

Research Article

Prevalence of Post-traumatic stress symptoms in recovered patients of COVID-19 in Pakistan

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1. ABSTRACT

Background: COVID-19 is a pandemic rapidly spreading all around the world, and taking almost every country is falling prey to it. In this crucial time, a number of individuals in Pakistan are found suffering from COVID-19 with limited share of recovered patients. This investigation aims to scrutinize prevalence of Post-Traumatic Stress Symptoms (PTSS) in recovered patients of COVID-19. **Method:** The study implemented a quantitative approach through circulation of an online google survey with nonprobability purposive convenient sampling strategy. The chosen assessment measure of PTSD Checklist for DSM-5 (PCL-5) was administered on 200 participants on 07th day of recovery during period of observation. In addition, Regression statistical analysis was performed for data analysis and results indicated high prevalence of PTSD symptoms in females as compared to male. **Results:** Overall proneness towards PTSS is calculated as 45.6% among the respondents (R-square = 0.456). Thorough consideration on ethical parameters are enforced by several procedures comprising inform consent, right to withdraw, disposal of data, and confidentiality. **Conclusion:** The current study would act as a basis for future researches to reduce the prevalence of psychological issues that patients face during this period of pandemic and would help in catering suitable interventions for the patients.

Keywords: Post-Traumatic Stress Symptoms (PTSS); COVID-19; Pakistan; male; female

1. INTRODUCTION

At the end of December 2019, Wuhan, a big city in China reported a high number of pneumonia cases, which later spread to the whole province (Hubei) (Altena et al., 2020). After some time in first week of January 2020, an agent working in Center for Diseases Control indicated the symptoms of COVID-19. Following the reason, they started

investigating places of potential indications where this disease could have started. It was reported that this disease started from Hunan seafood market located in Wuhan, and there were lot of wild animals sold there not allowed by government of China (Chang et al., 2016). This disease spread at a rapid pace because it is an airborne disease, which can easily pass on to a person if someone infected touches them. Due to this reason, a number of patients were reported to be infected with this disease, in not only China but other countries, hence forcing the World Health Organisation (WHO) to impose international health emergency (Harch et al., 2017).

According to the statistics presented by Worldometer, the number of patients in Pakistan is 7,481 out of which 1,832 have been recovered, while 143 deaths have been reported. Many people here are working from their homes but a number of people have lost their jobs since companies do not have enough cash in reserves to support them. Due to this reason, it is an alarming situation here in Pakistan because if this number keeps on rising, it would be really difficult for people to find jobs resulting in a significant impact on psychological contagion building, such as anxiety, fear and a number of other psychological problems (Harch, 2017). However, this investigation aims to explore only one psychological problem named Post-Traumatic Stress Symptoms (PTSS).

Post-Traumatic Stress Symptoms (PTSS) is also a psychological problem, which can take place as a consequence of this situation currently faced by people of Pakistan. PTSS is one of those psychological problems, which leads to other problematic behaviors such as torture, rape, accidents or physical assaults, and is characterized by a typical pattern of trauma persistence, stimuli avoidance and emotional numbing (Sahar, Fadiullah, & Pratiwi, 2018). According to Dual Representation Theory of Post Traumatic Disorder by Brewin, many events taking place during traumatic events are retained in human memory titled situationally accessible memory. When people think about this information, attempting to integrate its details and features, the ensuring facts are retained in another memory called verbally accessible memory similar to semantic memory. After experiencing traumatic events, individuals dissociate themselves from event, for example, they might make attempts to forget about memories of this event, or primarily avoid negative mood states.

However, most of the memories are retained in situationally accessible memory, instead of verbally accessible memory (Walter, & McGregor, 2020). This memory shows spatial images and sensory information since this information is not integrated out of sequence. In an investigation, it was reported that more than 40% of the Severe Acute Respiratory Syndrome (SARS) survivors suffered from the problems of PTSS, at the time of outbreak (Waris et al., 2020). In addition, people who were isolated, or the one looking after the patients of SARS were at a higher risk of being exposed to PTSS, as compared to those exposed to the virus. Since the number of COVID-19 patients in Pakistan is on the rise, lack of definite information from media on this topic of PTSS can elevate the chances of this psychological problem building in people. Especially people who lost their jobs in big cities might be suffering from the problems of PTSS, hence making this situation even more

alarming. Most of the reports mainly focus on addressing whether this outbreak will affect more people or not.

1.1. THEORETICAL FRAMEWORK

To prevent COVID-19, the International Health Regulations (IHO) included it in legal framework. However, two different studies showed that longer durations of quarantine showed poor mental health by showing emergence of anger and avoidance behaviours (Gomez et al., 2020). This sets base for emotional processing theory, which argues that fear can be activated due to associative networks such as information about the feared stimulus, avoidance or escaping towards feared stimulus, and meaning of the fear (e.g. danger or threat). Fear increases problems for a person especially when it increases to a degree that it starts creating problems in functioning, or by not indicating potential dangers. During this time period, there might be pathological or maladaptive fear structures. Hence the theory argues that chronic avoidance (e.g. behaviour, dissociation, escape, avoidance) leaves these schemas in contact with people because people do not remain in similar situation for a long time so that new learning can take place. Due to this reason, confinement reduced social and physical contact with others, and loss of usual routine results in boredom, sense of isolation and frustration from rest of the society (Yoon et al., 2020). This frustration is due to not being able to participate in day-to-day activities, which include shopping for basic necessities and no participation in social networking activities on internet and telephone. The subliminal intensity level of mental health, the cognitive rise in PTSD is observed.

