home settings as well<sup>8</sup>.

With already sufficient literature available, particularly on mental health of frontline clinical staff, similar scenarios in the past have been highlighted with durable psychological and emotional impacts like stress, anxiety, and depression during and after the situation had passed<sup>9</sup>.

Generally, such situations like uncertainty and abrupt close down and social distancing bring their own adverse effects to influence one's Psychological states and with an aggravation in symptomatology of those who were already diagnosed with certain Psychiatric condition. Numerous studies have further examined the effects of mental health associated with other infectious diseases and its outbreaks, it includes severe acute respiratory syndrome (SARS) epidemic in 2003<sup>10</sup>. These infectious diseases have also been found to affect overall mental health and manifestation of symptoms of obsessive-compulsive disorder<sup>11</sup>. While several studies have attempted to examine the psychological impact on people who were quarantined<sup>12,13</sup> and significant findings reported like exhaustion, detachment anxiety irritability, concentration issues.

Although with the diagnostic criteria of Post-traumatic Stress Disorder (DSM-V), not being fulfilled, the quarantined population was presented with similar signs of the illness possibly due to endurance of persistent anxiety and depressive states<sup>14</sup>. However, other than the frontline medical staff and quarantined population,<sup>15</sup> the community are vulnerable to develop significant signs of psychological disturbance with long lasting effects, even after the epidemic is over. Amongst other, a study also examined the mental impact of Ebola outbreak and demonstrated that many individuals had intense fear of death with observable symptoms of trauma<sup>16</sup>. There has been strong evidence of similar effects of COVID 19 too<sup>17</sup>.

The studies have shown evidence that persistent exposure of depressive and anxious states may lead to diagnosis of PTSD, therefore the elevated levels so such conditions are to be included as risk factors of possible diagnosis of PTSD after the circumstances return to normal.

The objective of the study was to examine the prevalence of psychological distress during COVID-19, social distancing and risk factor for PTSD among general population of Pakistan.

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**MATERIAL AND METHOD**

**Participants:** The sample size comprised of Pakistani individuals ranging from age 18 years and above. Data collection was not gender specific, both male and female participated in the research. Sample size was calculated by using the WHO sample size calculator, considering 7% margin of error and a 95% confidence interval. Those included, were individuals residing in different areas of Pakistan with access to internet to participate in the mentioned web-based survey. Those excluded were individuals under 18 or those residing outside Pakistan. Individuals suffering from COVID and only those living in the urban areas and willing to participate were included, and those who refused to participate were excluded. Convenient sampling was used, and consent was obtained from each subject through Google form.

**Instrument:** All the subjects were evaluated using Depression Anxiety Stress Scale (DASS 21) and Impact of Event Scale (IES). The DASS is a set of three self-report scales designed to measure the negative emotional states of depression, anxiety, and stress. Each of the three DASS scales contains 7 items, divided into subscales. The Depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia and inertia. The Anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The Stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient. Subjects are asked to use 4-point severity/frequency scales to rate the extent to which they have experienced each state *over the past week*. Scores for Depression, Anxiety and Stress are calculated by summing the scores for the relevant items.

The Impact of Event Scale – Revised (IES-R) is an easily administered self-report questionnaire with 22 questions. The tool, not diagnostic for PTSD, is an appropriate instrument to measure the subjective response to a specific traumatic event in the older adult population, especially in the response sets of intrusion (intrusive thoughts, nightmares, intrusive feelings and imagery, dissociative-like re-experiencing), avoidance (numbing of responsiveness, avoidance of feelings, situations, and ideas), and hyperarousal (anger, irritability, hypervigilance,

difficulty concentrating, heightened startle), as well as a total subjective stress IES-R score.

**Procedure:** The cross-sectional study was conducted from March to April 2020 in the locality of Pakistan during pandemic of Covid-19. Using convenient sampling technique, survey was shared through various e-forums. Informed consent was obtained from all the subjects. All subjects were expected to fill in the online survey using standardized questionnaires. Demographic data, like age, gender, occupation, marital status, and educational level were recorded. The subjects were also inquired about awareness of Covid-19, source of information, duration of self-quarantine, activities in which they kept themselves engaged during quarantine period, fear of getting the viral outbreak etc.

**Data analysis:** Data was analyzed using SPSS 21. Descriptive data was expressed as mean±standard deviation (SD), median, range, and frequencies and percentages. T-test was performed to compare mean differences to check the prevalence. Pearson correlation coefficient was calculated to determine relationships between DASS & risk factor of PTSD.

**Credibility of research:** The validity and reliability studies of these questionnaires are already part of literature as it is important to guarantee the validity of subjective research.

**RESULTS**

Of the 500 participant 235(47%) were male and 265(53%) were females. There were 175(35%) adolescents, 165(33%) adults and 160 (32%) elderly population. 175(35%) were students, 170(34%) working and 155(31%) non-working. Moreover 265 (53%) are single and 235(47%) are married.

