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A Cross Sectional Study to Assess Stress, Anxiety and Depression Among Suspected Covid 19 Patients Attending Covid-19 OPD at Aiims, Rishikesh, Uttarakhand

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ABSTRACT

BACKGROUND: The COVID-19 pandemic had a great effect on the mental health of the public. Thus, it becomes a priority to assess and monitor the mental health of the public during such crisis and ensure their mental well-being. The aim of this study is to estimate the prevalence of depression, anxiety, and stress among patients visiting COVID-19 screening OPD at AIIMS, Rishikesh and to assess the coping strategies used by the patients.

METHOD: A descriptive cross-sectional survey was conducted and 302 participants were recruited through a total enumerative sampling technique. Previously validated DASS-21 was used to assess stress, anxiety, and depression, and the COPE scale was used to assess coping strategies.

RESULTS: The mean age of the participants was 40.35. The most of the participants were male (60.9%). Around 77.22% of participants were recommended by other departments for RTPCR sampling. Only 3 participants reported mild stress while no participants reported anxiety and depression on the DASS-21 scale.

CONCLUSION: Along with the physical health, COVID 19 also affect psychological health of the individuals. Thus it is important to take necessary action to preserve mental health of the public. The results from the study adds to the growing literature indicating influence of COVID 19 on mental health.

INTRODUCTION

During December 2019, unusual pneumonia cases were reported in the city of Wuhan, China, which were caused by a new Corona virus (COVID-19).[1] The number of cases had continued to escalate exponentially within and beyond Wuhan, spreading all over the world. Later, World Health Organization (WHO) declared the COVID-19 outbreak a public health emergency of international concern.[2,3]

Having knowledge about the COVID-19 virus, the disease it causes, and how it spreads, is the best way to slow down and prevent its spread. The primary mode of transmission of the COVID-19 virus is through droplets of saliva or discharge from an infected person's nose during coughing or sneezing. That

is why it is advisable to follow respiratory etiquette.[4]

COVID-19 has also shaken people's mental health along with the physical impacts. A wide range of psychological outcomes such as sleeping problems, stress, anxiety, guilt, and depression has been noticed during this outbreak.[5]

A usual experience of people during any epidemic or pandemic is fear of getting infected with the disease, leading to the development of anxiety, stress, and depression. Any event/situation that threatens or shakes our homeostasis leads to emotional or physical tension known as stress.[6]

The ongoing pandemic has instilled a fear of getting the disease and losing close ones in individuals, which are causing anxiety. As so many restrictions have been imposed to avoid COVID-19, people are unable to move freely, enjoy life to the fullest, or live life as they were doing in the past. This has made their life somewhat stagnant, leading to feelings of boredom, frustration, and disinterest. These all can be viewed as symptoms of depression.

Keeping in mind the concerns regarding psychological distress rising around the globe, Xiang et al. have stressed timely action on mental health during the Covid-19 pandemic.[7] To address psychological issues that may arise during the pandemic, World Health Organisation has also issued public interest guidelines addressing the same.[8]

To address the current gap in the literature regarding the psychological impact of Covid-19, this study aims to estimate the prevalence of depression, anxiety, and stress among patients visiting COVID-19 screening OPD at AIIMS, Rishikesh, and the coping strategies used by them.

METHODS

Study design and participants

A descriptive cross-sectional survey was conducted, from 25/10/2020 to 25/11/2020 during covid-19 outbreak. A total enumerative sampling technique was employed to collect data from 302 participants. To assess stress, anxiety, and depression DASS-21 scale was used. The COPE scale was used to measure the coping strategies used by the participants during the COVID-19 outbreak.

Ethical clearance was obtained from the institutional ethical committee before conducting this study (AIIMS/IEC/20/764). Prior to data collection, informed consent was obtained from each participant and they were ensured that their participation do not pose any risk to them and is voluntary in nature. Anonymity and confidentiality of data was ensured to the participants.

Study tool

The first part of the survey included information regarding the socio-demographic profile of the participants, their medical history, and the reason for and type of hospital visits. The second part of the survey was set to assess anxiety, stress, and depression by using the previously validated tool Depression, Anxiety, and Stress Scale (DASS 21). It is 21 items 4-point Likert scale.

Dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia were items that were assessed by the depression scale. Similarly, in the evaluation of autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect, an anxiety scale was used. The stress scale was sensitive to levels of chronic nonspecific arousal. It assessed difficulty relaxing, nervous arousal, being easily upset/agitated, irritable / over-reactive, and impatient. The scores for depression, anxiety, and stress were calculated by adding the scores of the relevant items it contained.

Table 1: The recommended cut-off scores for the DASS-21 conventional severity labels (normal, mild, moderate, severe, and extremely severe) were as follows[9]:

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

The third section of the survey was to assess the coping strategies used to minimize the distress associated with negative life experiences. The Brief-COPE is a 28-item 4-point Likert scale. BRIEF-COPE measured effective and ineffective ways to cope with a stressful life event. BRIEF COPE assessed various facets of coping such as self-distraction, denial, behavioural disengagement, substance use, emotional support, venting, humor acceptance, self-blame, religion, active coping, use of instrumental support, positive reframing, and planning.[10]

The scores of BRIEF COPE can determine someone's primary coping styles on three subscales indicating the level to which the respondent has been engaging in that coping style:-

- Problem-Focussed Coping (Items 2, 7, 10, 12, 14, 17, 23, 25): it includes coping strategies such as active coping, positive reframing, use of informational support, and planning, and these coping strategies aimed at changing the stressful situation. A higher score indicates psychological strength and a practical approach to problem-solving and it is predictive of positive outcomes.
- Emotion-Focussed Coping (Items 5, 9, 13, 15, 18, 20, 21, 22, 24, 26, 27, 28)
  : it includes facets of venting, use of emotional support, humour, acceptance, self-blame, and religion. A high score indicates coping strategies that are aiming to regulate emotions associated with the stressful situation but high or low scores are not uniformly associated with psychological health or ill health, .
- **Avoidant Coping** (Items 1, 3, 4, 6, 8, 11, 16, 19)
  Characterized by the aspects of self-distraction, denial, substance use, and behavioral disengagement. A high score showed physical or cognitive efforts to disengage from the stressor. Low scores indicated adaptive coping.

Informed consent was taken prior to data collection,. During the procedure, all the participants were informed that no individual results or information that could identify them as study participants would not be published. Further, they were informed of the voluntary, anonymous, and confidential nature of the data provided and of the possibility of withdrawing at any time, without having to give any explanation. The questionnaires were completed by the participants and it took them approximately 10 min to complete. The study was carried out in line with the ethical criteria set by the institutional ethical committee.

Statistical analysis:

Data analysis was done by using SPSS software (IBM, SPSS Statistics, Version 24). Descriptive statistics were used wherever required which included frequencies (n), percentages (%), means, standard deviations (SDs), medians, and interquartile ranges (IQRs). Inferential statistics approaches were utilized to identify differences in demographic variables; these approaches included independent samples t-tests and variations across demographic sub-groups. Further parametric and non-parametric correlation tests such

as Mann Whitney, Kruskal Wallis, and Spearman's Rho test were used to measure the correlation between variables. The statistical significance level was set at $p < 0.05$ to reduce the risk of type I error.

RESULT

The results of this study depict that the mean age of the participant was 40.35 years (S.D-14.99). The majority of the participants were male (60.9%) and married (70.2%). Approximately 64.2% of participants were from urban areas, 92.1% were Hindu by religion and 77.2% were formally educated. 66.9% of participants visited COVID OPD for the first time and 69.8% of them were recommended testing by other departments. Only 33.1% of participants visited COVID OPD multiple times and among them, 93% were referred from other departments for testing. Only 21.3% of participants were symptomatic at the time of their visit. Only 22.8% of the participants were having pre-existing medical or psychiatric illnesses and among them, 71% were diagnosed with cancer.