It is argued that PTSD comes with more persistence when people go in isolation and think about the threats which they might face. Change in trauma memory and negative appraisals comes with a series of problematic psychological problems. Due to this reason, stimuli in environment which are associated with COVID-19 event will activate prime contents of this pandemic through memory system. Due to this, dissociation with traumatic events has power to predict PTSD as when an individual is placed under a situation of isolation due to COVID-19, the Cognitive model of PTSD suggests that if a person starts thinking about this trauma after recovering, he ultimately starts associating himself with PTSD symptoms for a longer time period. In addition, dual representative theory argues that autobiographical memories create association with these traumatic events, such as verbal stimulus hence reminds of those traumatic events again and again. After recovering from that traumatic event, higher the number of memory recalls, higher the chances of PTSD problems (Wolf et al., 2016).

1.2. AIM AND OBJECTIVE

- To find out prevalence of Post-Traumatic Stress Symptoms (PTSS) in recovered patients of COVID-19 in Pakistan.

2. METHODOLOGY

2.1. RESEARCH DESIGN

The study is formulated on Quantitative research design with adoption of non-probability purposive convenient sampling technique.

2.2. PARTICIPANTS

A survey was conducted in this investigation to check the prevalence of PTSS in Nawabshah, Pakistan, where higher number of COVID-19 patients has been reported. Hence, a total of 200 surveys responses were collected. The inclusion criteria of participants were a) age should be greater than 18 years b) no psychological impairment c) have spent minimum 07 days under medical observation after recovery while the exclusion criteria were a) participant who reported a traumatic incidents or demise close fellow/family mother in last three months b) stated anxiousness over other severe life suffering than the disease. Furthermore, demographics of respondents were also obtained along with inform consent for administration official PCL-5 scales for PTSS.

2.3. MEASURE

2.3.1. PTSD Checklist for DSM-5 (PCL-5):

In order to assess PTSS, the scale presented by PTSD in 2018 was used (Ng et al. 2019). This scale comprises of 20 items, which are directly associated with DSM-5 PTSD. In this scale, each item presents severity of a symptom, examined with assistance of 5-point Likert scale from 0 (not at all) to 4 (extremely). In this way, cluster scores were calculated with respect to corresponding items. PTSS severity was identified in terms of total scores in PCL-5 clusters. This scale helped in identifying diagnosis in 2 different manners, a) the presence of at least one symptom (Criterion-B; question 1-5 on scale), one avoidance symptom (Criterion C; questions 6 and 7 on scale), two negative alterations in mood or cognition symptoms (D-Criterion questions 8-14) and two arousal symptoms (E-Criterion; questions 15-20), and b) overall sum of cutpoint on a scale of 33 points. Psychometric properties of the PCL-5 were examined in 2 studies involving trauma-exposed college students. In Study 1 (N = 278), PCL-5 scores exhibited strong internal consistency ($\alpha = .94$), test-retest reliability ($r = .82$), and convergent ($r_s = .74$ to $.85$) and discriminant ($r_s = .31$ to $.60$) validity.

2.4. PROCEDURE:

Nawabshah was among top 3 cities in Pakistan hit by COVID-19 due to many people landing from different countries in a short time period. Due to this reason, the hospitals got involved in treatment of COVID-19 patients in different hospitals were contacted and identified as resource provider for data collection. The online research survey comprised of

a Consent form, Demographic and PTSD Checklist for DSM-5 (PCL-5) were escalated for official perusal with defined narration of data collection on 07th day after recovery of patients during medical observation span to allow considering at their PTSS behaviors pertaining to their treatment period. Hence, following the prescribed parameters the data collection of 96 and 104 recovered patients were attained respectively.

2.5. ETHICAL CONSIDERATION

The study undertook necessary measures for ethical implementation during research. This study took approval from Zohaib Medicare, in Nawabshah. Due to high precautions, this research was not done directly by us, rather it was done by the doctors. Firstly, the right to withdraw which stated independence for participates to leave the study due to any discomfort. Secondly, the ethic of confidentiality that the data will thoroughly be used for the purpose to research and will be protected from any third-party intervention. Thirdly, informed consent obtained by prescribing related details including voluntary participation. Lastly, it was informed that disposal of data will be done after the completion of research.

2.6. DATA ANALYSIS METHOD

In first part of the results, the investigators reported prevalence with demographic information of the respondents. After that, ANOVA and regression analysis was carried out to investigate PCL-5 scores in demographic groups. Regression test applied was hierarchical in nature, so that independent variables associated with PTSS can be identified. At the end summary of results is presented along with a detailed discussion on the topic.

3. RESULTS

In this investigation, 200 responses were collected out of which 182 (91%) currently reside in Nawabshah, while 18 (9%) reside outside of Nawabshah. The sample size calculated for alpha of 0.05 with power of 80% was 199 cases (hence approximated to 200). Hence 14 participants out of 200 (7%) met this criterion of PTSS including in PTSS symptoms. They marked each question on scale as symptoms endorsed, by following the criteria.

This section is segmented into two different sections. The first part provides demographic information in the form of a table, followed by application of regression analysis.