Table 1 shows significant gender differences, age wise differences, differences on the basis of work and marital status on depression, anxiety, and stress. Female are higher on depression, anxiety, and stress than male. Adolescents are higher on depression; adults are higher on anxiety and elders are higher on stress than other subsequent groups. Students are higher on depression, working individuals are higher on anxiety and stress than non-working individuals. Single individuals are higher on depression and anxiety and married are higher on stress.

Table 2 shows frequency and percentages of individuals in different categories of PTSD measured through Impact of Events Scale-Revised.

Table 1: Descriptive statistics and p-value through t-test analysis with demographic characteristics on depression, anxiety and stress

Variables	N (%)	Depression		Anxiety		Stress	
		M±SD	P	M±SD	p	M±SD	p
<b>Gender</b>							
Male	235(47)	4.4±4.33	<0.01	3.94±3.78	<0.01	4.92±4.64	<0.05
Female	265(53)	7.1±5.05		7.36±4.74		7.89±4.94	
<b>Age</b>							
Adolescent	175(35)	11.23±4.12	<0.05	9.32±3.61	<0.01	3.99±2.39	<0.05
Adult	165(33)	9.86±3.23		11.50±3.23		6.98±2.47	
Elder	160(32)	5.23±3.67		5.31±2.98		10.97±3.97	
<b>Work status</b>							
Student	175(35)	7.69±4.29	<0.01	5.26±4.87	<0.05	5.87±5.52	<0.05
Working	170(34)	5.49±5.17		7.02±3.76		7.94±4.41	
Non-working	155(31)	3.69±4.48		3.69±3.59		3.85±4.39	
<b>Marital status</b>							
Single	265(53)	7.84±4.53	<0.01	7.22±3.85	<0.05	4.36±4.82	<0.01
Married	235(47)	4.02±4.55		3.55±4.67		7.09±4.68	

Table 2: Frequency and Percentage of Different Types of PTSD Measured by Impact of Events Scale-Revised (N=500)

Variables	n (%)	Low Symptoms of PTSD	Partial PTSD	Diagnosed PTSD	High PTSD
		Scores<24 n (%)	Scores≥24 n (%)	Scores≥33 n (%)	Scores≥37 n (%)
<b>Gender</b>					
Male	235(47)	81(34.46)	80(34)	59(25.10)	15(6.38)
Female	265(53)	64(24.15)	70(26.41)	94(35.47)	37(13.96)
<b>Age</b>					
Adolescent	175(35)	19(10.86)	56(32)	67(38.29)	33(18.86)
Adult	165(33)	21(12.73)	52(31.52)	62(37.58)	30(18.18)
Elder	160(32)	29(18.13)	49(29.70)	55(33.33)	27(16.36)
<b>Work status</b>					
Student	175(35)	25(14.29)	55(21.43)	65(87.14)	30(17.14)
Working	170(34)	27(15.88)	50(29.41)	66(38.82)	27(15.88)
Non-working	155(31)	45(29.03)	73(47)	24(15.48)	13(8.39)
<b>Marital status</b>					
Single	265(53)	56(21.13)	91(34.34)	89(33.58)	29(10.94)
Married	235(47)	55(23.40)	87(37.02)	69(29.36)	24(10.21)

Table 3: Correlation matrix of the study variables (N=500)

	1	2	3	4	5	6	7
Depression	---	.68**	.66**	.65	.61	.65**	.86**
Anxiety	---	---	.86**	.84**	.86**	.86	.65
Stress	---	---	---	.64**	.74**	.53	.62
Low symptoms of PTSD	---	---	---	---	.79*	.48*	.54*
Partial PTSD	---	---	---	---	---	.60*	.59*
Diagnosed PTSD	---	---	---	---	---	---	.87**
High PTSD	---	---	---	---	---	---	---

\*= p <.05; \*\*= p <.01

Anxiety and stress are significantly positive related with low symptoms of PTSD (r= .84\*\*, .64\*\* respectively) and partial PTSD (r=.86\*\*, .74\*\* respectively). But depression is significantly positive correlated with diagnosed PTSD (r=.65\*\*) and high PTSD (r=.86\*\*).

**DISCUSSION**

The results obtained have revealed significant findings with respect to gender, age, work and marital status and their relationship with mental distress during COVID-19 social isolation period. While discussing the results it is pertinent to consider the exceptional scenario in Pakistan considering it to be a developing country where economic instability, unemployment, poverty, social and gender discrimination have already accounted for higher levels of anxiety and depression among population<sup>18, 19</sup> while trauma being secondary to prolonged exposure to terrorism has also been found to affect the mental health<sup>20</sup> in general.

