COVID-DAS: Preparing for Post-COVID Depression Epidemic

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Abstract: *During the COVID-19 pandemic people can experience stress, anxiety, fear, sadness, loneliness and mental health disorders, including anxiety and depression might worsen. Surveys show a major increase in the number adults who report symptoms of stress, anxiety and depression during the pandemic. Some people have increased their use of alcohol or drugs, thinking that can help them cope with their fears about the pandemic. In reality, using these substances can worsen anxiety and depression. Aim and objectives: Design and validate a tool for identification of psychological distress due to COVID 19 Pandemic in general population and patients attending a tertiary care psychiatric facility in northern India. Developing recommendations for adaptive mental hygiene in target population manifesting onset or exacerbation of psychological distress due to COVID-19 Pandemic and its phenomenon. Materials and methods: A descriptive, cross-sectional survey in the aforementioned context was approved by the Ethics Committee at Government Medical College Srinagar and SMHS Associated Hospitals. The data was gathered via convenience sampling using a semi-structured questionnaire developed on the pattern of Patient health questionnaire (PHQ9) and Generalized anxiety disorder (GAD7) by the authors and named as COVID-DAS (Distress acknowledgment scale). Results: COVID DAS was circulated among a total of 1002 subjects. a breakup of online, offline and considered responses amounted to a response rate of 70% . COVID DAS was prepared using six sections. Conclusion: Sociologists and mental health experts world over are expressing legitimate concerns about the rise of psychosocial problems like suicide, exploitation of weaker sections of society in the form of domestic violence, workplace harassment, withholding dues, denying healthcare access to name a few. To make matters worse loads of unclassified and inauthentic information is turning people into anxiety capsules that could explode at any moment. A need was felt to assess COVID pandemic related distress and coping measures in general population, hence this manuscript.*

Keywords: *COVID DAS, Mental Health, post COVID pandemic.*

1. Introduction

COVID-19 Pandemic is altering human race in a manner which no one could have foreseen, it affected people in different ways depending on particular situations and unique contexts, yet within this individual uniqueness, people are collectively experiencing exhaustion, annoyance, and the feeling of not being in control over their own lives. World Health Organization (WHO) has recognized that current crisis is generating stress in population.

A review of literature on consequences of pandemics in countries due to the SARS virus, isolation conducted due to Ebola and prison confinement has laid a foundation to understand how pandemic phenomena affect the brain and mental health.

Experts warn us that, most common of all, depression may come knocking at the door and most vulnerable are the marginalized populations with mental health issues and the elderly. However, a health emergency of this magnitude with its social and economic impact is giving everyone the sting of vulnerability. In this backdrop a need was felt to

design a tool for preliminary assessment of stress generated by COVID19 pandemic and resultant coping measures. The relevance of such a study cannot be overemphasized since Kashmir, an acknowledged conflict zone, had barely recovered from lockdown imposed in August 2019 and internet restrictions were continuing when lockdown was re-enforced in the wake of COVID 19 Pandemic. This population was already fatigued by years of economic, academic and health-care related backlogs, to name a few, when it had to brace itself for this Pandemic.

Psychiatrists are faced with the tough task of reassuring the masses yet at the same time stressing the importance of tedious and socially disruptive but inevitable pandemic control measures like quarantine, lockdown, hygiene and social distancing. Dedicated efforts are needed to awaken the mental and physical strengths of community in general and medical workforce in particular so as to nourish humanity with hope, energy and emotional comfort. In the above backdrop authors sought to measure psychological distress in terms of fear and dread, anxiety and depressive features resulting from or worsening due to COVID-19 Pandemic, the impact of such psychological distress on day

to day functioning of the study population and the coping styles of the study population.

Aims and Objectives

- Design and validate a tool for identification of psychological distress due to COVID 19 Pandemic in general population and patients attending a tertiary care psychiatric facility in northern India.
- Developing recommendations for adaptive mental hygiene in target population manifesting onset or exacerbation of psychological distress due to COVID-19 Pandemic and its phenomena.

2. Materials and methods

Study Design: A descriptive, cross-sectional survey in the aforementioned context was approved by the Institutional Ethics Committee at Government Medical College Srinagar and SMHS Associated Hospitals.

The data was gathered via convenience sampling using a semi-structured questionnaire developed by the authors and named as COVID-DAS (Distress acknowledgment scale). Since the questionnaire was designed to be administered either electronically or by a post-graduate resident as part of standardized IEC (Information, Education and Communication) activity, during a routine consultation, it was drafted in English language and translation to a local vernacular was not deemed necessary.