3.1. COMPARISON OF DEMOGRAPHICS

The comparison of demographic groups' information and other related material can be found in the table below

Table 1. Demographic information

	Respondents		PCL-5 Scale Scores		F/t	p-value
	N	%	Mean	SD		
Age						
<30	23	11.5	13.6	11.9	-0.913	0.286
>30	177	88.5	14.88	10.93		
Gender						
Male	68	34%	11.91	10.65	-2.981	0.001
Female	132	66%	16.41	12.18		
Education						
Matric or lower	12	6	11.88	13.31	1.548	0.147
Diploma	164	82	15.28	11.76		
Intermediate	24	12	13.34	8.68		
Currently in Nawabshah						
No	18	9	12.79	10.88	-2.174	0.014
Yes	182	91	15.84	12.32		
Previously in Nawabshah						
No	67	33.5	12.11	10.49	-1.994	0.024
Yes	133	66.5	15.1	12.04		

The results above show that most of the people participating in this investigation belonged to age group of greater than 30 years. Hence it can be said that people suffering from COVID-19 in Nawabshah are mostly of ages greater than 30 years. A significantly high population participating in this investigation was of female respondents (66%) while the ratio of males was relatively smaller (34%). Due to this reason, it can be assumed that female population is high suffering with problem of COVID-19. The third parameter in table is education indicating that most of the participants had Diploma (82%), followed by Intermediate s (12%) and matric or lower (6%). This showcases that people participating in this investigation were mostly literate.

People investigated in this study and suffered from COVID-19 currently live in Nawabshah (91%), and only 9% of people live outside of Nawabshah. While last factor indicates that people investigated mostly reside in Nawabshah, and have their homes in Nawabshah (66.5%) while 33.5% came from other cities or countries. This study did not ask where they came from, due to time constraint issues.

If the results obtained in table 1 are analyzed, it can be seen that females respondents showed a highly significant PCL-5 score as compared to male respondents ($P < 0.01$). In addition, participants living in Nawabshah and outside have shown significantly statistically high scores as compared to others outside the city ($P < 0.05$).

3.2. RESULTS WITH RESPECT TO OCCURRENCE OF PTSS (PCL-5)

In order to investigate the prevalence of Post-Traumatic Stress Symptoms (PTSS), regression analysis was performed in SPSS 21 version. The results obtained after application of this statistical test; results have been obtained in the following fashion:

Table 2. Model Summary 1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.988 ^a	.976	.975	.07141

a. Predictors: (Constant), Intermediate sVsUniversityorCollege, FemaleVsMale, MatricorLowerVsUniversity, Age

The proneness which can be observed among investigated patients towards PTSS is 97.6%, especially among the above illustrated team members. The results obtained in the table above indicates that Intermediate s Vs University or College students, both male and females, were found associated with PCL-5 scores as presented in model. The value of R-square shows that 97.6% of the respondents indicated symptoms of PTSS.

Table 3. ANOVA table 1

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	39.881	4	9.970	1955.441	.000 ^b
1 Residual	.994	195	.005		
Total	40.875	199			

a. Dependent Variable: PCL5

b. Predictors: (Constant), Intermediate sVsUniversityorCollege, FemaleVsMale, MatricorLowerVsUniversity, Age

The value of Mean squares and F indicates that most of the patients who just recovered from Corona Virus suffered from PTSS problems. The value of F is very high as compared to 1, hence showing that Intermediate, university and college students, male and female reported problems of PTSS. All the variables (independent) were used as control variables, and all of them showed association with PCL-5 scores.

Table 1. Coefficients 1

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.013	.040		-.314	.754
Age	.250	.009	.415	29.324	.000
FemaleVsMale	.252	.010	.380	26.488	.000
1 MatricorLowerVsUniversity	-.251	-.009	-.383	-	.000
Intermediate sVsUniversityorCollege	-.250	-.018	-.161	-14.121	.000

a. Dependent Variable: PCL5

As it can be seen in table above, the education was segmented into 2 variables which were (Matric or Lower Vs University, Intermediate s Vs University or College) by keeping University in reference group.

The above table highlights hierarchical results obtained in this investigation. Age showed positive association with PCL-5 scores, with a positive β value of 0.415 and significance less than 0.05. Female Vs Male also highlight positive relationship with PCL-5 scores with β value of 0.380, and significantly less than 0.05.

On the other hand, Matric or Lower education Vs University were not found associated with PCL-5 scores, showing negative values (-0.383). in addition, Intermediate s Vs University or College was also negatively associated with PCL-5 scores as per the results. The results with respect to other variables can be found in next tables.

Table 2. Model Summary 2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.961 ^a	.456	.922	.09485

a. Predictors: (Constant), HighriskVsLowrisk, PreviouslyinNawabshahYesVsNo, CurrentlyinNawabshahYesVsNo,

In this scenario, it can be seen that people living in Nawabshah and outside Nawabshah both have shown their proneness towards PTSS by 45.6%, evident when we look at r-square value.

In this scenario, relationship between other variables, which include “high risk Vs low risk”, “Previously in Nawabshah”, “age”, Intermediate s vs University or college” “currently in Nawabshah”, “Matric or Lower Vs University” and “female Vs male” with PCL-5 were used. The value of R-square observed is 45.6%, which shows that these variables have power to predict symptoms of PTSS.

