Research Article

Psychosocial Reactions of COVID-19 in Pakistan: A Psychometric Study

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Abstract

Background: COVID-19 pandemic has created numerous psycho-social issues throughout the world.

Aim: The current study is aimed at identifying and validating the psychosocial reactions of university students to current pandemic COVID-19.

Methods: Mixed-methods research design was used. Initially, the presenting problems of 39 university students were collated and a list of 28 items was finalized and presented to 15 experienced clinical psychologists for the frequency of occurrence for Psychosocial Reaction Scale (PRS). An online survey was conducted on 510 university students with an age range of 17-26 (M=21.86; SD=2.94) and presented Psychosocial Reaction Scale (PRS) and Depression Anxiety Stress Scale (DASS) for construct validity.

Results: Results of both exploratory and confirmatory factor analyses revealed a two-factor model depressive symptoms and apprehension. The PRS shown a satisfactory internal consistency and construct validity.

Conclusion: The findings are further discussed in the continual significance and counseling plans to handle adverse reactions of COVID-19 in Pakistani university students.

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Keywords: COVID-19, Pakistan, Depression, Anxiety, scale, University students

Introduction:

The recent pandemic of COVID-19 has threatened the whole world with fears, uncertainty with restricted social engagement to curtail the spread[1]. This virus has changed our lifestyles, work patterns and home environment yet the world was unprepared and shocked to handle the unprecedented effects of the viral spread of COVID-19[2-4]. This is a universal crisis converted into a community practice as people have reacted differently towards quarantine, compliance with precautionary measures, and hygiene. In past, researchers have made a significant contribution to understand the impact of such pandemics like HIV and SARS on social, emotional, and economic functioning[5-6].

This widespread COVID-19 is also associated with many psychosocial and emotional consequences including fear, confusion, anger, boredom, financial problems, anxiety, posttraumatic stress, and depression[7-9]. According to the studies, fear of death, feelings of boredom, loneliness, and anger are developing in people in quarantine situation as they lost face to face interaction and traditional social networking to handle such stressful events[10]. Most of these problems are associated with disturbed sleep and poor health[11-12]. The most prominent reasons for these psychosocial issues are uncertainty, fear of death, and lack of accurate information in the general phobic[2,13].

The unpredictable situations like this pandemic tend to cause such psychological states to minimize a person's capacity to handle the situation effectively. Therefore, sustained attention should be given not only to curtail its spread but also to prevent people from serious

mental health conditions[14]. The need of the day is to identify the specific nature of reactions, associated risk, and protective factors and intervention plan to handle this crisis[15].

As mentioned earlier, COVID-19 has a universal crisis but specific reactions associated with this varies from context to context. Pakistan is an under privileged country with a scarcity of basic life facilities and education in general people. Being a collectivistic culture where social interaction is a key to family functioning and experiencing this sudden and unpredictable time of lockdown has created many psychological issues. Therefore, this research is focused on university students who have a certain routine of university life and tend to feel more emotionally disturbed. The aim is to identify the contextual nature of the psychosocial response to COVID pandemic in order to plan a systematic intervention and prevention to handle such psychological issues.

Methods:

By using mixed-methods research design this study was conducted in private and government universities of Lahore, Pakistan during the period of April 2020 to May 2020. The study was completed in three phases. Details of the phases are given below.

Phase 1: Generating Items

The aim of this phase was to explore the university student's experience and expression of psychosocial reactions to the current outbreak of COVID-19.

Method and Outcome

39 graduate self-referred students (22 men; 17 women) to a counseling service center of a private university in Lahore during COVID-19 were interviewed in detail. One to one interviews were conducted to get the data from the participants. They were asked to respond in detail to a phenomenological question "what is their psychological experience on the current outbreak of the COVID-19?" Each participant's interview lasted for 15 minutes and their interviews were recorded in the written form of their verbatims.

All the responses from the interview of the participants were collated in written form. The transcript of 39 participant's interviews was analyzed by two clinical psychologists independently. The experts independently examined each interview of the participants and omitted the unclear items and 28 items that were manifesting the psychosocial reactions of the COVID-19 were finalized. The list was transformed into a 4-point Likert scale, 0 (not at all) to 3 (a lot).

Phase 2: Content Validity

In this phase, the purpose was to analyze the content of the items by the experts that can highlight the relevance of each item measuring the psychosocial reactions of COVID-19. As well as analyze the user-friendliness, language, layout, and comprehension of the scale.