COVID-DAS was developed as a screening tool for specific psychological distress resulting from COVID pandemic and its related phenomena. It is a brief symptom scale that might inform clinicians about the level of psychological distress in an individual and would, at the same time, allow for interaction with that individual for further reference and/or management as deemed needful. This scale was developed on the pattern of Patient health questionnaire (PHQ9) and Generalized anxiety disorder (GAD7) [5].

A pool of items was generated on the basis of clinical expertise and extensive review of available literature [6,7]. COVID-DAS was designed for both self-report &/or interviewer administration in electronic document or pen-paper format. Face and content validity were established by consultation of two expert psychiatrists and a psychologist who assessed the questionnaire items for qualities of clarity, conciseness, grammar, reading aesthetics, redundancy and ease of administration. The suggestions offered by the experts were incorporated keeping in view the central purpose of the study and the ease and length of administration.

The construct was made available to contacts of authors in Google docs format by way of social media networks like whatsApp, and Facebook as necessitated by the advisory for maintaining physical distance. The online scale consisted of six sections. First section provided an introduction to the psycho-social issues that can emerge as a result of COVID 19 pandemic and a brief awareness raising effort on part of the authors. Second section was a disclaimer and consent to participate in a voluntary survey. Third section recorded the demographic information of the participants. In subsequent, section 4, Items 1 to 4 were designed to assess the participants for having fear or worry about COVID pandemic or resultant confinement and items 5 to 13 were designed to assess the respondents for the presence of commonly encountered anxiety &/or depressive features in terms of lack of interest/pleasure, hopelessness, disturbed sleep/appetite, somatic complaints, self-medication and exasperation in terms of suicidal ideation, worsening of any pre-existing psychiatric ailments and financial stress. Questions in section 4 were rated on a 5-point Likert scale with options as Never, Rarely, Sometimes, Often, Always. Section 5 was designed to assess how participants perceived COVID pandemic adversity to affect their functioning in areas of work or interpersonal relationships and a single question in this section was rated on a 4 point Likert scale with options as not difficult at all, somewhat difficult, Very difficult and extremely difficult. Section 6 was structured to assess the participants for coping styles to the adversity of COVID pandemic and its phenomena. The extent of positive coping strategies was assessed by way of items 1 to 6 and negative coping strategies by way of items 7 to 13. Questions in section 6 were rated on a 3 item Likert scale with options as Increased, Decreased or remained the same. Concluding section provides email of the corresponding author for comments and a suggestion that respondents can seek professional help, if in need of the same, at Outpatient Department of Institute of Mental Health and Neurosciences (IMHANS) Kashmir. COVID-DAS was made available in Google docs format. Results were analysed using software package IBM SPSS. A condensed form of the scale is presented in Table 1.

Table 1: COVID-DAS

Over the last two weeks, how often have you been:

	Respond to the following questions with:	*Never*	*Rarely*	*Sometimes*	*Often*	*Always*
F_1	Worrying about contracting COVID-19?					
F_2	Fearing for your life due to COVID-19 Pandemic?					
F_3	Fearing that you might lose a loved one to COVID-19 Pandemic?					
F_4	Scared of running out of essential supplies?					
D_1	Feeling disinterested in doing otherwise pleasurable activities?					
D_2	Feeling low, depressed. hopeless or tearful thinking the pandemic will never end?					
D_3	Having trouble falling or staying asleep or sleeping too much?					
D_4	Having increased or decreased appetite?					
D_5	Having aches and pains?					
D_6	Thoughts of ending your life/harming yourself?					
D_7	Taking OTC (Sleeping, headache or Blood Pressure pills) medications?					
D_8	Worried about losing your job/ finances?					

If you checked off any problems, how difficult have these made it for you to work, take care of things at home or get along with other people?

Did the activities below "Increase, Decrease or Remained the same for you" due to the COVID-19?

Respond to the following questions with:	Increased	Decreased	Remained the same
Hand washing/cleaning			
Extending support to those who are scared or have negative thoughts			
Sharing jokes with family/friends			
Reading books			
Prayer Times			
Helping family/ friends with daily chores?			
Smoking ☐ I am not a smoker			
Panic buying			
Time spent on social media			
Time spent with electronic media (TV, Radio)			
Having scuffles/ arguments with your family members/ inmates?			
Assuming that authorities will solve everything?			
Breaking confinement and defying the imposed lockdown?			

3. Results

COVID DAS was circulated among a total of 1002 subjects. A breakup of online, offline and considered responses amounting to a response rate of 70% is given in Table 2. The results were analysed on 697 responses of which 81 were collected offline while 616 were collected online. 22 responses were excluded for being incomplete or being filled by non-state subjects or state subjects not residing in the state at the time of survey.