TABLE 2: Sample Characteristics (n=302)

Variable		n (%)	
Gender	Male	184 (60.9)	
	Female	118(39.1)	
Religion	Hindu	278(92.1)	
	Muslim	20(6.6)	
	Sikh	4(1.3)	
Marital status	Married	212(70.2)	
	Unmarried	83(27.5)	
	Divorced	1(0.3)	
	Widowed	6(2)	
Residence	Rural	108(35.8)	
	Urban	194(64.2)	
Educational	Informal	69(22.8)	
	High school	76(25.2)	
	Intermediate	57(18.9)	
	Graduate	89(29.5)	
	Other	11(3.6)	
No of visit	First	202(66.9)	
	Multiple visits	100(33.1)	
		First	Multiple
Reason of visit	Referred from other dept	141(69.8)	93(93)
	Traveller	12(5.9)	4(4)
	Symptomatic	39(19.3)	2(2)
	Contact with COVID positive patient	6(3)	1(1)
	Other	4(2)	
History of substance use	No	249(82.5)	
	Yes	53(17.5)	

Specify substance	Alcohol	31(58.5)
	Tobacco	3(5.7)
	Tobacco + Alcohol	19(35.8)
Pre-existing illness	No	233(77.2)
	Yes	69(22.8)
Specify illness	Cancer	49(71)
	Other	20(29)

This study shows that on DASS 21 Scale, out of 302 participants, only 3 reported mild stress, and none reported anxiety and depression.

Table 3: Prevalence of Depression, Anxiety and Stress (N=302)

Level	Stress n(%)	Anxiety n(%)	Depression n(%)
Normal	299(99)	302 (100)	302 (100)
Mild	03(1)	-	-
Moderate	-	-	-
Severe	-	-	-
Extremely Severe	-	-	-

Table 4 shows that on the BRIEF COPE scale females had better emotion-focused coping than their male counterparts (p=0.0001). The Result depicts that with increasing age, emotion-focused coping (p=0.0001) and avoidant coping (p=0.004) was used more in stressful situation. Further, married participants were using avoidant coping more than unmarried ones (p=0.001). The majority of the urban participants were using avoidant coping (p=0.019). Homemakers were using emotion-focused coping more in order to regulate stressful life events (p=0.007)

Table 4: Coping Strategies used during COVID- 19 (N=302)

Factor	Problem Focused Coping			Emotion-Focused Coping			Avoidant Coping		
	Mean rank	Z value	*p* value	Mean rank	Z value	*p* value	Mean rank	Z value	*p* value
Gender*		-.776	0.438		-3.978	.0001		-.547	.584
Male	148.49			135.62			149.44		
Female	156.19			176.26			154.72		
Age* **	-.019	.747		.209**	.0001		.165**	.004	
Education#**		.536	0.970		1.034	.905		9.502	.050
Informal	154.59			149.56			170.76		
High school	150.49			158.57			158.20		
Intermediate	156.35			152.85			150.49		
Graduate	147.35			147.96			131.83		
Other	146.59			136.50			148.77		
Marital status#	151.32	0.11	.994	148.73	2.740	.254	162.26	14.562	0.001

Married Unmarried Widow	150.17 151.00			152.71 207.42			126.39 93.58		
Residence# Rural Urban	148.78 153.02	1.76	.675	158.64 147.52	1.143	.285	166.25 143.29	5.463	.019
Occupation# Government Homemaker Private job Self employed Farmer Student	138.18 158.81 154.48 172.76 142.66 143.05	4.138	.530	115.71 174.96 146.26 136.65 138.65 164.60	15.914	.007	138.12 152.94 152.36 124.41 182.05 143.49	10.188	0.070
Number of visit* First Multiple	149.75 155.04	-.514	.607	153.76 146.94	-.644	.519	149.70 155.14	-.545	.586
Reason of visit# Referred from other dept Traveler Symptomatic Contact with covid positive Other	151.17 169.09 151.35 113.57 168.38	2.288	.683	155.52 75.03 157.66 123.43 208.38	15.638	.004	155.79 126.69 136.41 144.43 166.88	3.703	.448
Family member working in health sector* No Yes	151.80 148.06	-.209	.835	158.33 72.44	-4.660	.0001	152.70 137.62	-.866	.386
Preexisting illness* No Yes	148.81 160.59	-1.022	.307	139.99 190.36	-4.242	.0001	142.77 180.98	-3.408	.001

Note: *: - Mann- Whitney test, #: - Kruskal- Wallis test, ***:- spearman's rho, **:- Correlation is significant at the 0.01 level (2-tailed).