Method and outcome

The 15 clinical psychologists with the minimum 3 years of clinical experience were given a set of 28 items to evaluate each item's relevance measuring the psychosocial problems of COVID-19. The clinical psychologists rated each on a 6-point rating scale comprising 0 "not relevant" to 5 "very much relevant". Each expert rating on each item was added that presented the total score between the range of 0-50. Those items whose score was more than 25 were retained for the next phase of the study. The expert's score on item 10 was less than 25 scores therefore, it was dropped and leaving a total of 27 items for Phase 3 of the study.

Phase 3: Psychometric Properties

This phase aimed to demonstrate factor structure, reliability and validity of the Psychosocial Reaction Scale for COVID-19.

Participants

Through an online survey, five hundred and ten university students (women = 306[60%]; men = 204[40%]), selected from four private and public universities of Lahore, studying in BS (n = 342[67%]) and MS (n = 168[33%]) participated in the survey with the age range of 17-26 (21.86 ±2.94). In the current sample most of the participants belonged to the nuclear family system (n = 347[68%]) with parental education up till graduation (n = 306[60%]).

Measures

Demographic performa. The participants were provided the demographic performa based on the informa-

tion regarding participant's gender, age, education, parental education, and family system.

The Psychosocial Reaction Scale (PRS), a 27-item self-report measure used to assess the psychosocial reactions of university students. The participants had to rate each item to the extent to which it implies to them by rating each item of the scale on a 4-point Likert scale (0-3).The participants were asked that "Following are some reactions expressed by university students to events relating to the recent outbreak of coronavirus across the world. Read each item carefully and indicate the extent to which it is true for you".

Depression Anxiety & Stress Scale – 21-Short Form. The DASS-21 [16] is a set of three self-report subscales that are measuring the mental health of the individual on the levels of depression, anxiety, and stress. DASS-21 was used to establish the construct validity of the developed scale PRS. The 21 items DASS measures the mental health problems on a 4-point rating scale where each participant was asked to "Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week". The DASS-21 is rigorously used in the Pakistani students and have adequate psychometric properties. The Cronbach alpha of the DASS-21 is .93 indicating a satisfactory internal consistency of DASS.

Procedure

After Institutional Review Board (IRB) approval, the current study was carried out on the university student's sample through an online survey. The Google Forms were used to develop the performa and forwarded it to the concerned universities situated in Lahore. In the instruction of the performa the participants were ensured about the confidentially and keeping the participant's responses anonymous in the research. After a week the survey was closed for the public.

Results:

For the analysis, the data of five hundred and ten university students were divided into the two groups (two hundred and twenty-five each group) to run the Exploratory and Confirmatory analyses.

Exploratory Factor Analysis of Psychosocial Problems Scale of COVID-19

The Exploratory Factor Analysis (EFA) is used that aimed to explore the pattern of the psychosocial problems experienced by the university students in the current outbreak of COVID-19. The exploratory factor analysis was carried out with the help of Principal component analysis with Varimax rotation on 27 items of PRS with .40 factor loading; 26 items showed significant item-total correlation on 2 factors. Kaiser-Meyer-Olkin measure was found to .93 with the $p < .001$ Bartlett's Test of Sphericity.

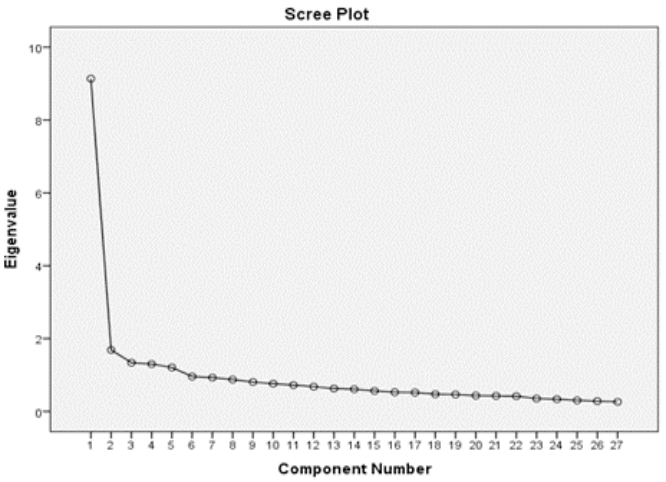

Figure 1. *Scree Plot of PRS*

6, 5, and 4-factor solution was observed in Principal Component Analysis using Varimax rotation. The 2-factor solution was considered as the best fit that was representing the clear extracted factors of the scale. The factors were given the label as depressive symptoms and apprehension.

Confirmatory Factor Analysis of Psychosocial Reactions Scale of COVID-19

The AMOS 21 was used to conduct the confirmatory factor analysis to identify the best-fit model of the Psychosocial Reactions Scale for COVID-19 on a sample of two hundred and twenty-five participants. In the initial analysis of the two-factor solution of the psychosocial reactions scale the results showed an acceptable model fit. The results confirmed the good fit of the PRS with two factors. The model fit indices of the model were as follows: Chi-square = 617.65, p = .018, RMSEA = .04, CFI = .93, TLI = .92, IFI = .93 and NFI = .88.