According to results, level of depression, anxiety and stress has been found higher among women compared to men that are already consistent with several researches conducted in a similar context. Various reasons could be considered for such findings<sup>21, 22</sup> particularly in gender studies, social and familial demands of the role of a woman since the current uncertain and novel situation has appeared to demand full time physical and mental occupation. Furthermore, in case of persistent stress, women tend to avoid professional help due to social obstacles causing such resistance<sup>23</sup>.

Results also highlighted higher level of anxiety in adults and working individuals while elderly population resulted in higher levels of stress than other subsequent groups. The possible reason could be that adults, either males or females assume the core financial and managerial responsibilities, the current crisis has contributed with an additional stress during the ongoing situation. Due to uncertainty and in addition to other challenges, adaptation to change such as lifestyle, daily

routine and shifting to work from home activities has been another contributor to the psychological health. Such scenarios like lockdown, changed life patterns, social distancing is likely to create mental disturbance let alone socioeconomic distress<sup>24</sup>. Moreover, alarming information and updates regarding COVID-19 may have an adverse effect on the elderly population considering the chronic, age related comorbid health conditions.

Likewise, as indicated in the current study, higher levels of depression among students have been complimented by number of researches on university students. However, in the present scenario, home-based learning with a demanding requirement of skills and resources has given rise to stress along with the sudden distancing from the social and recreational activities, significant change in moods and behavior has been evident. The major factors of depression-included isolation change in routines, academic workload social pressures and time management<sup>25</sup>. According to another study, it was reported that 25% of the total students manifested elevated level of depression due to fear of failing and other concerns when shifted to online learning system<sup>26</sup>. Both conditions mentioned above have been observed to give rise to the elevated level during social distancing phase where online learning system has been implemented.

Current study indicated anxiety and stress to be significantly positively related with low symptoms of PTSD (r= .84\*\*, .64\*\* respectively) and partial PTSD (r=.86\*\*, .74\*\* respectively) with depression being significantly positive correlated with diagnosed PTSD (r=.65\*\*) and high PTSD (r=.86\*\*).

Another valuable finding of the study was the indication of a significant risk factor of development of PTSD in population of Pakistan with a reasonable percentage of males and females having scored high on mental distress scale categorized as mild, moderate and severe levels of PTSD symptoms. This ratio is quite alarming since, the higher the level of distress, the greater is the chance of experiencing PTSD symptoms regardless of the pandemic period being settled.

Primarily, individuals with already compromised quality of psychological health are prone to various psychological disturbances particularly conditions like PTSD due to other mental conditions but sometimes over all community factor do contribute for the same. Generally, at the community level, a cyclical form of apprehension and terror is observed amongst people with lack of trust on health-related facilities and fear of stigma. Such effects may impair overall interactional style and functioning in the long term<sup>27</sup>. Grief at communal level has been identified among global communities during previous outbreak of epidemics, mostly due to perception of possible failure to overcome the disease like Ebola<sup>28</sup>.

The notion of psychological trauma secondary to persistent psychiatric conditions had gained attention for last few years<sup>29</sup>. The community challenges, in response to such disasters cause abrupt shifting of roles of individuals making them adopt to emergency measures including peer support, community mobilization etc. which are likely to affect their mental health status overall<sup>30</sup>.

Previous similar situations like disease outbreaks have indicated significant development of PTSD symptoms after the crises was over as in case of SARS post which even after one year, the raised level of psychological distress was found<sup>31</sup>.

## CONCLUSION

Present research was conducted to study the prevalence of psychological distress and the possible outcomes of risk factor associated with COVID-19. The study was conducted through web-based survey during the social distancing period in Pakistan. Results indicated the higher levels of depression, anxiety & stress residing in different regions of Pakistan with some variation in psychological distress as per demographic variables.

Results indicated significant gender differences, age wise differences, differences on the basis of work and marital status on depression, anxiety, and stress. Female were higher on depression, anxiety, and stress than male. Adolescents were higher on depression; adults were higher on anxiety and elders were higher on stress than other subsequent groups. Risk factor of PTSD has also been identified in post pandemic situation.

**Limitations and suggestions:** For the research, time duration was limited as situation of covid-19 was temporary. Due to pandemic, reaching participants was difficult. Results of the research cannot be generalized. Web-based survey can affect validity of the results.

**Practical Implication:** This research will provide opportunities for more studies on how pandemic affects population on large and open doors toward different dimensions of such studies. It will give insight to people

regarding PTSD development after pandemic and it will also be beneficial for clinicians in making treatment plan for patients.

### Author contribution statement

Dr. Uzma Masroor: Conceived and designed the study; Introduction & Literature Review

Dr. Mussarat Jabeen Khan: Analyzed and Interpreted the data; Formatting & Proof reading; Requirements of Journal.

Ms. Semra Salik: Designed the study, Method Section, Collection of Data,

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