Table 2

Survey Mode	Circulated	Received	Considered	Response Rate
Offline	102	87	81	79%
Online	900	632	616	68%
Total	1002	719	697	70%

Psychometric Properties:
The instrument reliability was established statistically using Cronbach's alpha as an objective index of internal consistency. In Table 3 the items assessing Depressive features (D1-D6) were found to be internally consistent with a Cronbach's alpha value of 0.778. Cronbach's alpha was calculated with value of reliability coefficient threshold above 0.7 was used in the study [8]. Items D7 and D8 were removed due to low item to total correlation value of below 0.3.

Table 3

Item to total Correlation	Inter-Item Correlation Matrix							Cronbach's Alpha
Depression		D1	D2	D3	D4	D5	D6	
0.615	D1	1.000	0.493	0.458	0.381	0.461	0.311	
0.536	D2	0.493	1.000	0.388	0.360	0.379	0.235	
0.536	D3	0.458	0.388	1.000	0.439	0.370	0.181	0.778
0.560	D4	0.381	0.360	0.439	1.000	0.478	0.280	
0.568	D5	0.461	0.379	0.370	0.478	1.000	0.290	
0.350	D6	0.311	0.235	0.181	0.280	0.290	1.000	

Similarly, for the Items measuring Fear (F1-F4) internal consistency was assessed with Cronbach's Alpha with a value of 0.825 (Table 4).

Table 4

Item to total Correlation	Inter-Item Correlation Matrix					Cronbach's Alpha
Fear	Item Label	F1	F2	F3	F4	
0.710	F1	1.000				
0.741	F2	0.723	1.000			0.825
0.644	F3	0.573	0.615	1.000		
0.526	F4	0.458	0.481	0.436	1.000	

Exploratory factor analysis. Exploratory factor analysis (EFA) was performed to explore the possible underlying factor structure [9]. The remaining items (F1-F4) and (D1-D6) were subjected to data reduction through Exploratory factor analysis (EFA), for testing the construct formed from the various items being studied for establishing the theoretical and statistical concepts in the study [8]. Before, EFA data was carefully examined for missing responses (if any) and the score of negative items were re-coded/reversed. EFA was performed through Principal Component Analysis method of extraction with Varimax rotation for this study. Varimax rotation maximizes the number of items with high loadings on a component, thereby enhancing the interpretability of factors ([10]. The factors having Eigen value equal to or more than 1 criterion was used to determine the number of factors to be extracted. Furthermore, to test the reliability of the construct items. Sample adequacy and internal consistency, was established using statistical test Kaiser-Meyer-Olkin (KMO) KMO should be > 0.50[11] and Bartlett's test for significance having threshold of < 0.05.

In addition, factor loading of 0.50 for each item was considered as a threshold for retaining items to ensure greater confidence ([8,12]. Loading of the various construct items (shown by italic in the rotated component matrix) provides evidence for the validity of the instrument. However, item (D6) were dropped because of poor loading in their respective factors and also because of cross loading issues Table 5.

Table 5: Results of Exploratory Factor Analysis (Rotated Component Matrix) for the Survey Instrument with variables for Fear and Depression

	Component	
	F	D
F1	0.817	0.183
F2	0.873	0.071
F3	0.794	0.110
F4	0.679	0.213
D1	0.427	0.640
D2	0.477	0.549
D3	0.352	0.622
D4	-0.031	0.811
D5	0.045	0.797
Initial Eigen Values	44.586	17.000
Cumulative Percentage of Variance	33.962	61.586
Sample Adequacy (Kaiser-Meyer-Olkin Measure)		0.834
Bartlett's Test of Sphericity		0.000

Table 5 shows the factor loading of scale items, Eigen values and percentage of variance of the different factors after rotation. The sampling adequacy (KMO) for overall construct is 0.834 and Bartlett's test of Sphericity is significant at 0.000 levels, which indicates that the factor analysis is good for further analysis. The components having Eigen value greater than one are considered, hence, two components were obtained which explains 61.59 per cent of the total variance.

Demographics
A total of 196 respondents (Table 6) indicated having a psychiatric ailment, of these 140 indicated having no discomfort, 42 indicated having some discomfort, 7 indicated having much discomfort and 7 indicated having extreme discomfort due to worsening of an already existing psychiatric ailment.