Table 1: *Factor Structure of Psychosocial Problems Scale of COVID-19 (PPS)* ***on 26 Items***

Items	Statement	Factor 1	Factor 2
1	Feeling confused	**.60**	.21
2	Insecure	**.51**	.27
3	Feeling bored	**.58**	.12
5	Feeling uncertain about the future	**.64**	.22
6	Sleep problems	**.67**	.08
7	Low mood	**.78**	.07
8	Feeling pessimistic about the future	**.66**	.22
9	Feeling panicky	**.65**	.36
12	Feeling aches and pains	**.57**	.05
13	Financial crisis	**.42**	.12
14	Feel social isolation	**.49**	.19
15	Lack of compliance by others	**.54**	.23
16	Fear of loneliness	**.62**	.22
18	Worried about the future	**.60**	.34
20	Feeling devastated	**.67**	.36
27	Feeling exhausted	**.71**	.20
4	Fear of catching the disease	.22	**.61**
11	Worried about own safety	.31	**.61**
17	Preoccupation with thoughts relating to the current virus	.35	**.59**
19	Anticipating the worst news	.37	**.59**
21	Fear of death	.22	**.48**
22	Becoming more religious	-.10	**.46**
23	Preoccupied with cleanliness	.04	**.60**
24	Restricted daily routine	.16	**.55**
25	Worried about job prospects	.32	**.42**
26	Preoccupied with "what if…"	.45	**.50**
Eigen Value		6.97	3.85
% of Variance		25.83	14.26
Cumulative %		25.83	40.09