It was found that Emotion-focused coping was related to stress (p=0.0001), anxiety (0.0001), and depression (0.0001). Avoidant coping was significantly associated with stress (p=0.0001), anxiety (p=0.002), and depression (p=0.0001). Participants having preexisting medical illness had better emotion-focused coping (p=0.0001) and avoidant coping (p=0.001).

Table 5: Correlation of stress, anxiety and depression with coping strategies (n=302)

Spearman's rho		Stress	Anxiety	Depression
Problem Focused Coping	Correlation Coefficient	.029	-.020	.025
	Sig. (2-tailed)	.615	.728	.660
Emotion-Focused Coping	Correlation Coefficient	.301**	.271**	.290**
	Sig. (2-tailed)	.0001	.0001	.0001
Avoidant Coping	Correlation Coefficient	.261**	.175**	.245**
	Sig. (2-tailed)	.0001	.002	.0001

DISCUSSION

This study was conducted in order to assess anxiety, stress and depression among patients visiting COVID-19 OPD. It aimed at assessing coping strategies used by them at the time of COVID-19. The study revealed that only 3 out of 302 participants had stress during their visit to COVID-19 OPD. On DASS 21 scale none of the participants reported anxiety and depression. These findings were contrary to the results of previous studies conducted by Turna Jasmine et al, in which criteria for generalized anxiety disorder was met by 31% of study participants. In the same study, 29% participants reported major depressive disorder and significantly high levels of stress was reported by 63% of the participants[11]. Likewise, Omari OA et al reported that 38.1% of participants had stress during the COVID-19 pandemic[12]. Salari N et al conducted a systematic review and meta-analysis on the Prevalence of stress, anxiety, and depression among the general population during the COVID-19 and they reported that the prevalence of depression, stress and anxiety were 29.6, 31.9 and 33.7%, 29.6% and 31.9% respectively.[13] Eman Alnazly in his study reported that 40% of participants had severe depression, 60% reported extremely severe anxiety and 35% reported severe distress.[14] Another study on COVID-19 which was conducted on 343 Turkish people reported 23.6% depression rates and 45.1% of participants experiencing anxiety.[15] Khademian et al conducted a similar study in Iran which found normal levels of stress (36.6%), anxiety (57.9%), and depression i.e. 36.6%, 57.9%, and 47.9% respectively among 1498 participants.[16] The result from our study was contrary to the findings of the above-mentioned studies because in the current study, the majority of the (77.4%) participants were recommended by other departments for RTPCR testing. It was because of the institutional policy which made RTPCR testing mandatory before conducting any procedure or admission of patients so the primary concern of testing was other health issues, not COVID-19.

The present study demonstrated significant association of stress, anxiety, and depression with avoidant coping which was as stated in the study conducted by Narendra Kumar MK et al. In their study they reported association of avoidant coping with the development of depression and anxiety.[17] Similar findings were also noted among Malaysians and in a diverse sample of U.S. adults during the COVID-19 pandemic.[18,19] Studies in adolescents have depicted significant association of avoidant coping strategies with depression and anxiety.[20] Likewise, study of pregnant minority women reported a correlation between avoidant coping and depression in pregnancy.[21] Although, avoidant coping strategies in short term can reduce stress but in the long term it may lead to more distress if we consider the ongoing COVID-19 pandemic as a chronic uncontrollable stressor.[17]

There are a few limitations to this study. Being a cross-sectional study, it could only identify associations between variables making the study of causality implausible. Additionally, as the study was

limited to a single tertiary care hospital having a limited catchment area, the prevalence or findings of the study population might not represent all the Covid-19 patients. Furthermore, the time frame of the study was also limited thus making it less accurate considering the time frame of the ongoing pandemic posing different challenges in different time frames.

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