Table 3: ANOVA table 2

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	21.095	7	3.014	334.978	.000 ^b
1 Residual	1.727	192	.009		
Total	22.822	199			

a. Dependent Variable: PCL5

b. Predictors: (Constant), HighriskVsLowrisk, PreviouslyinNawabshahYesVsNo, CurrentlyinNawabshahYesVsNo,

The results obtained in table above depicts that most of the people investigated might be suffering from problem of PTSS because value of significance is perfectly statistically significant. Furthermore, value of F is not close to 1, hence it can be argued people no matter where they belong to (Nawabshah or outside) were suffering from PTSS problems.

Table 4: Coefficients 2

Model		Unstandardized Coefficients		Standardized t	Sig.
		B	Std. Error	Beta	
	(Constant)	.178	.054	3.293	.001
1	CurrentlyinNawabshah	.285	.014	.509	.000
	PreviouslyinNawabshah YesVsNo	.293	.016	.458	.000
	HighriskVsLowrisk	.293	.016	.458	.000

Table above illustrates results obtained in hierarchical regression form. The variables in left most column indicate used control variables. The relationship between the variables is observed to be statistically significant. For example, people living in Nawabshah or outside had a major impact on PCL-5 scores, indicating symptoms of PCL-5. Furthermore, value of significance is less than 0.05, showcasing statistically significant association. Next factor was “previously living in Nawabshah or not”, indicated that people living outside of Nawabshah also showed positive contributions to PCL-5 scores. The value of β is 0.458,

showing positive association while value of p is also less than 0.05. last variable “high risk vs low risk” indicates that people who just recovered from COVID-19 are at a higher risk of suffering from PCL-5 problems. The value of β is 0.456, while p is less than 0.05. Overall, it was reported that people investigated were suffering from the problems of PTSS, as they showed significantly statistical scores with PCL-5 scale.

3.3. RESULTS WITH RESPECT TO GENDER DIFFERENCES

In order to investigate symptoms of PTSS prevalence in genders, bar charts have been developed. The statistics can be observed in the bar charts below. 1 symptom is only presenting one item rated 2 or higher by participant in Criteria. The results illustration can be found in the bar charts below:

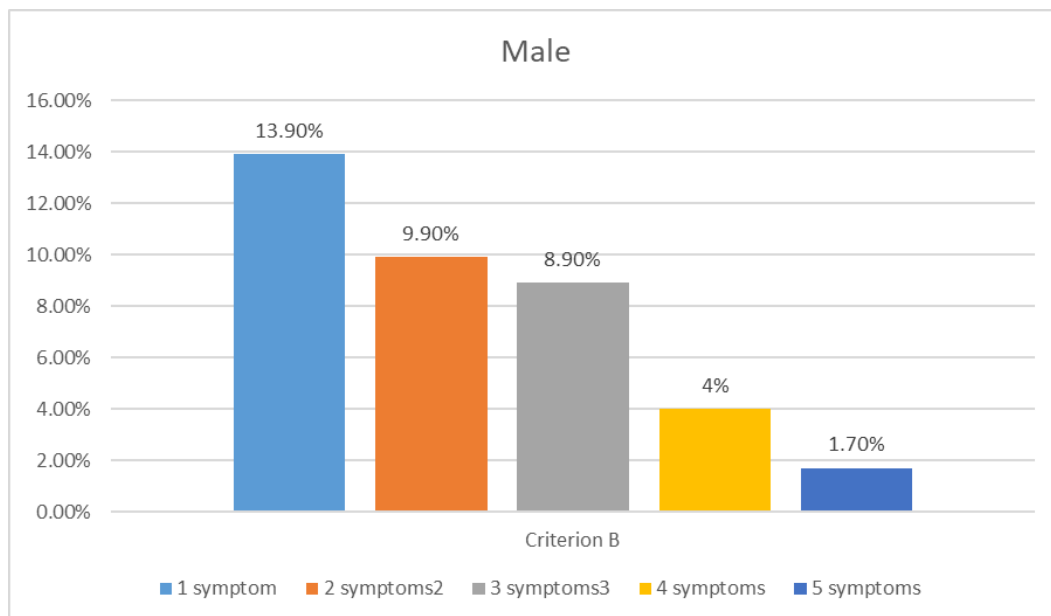


Fig 1. Criterion B comparison for Males

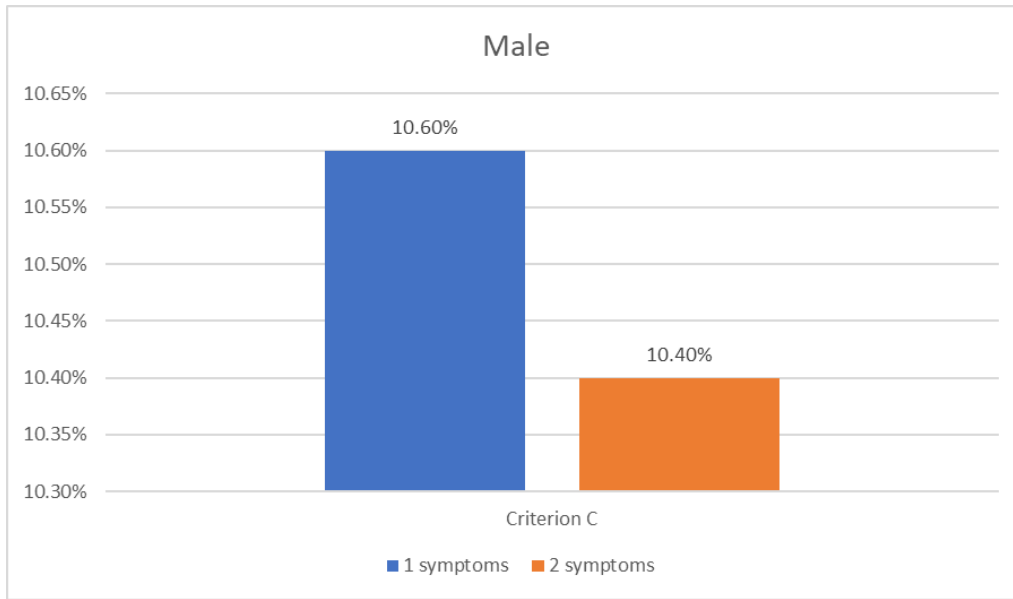


Fig 2. Criterion C comparison for Males

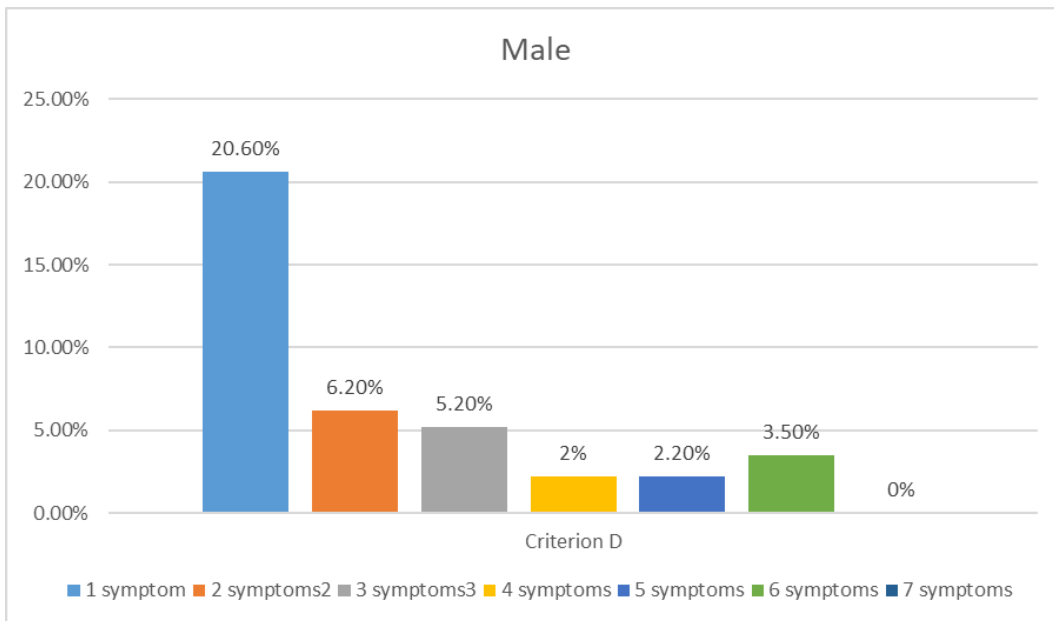


Fig 3. Criterion C comparison for Males

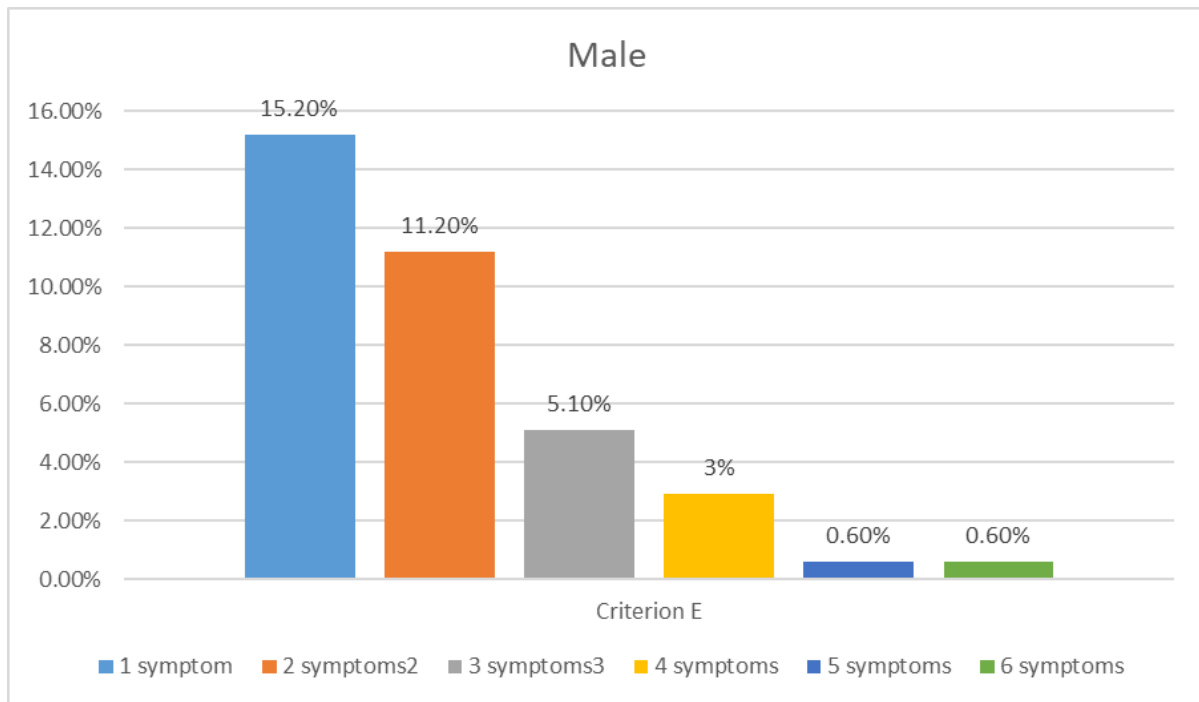


Fig 4. Criterion E comparison for Males

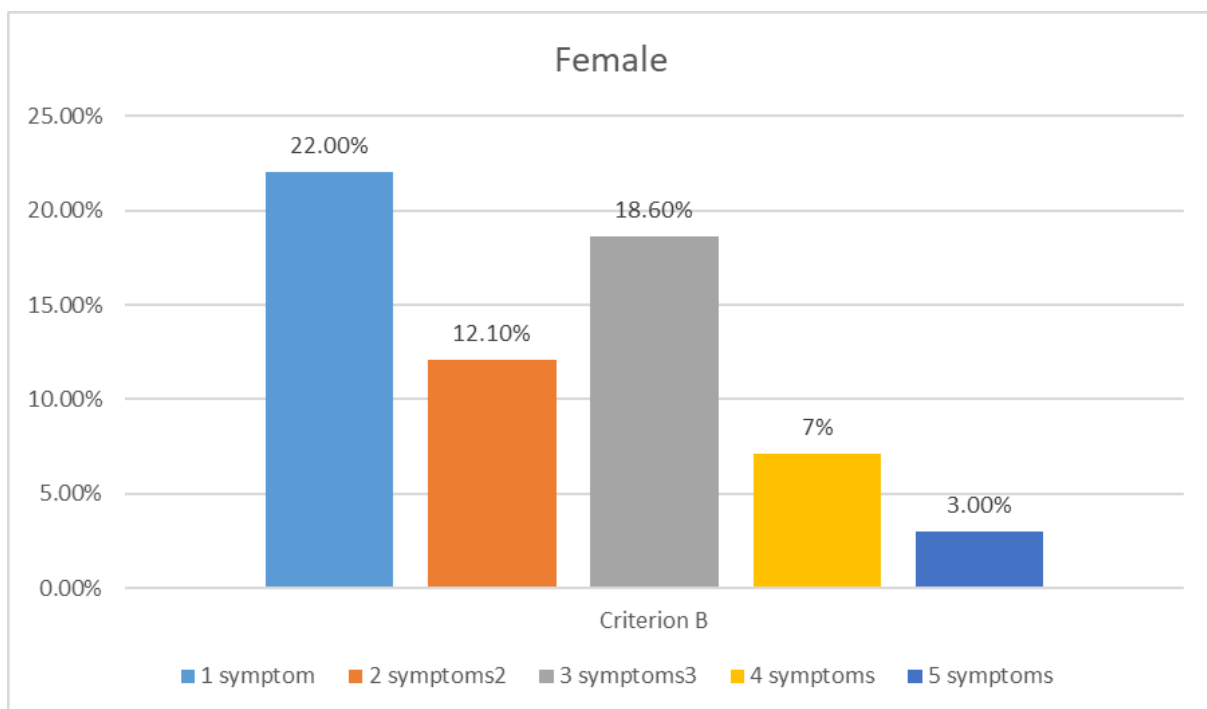


Fig 5. Criterion B comparison for Females

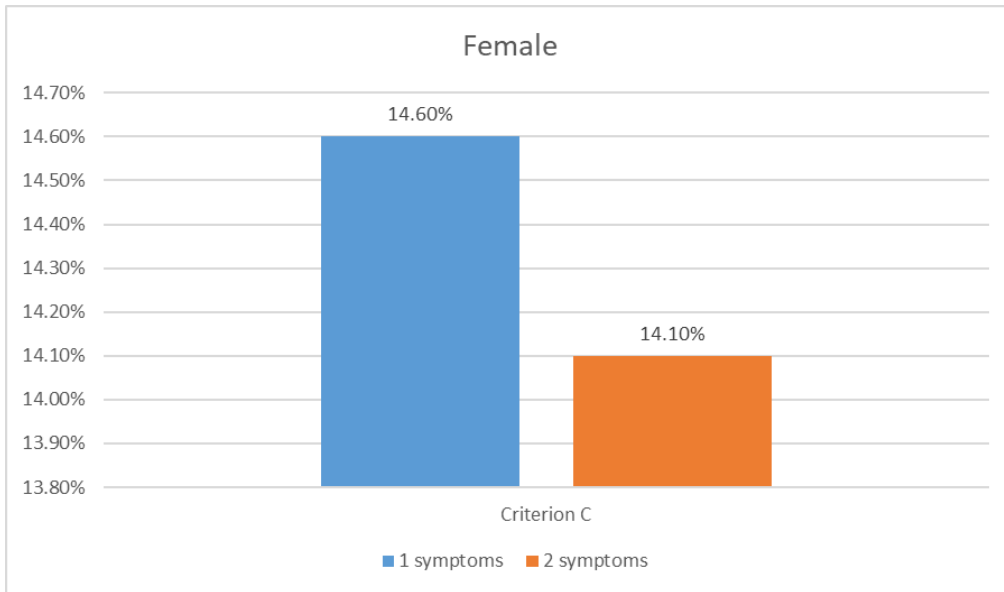


Fig 6. Criterion C comparisons for Females

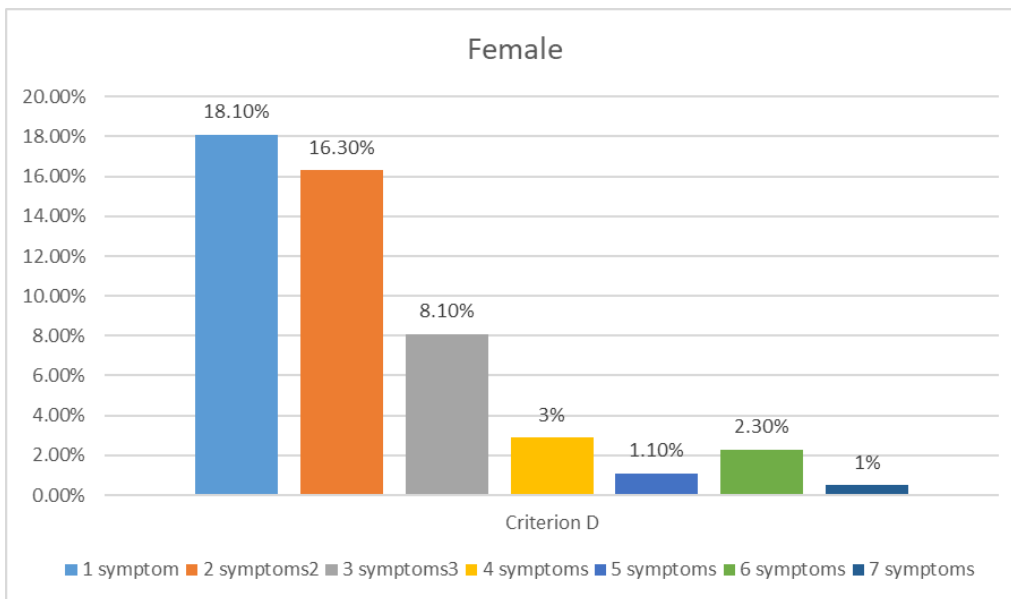


Fig 7. Criterion D comparisons for Females

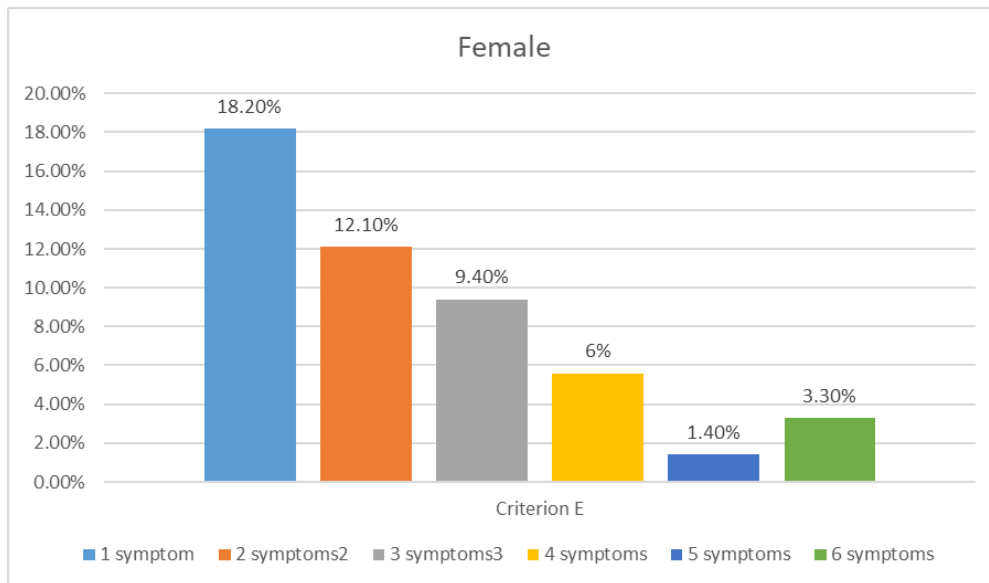


Fig 8. Criterion E comparisons for Females

In the figures above, it can be seen that symptoms of PTSS are significantly higher in females as compared to males, due to which females are most likely to adopt to PTSS, after suffering from the problems of COVID-19. For example, when compared results of Criterion B in males (Figure 1) shows 13.9% as compared to female, which is 22%. Hence, female showcase higher cognition in mood as compared to men in all the Criterion.

4. DISCUSSION

The purpose of this investigation was to check whether patients who just recovered from COVID-19 displayed symptoms of PTSS in their personalities. For this purpose, a quantitative questionnaire was used for investigation, with 5-point Likert scale questionnaire. This study only investigated patients who recovered in the last month, specifically in Nawabshah. For this purpose, regression analysis was performed, and questionnaire used was of PCL-5. In the results obtained, it is observed that many respondents currently suffer from the problems of PTSS. According to research, people suffering from the problems of PTSS always remember disturbing and unwanted memories which makes them stressful, and they are unable to forget this information (Mak et al., 2010). Hence, it can be argued that people investigated suffer from problem of getting flashbacks to what they suffered hence making them stressful.