Note. Items with factor loadings of .40 and above have been boldfaced

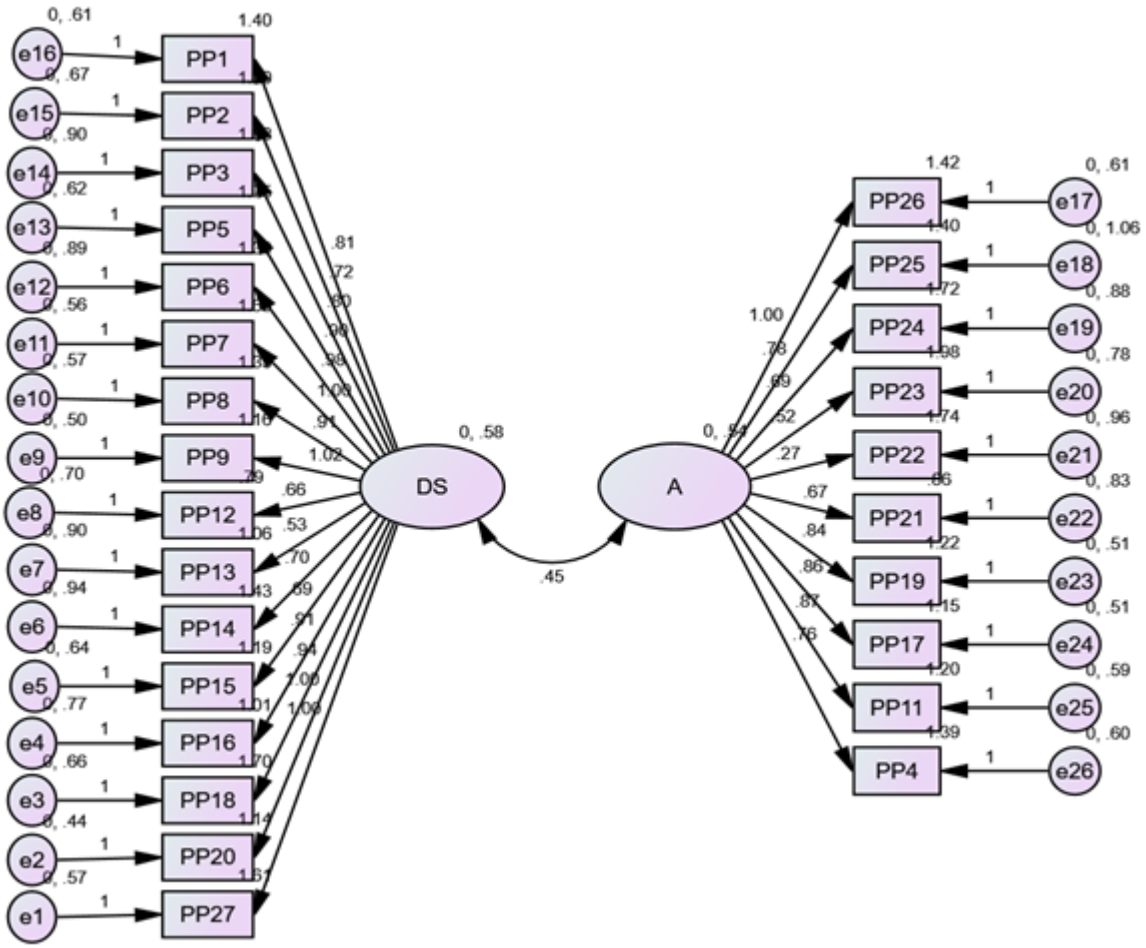

Figure 2: Confirmatory Analysis of the Psychosocial Reaction Scale

Reliability:

The internal consistency of the total Psychosocial Reaction Scale of COVID-19 is found to be high and strong on the 26-items (α = .92). The subfactor Depressive Symptom and Apprehension was also highly internally consistent with the alpha value of α = .91 & α = .79, respectively. The split-half reliability of PRS was also established where the scale was divided with the help of Odd/Even method into two halves and the analysis showed r=.91 value of split-half reliability.

Validity:

The validity of the Psychosocial Problems Scale of COVID-19 was established by investigating the construct validity of the scale.

Construct validity. The correlation of DASS-21scores and Psychosocial Problems Scale that is highlighted that there is a significant positive moderate correlation between both scales indicating good construct validity.

The mean difference between the men and women

Table 2: *Inter Correlations, Means, and Standard Deviations of PPS Factors Scores on DASS-21 (N=510)*

Factors	DS	A	PRS	DASS
F1: DS	---	.66***	.95***	.66***
F2: A	---	---	.85***	.38**
PRS	---	---	---	.61***
DASS	---	---	---	---
M	21.71	14.06	37.37	18.31
SD	10.85	6.05	16.04	13.63

Note. DS=Depressive Symptoms, *A*=Apprehension, *PSS* = Psychosocial Reaction Scale of COVID-19, **p <.05, ** p<.01, ***p<.001.*

showed no significant difference (F [1, 508] = 0.33, p = .564. Whereas, students who are in their final year are experiencing more psychosocial problems as the young undergraduate students (F [1, 508] = 2.51, p = .021*.

Discussion:

Every change in our surroundings or circumstances put us under stress. The nature of the stress can vary from person to person and situation to situation. The more the change is unexpected the more it is disturbing. The less we understand the cause and effect the more we are frightened. The sudden outbreak of COVID-19 has led the world to adjust to many unseen threats and challenges. Many mental health professionals are now trying to understand the nature, magnitude, and risk factors associated with the adverse consequences of COVID-19 [9]. Few researchers have identified that old age, pregnant women, and university students are said to be at great risk of developing mental health problems17. Moreover, uncertain situations tend to create fear and anxieties in people who also associate with poor sleep and disrupted quality of life. The current study therefore focused on university students' experience and expression of common psychosocial reactions of this pandemic. It is also important to note that instead of using traditional scales and measures to assess the magnitude of the problems, we started with an emic approach to contextualize the psychosocial reactions in Pakistani university students.

The findings of the study are in line with literature showing that commonly reported problems are depression and anxiety10. The first factor found was depressive features indicating the nature of experiences that university students are facing during a lockdown situation. The sudden upsurge of COVID-19 has disrupted daily functioning, restricted social activities, and fear of having illness has resulted in a feeling of boredom, sleep problems, low mood, and feeling uncertain. In a short period, lives have turned upside down, changed our view about the world, people, and ourselves which resulted in uncertainty and depressive features.

The second factor that emerged in the current study is apprehension which is also consistent with the literature[7-8]. Again the pressure of social media news and fear of catching of problems may lead to a feeling of apprehension, fear of death, and preoccupation with COVID-19. Such feelings of apprehension and nervousness are a natural reaction to any event where person experience less control. At a time of sudden and severe stress, two possible outcomes can be observed, two extreme reactions. Some overreact with panic measures and others deny the danger and perhaps pretend nothing is going to happen to them. Most of us move from one reaction to the other. This situation of uncertainty arises especially when not enough information to form a realistic view of the problem and reaction. Half-baked myths and imaginary solutions are superficially attractive and therefore appear plausible.

Conclusion:

The COVID-19 can lead to a mental health crisis, especially countries like ours with less health-related facilities, low education, and awareness which could worsen the pandemic. There is a great need to address these mental health needs to timely prevent people from adverse consequences.

Ethical Approval: Given
Conflict of Interest: The authors declare no conflict of interest.
Funding Source: None

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