Table 6

	Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult	Total
U1	140	42	7	7	196

In Table 7, response to the question regarding functionality, 43.2% of respondents indicated having faced no difficulty at all, 50.8% indicated having some difficulty, 4.0% indicated much difficulty and 2% indicated extreme difficulty due to psychological distress resulting from COVID 19 Pandemic and its phenomena.

Table 7

Statement	Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
U2	301 (43.2%)	354 (50.8 %)	28 (4 %)	14 (2%)

An analysis of results revealed that 101 considered respondents were smokers and 596 were non-smokers. In Table 8 of the 101 smokers, 20 indicated that smoking increased, 33 indicated that smoking decreased while 48 indicated that their smoking remained unchanged in response to COVID 19 Pandemic and its phenomena.

Table 8

Statement	Increased	Remained Same	Decreased	Total
U3	20	48	33	101

Table 9: Descriptive Analysis of Positive Coping Strategies.

	Mean	Std. Deviation	Increased	Remained Same	Decreased
COP1	2.89	0.372	14(2%)	49(7%)	634(91%)
COP2	2.63	0.524	14(2.01%)	231(33.14%)	452(64.85%)
COP3	2.50	0.610	42(6%)	259(37.2%)	389(55.8%)
COP4	2.13	0.744	42(6%)	259(37.2%)	389(55.8%)
COP5	2.36	0.557	154(22.1%)	301(43.2%)	242(34.7%)
COP6	2.54	0.655	28(4%)	392(56.2%)	277(39.7%)

Table 9, hand washing and cleanliness, extending support to those who are scared or have negative thoughts, sharing jokes with family and friends, reading books, prayer times and helping family and friends with daily chores registered a decrease or remained same.

Table 10: Descriptive Analysis of Negative Coping Strategies

	Mean	Std. Deviation	Increased	Remained Same	Decreased
NeCOP1	2.23	0.597	63 (9.0%)	413 (59.3%)	221 (31.7%)
NeCOP2	2.77	0.445	7 (1.0%)	147 (21.1%)	543 (77.9%)
NeCOP3	2.41	0.666	70 (10.0%)	273 (39.2%)	354 (50.8%)
NeCOP4	1.36	0.592	490 (70.3%)	165 (23.7%)	42 (6.0%)
NeCOP5	1.45	0.735	488 (70%)	107 (15.4%)	102 (14.6%)
NeCOP6	1.16	0.503	616 (88.4%)	67 (9.6%)	14 (2.0%)

Table 10, having scuffles with family members or other inmates, assuming that authorities will solve everything, breaking confinement and defying lockdown were seen to increase in the study population.

4. Discussion

Mental health experts and sociologists world over are expressing legitimate concerns about the rise of psycho-social problems like suicide, exploitation of weaker sections of society in the form of domestic violence, workplace harassment, withholding of dues to name a few.

To make matters worse loads of unclassified and inauthentic information is turning people into anxiety capsules that could explode at any moment. Kashmiri population is posed with substantial challenges due to frequent and unplanned lockdowns over the last decade. Social isolation, confinement, absence of viable home schooling options, loss of usual routine, reduced social and physical contact with peers frequently cause boredom, frustration, and a sense of isolation from rest of the world. Adverse effects manifest in the form of harm to parents being forced from work to childcare, to adolescents and youth being driven from productivity to drug and electronic addiction, to child welfare and nutritional problems targeting underprivileged children for whom free education and school meals are important. The distress gets exacerbated as parents face hardships disciplining and self-educating children in the wake of snapping electronic and other modes of communication. In such a scenario care of elderly and psychiatric patients takes a backseat. Rising suicides are

another indicator that mental health issues merit well-structured mental health studies in this population.

In current scenario individuals need to cope with COVID-19 pandemic as well as its resultant phenomena. Coping mechanisms as an effort to face adversity help restore psychological homeostasis by reducing conflict resulting from sudden changes in internal or external reality and the importance of such defences to mental health has long been illustrated. While adaptive coping strategies can provide a mental time-out to adjust to sudden changes in reality maladaptive strategies are linked to poor health related quality of life. It goes without saying that understanding these mechanisms can facilitate the transmutation of less adaptive defences into more adaptive defences. A detailed analysis of coping styles adopted by respondents was beyond the scope of this study, however, seven questions in second section were formulated to assess respondents broadly for approach or avoidance coping style. The purpose was to apply cognitive sense for a conscious raising effort in the short term individual basis and formulate recommendations in a long term collective basis thereby recommending adaptive and cautioning against maladaptive coping styles. Well-structured studies addressing psychiatric morbidity in all walks of life is the need of the hour and our study is a preliminary step in that direction.

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