Another important parameter in PTSS is that people, get dreams of painful experience they had during past days (Lee et al., 2019). In results obtained in this study, the percentage of people suffering from psychiatric problems attached to PTSS is very high. Especially, the percentage of women as compared to men is significantly high. Considering the fact, that news of COVID-19 and lockdown period in Nawabshah is still headlines in news, lifting off this lockdown in near future is almost impossible. Hence it can be said that prevalence of PTSS will be much more if this lockdown period and number of COVID-19

patients keep on elevating. When results were collected, it was observed that most of the people investigated said that they face issues of feeling that stressful experience happening again. In an investigation also, it is found that people who just came out of a problem get flashbacks of those problems again and again for a few months (Liu et al., 2020). Due to this reason, this problem keeps on disturbing them, hence making them prone to stressful condition. In this investigation, most of the patients marked 'quite a bit' option when they answered third statement of questionnaire. Nonetheless, percentage of women marking that option was significantly high as compared to men.

In one more result drawn, it is reported that these people suffer from more stressful conditions when reminded of past experience of COVID-19. In PCL-5 scale, if person is reminded about his experience, his stress level starts to elevate with increased pace, as compared to recovery. Hence discussion of COVID-19 can further increase their stress level and should be avoided. However, in this investigation, most of the people marked that their family members kept talking about their experience of COVID-19 especially close relatives, which makes it difficult for them to forget the experience. In support of this investigation, a latest research suggested that reminder of stressful experience results in development of PTSS, making it difficult for people to forget their experience (Khan et al., 2020). Due to these arguments, it can be stated that prevalence of PTSS in investigated respondents is significantly high.

In this study, the authors made use of quantitative approach to look into gender differences with respect to prevalence of PTSS. Here it can be easily argued that this was first investigation in Pakistan which presented prevalence of PTSS based on gender characteristics. After carrying out investigation, it is found that prevalence of PTSS is noticeably high in females as compared to males. Furthermore, when the investigators performed sub-symptom analysis by using PCL-5, women reported more re-experiencing of COVID-19 experiences. When a person gets regular flashbacks of the events than chances of suffering from cognition and mood hyperarousal elevation increase to a major extent (Inamullah et al., 2020). Hence, one more important observation made in this investigation is the fact that prevalence of PTSS in female population of Nawabshah is high as compared to males.

People suffering from the problems of PTSS always have strong physical reactions, especially when they are reminded of painful experience (Holmes et al., 2020). When people investigated in this research were asked in this regard, they argued that they sometimes feel heart pounding when someone reminds of this experience. In bar graphs, it can be seen that female respondents are found with high number of re-experiencing behaviours as compared to men. This result is supported by other investigations, which showed that once traumatic events take place, acute psychological disorders attached to memories are comparatively more prevalent in females as compared to males (Lamoureux-lamarche et al., 2016). In one evidence piece, it is argued that fluctuations in hormones trigger emotional stimuli which result in a series of flashbacks of incidents (Chang et al., 2016). Due to this

reason, women experienced more flashbacks of what they went through when they carry COVID-19. Hence, found with more symptoms of PTSS as compared to men.

A statement in PCL-5 scale is about cognition or mood swings, which were seen to be prevalent in respondents of this investigation. There was no investigation on this statement presenting its views. However, results obtained in this investigation showed that men and women both recovering from COVID-19 suffer from problems of having strong negative beliefs of their personalities. For example, they thought that they had weak immunity system and that any disease can easily catch them. This argument was supported by 3 studies, stating that people who just came out of trauma start to hate themselves (Harch et al., 2017). Due to this reason prevalence of PTSS is common in these people.

5. CONCLUSION

This investigation was the only one carried out in Pakistan in context of PTSS prevalence in COVID-19 patients who just recovered. PTSS is a psychological problem faced by those people who came out of traumatic events and are unable to forget it. Pakistan is a nation currently experiencing growth in number of COVID-19 patients. Due to this reason, this study tried to investigate prevalence of PTSS in patients who just recovered from this pandemic. A total of 200 patients were investigated, and results indicated that a big majority suffers from PTSS. This investigation took place on 07th day after being declared as healthy. After performing investigation, it can be concluded that PTSS sub-symptoms such as re-experiencing, mood swings, and cognition alterations are high among females as compared to males. In addition, most of investigated personnel showcased aggressive behaviours, except for few of them. They regularly see flashbacks of events, which took place during their disease time period.

They are found with poor behaviors, they feel depressed, and they lose trust of their family members. Based on the observed results, these people blame themselves and believe that any small problem can take them down. This weakens their internal motivation, and they suffer from daily issues of feeling angry and depressed. However, no other investigation has been carried out, since it is a fresh topic, and demanding more research at the moment.

6. RECOMMENDATION

This study is constituted on limited presented literature on Post-Traumatic Stress Symptoms (PTSS) topic in Pakistan. Only a few studies addressed issue of COVID-19 and psychological issues taking place due to it. Hence more studies should be performed by investigators of Pakistan since literature lacks in providing fruitful evidence on similar topics. The rate of patients suffering from COVID-19 is moderately rising in Pakistan, hence psychological problems would be on the rise also. Therefore, it is recommended that more investigations should be carried out in next month because, in this way, chances of

reducing psychologically ill patients would increase. Moreover, authorities are suggested to extend pivotal consideration on attachment of psychological assistance for patients to facilitate integral well-being. In addition, this research was limited to quantitative investigation, hence future studies should investigate doctors, psychologists and paramedical staff members to inquire about recovering from these psychological problems. Interviews should be carried out with them and proper guidance should be taken, in order to understand the problems faced by these people and how they should be treated by their family members.

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