

Mental Well -Being of Medical Students (Interns) During COVID-19 Lockdown and Coping Methods

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ABSTRACT

The health care crisis under COVID-19 had unparalleled consequences. The whole personnel involved in the management of COVID infected persons suffered a lot in term of burnout, stress, financial hardship, sleep disturbance, anxiety, depression, and suicide in addition to risk of infection while treating such patients. Isolation and self-neglect may eventually result in anger, irritability and mood instability. Further, the daily contact with patients and the scarcity of resources are factors that contribute to the overall stress that healthcare workers undergo during this time. The present study highlights the major psychological crisis faced by the undergraduate MBBS student (Intern) who has to undergo compulsory clinical rotational postings in management of COVID19 infected patients.

Key words: COVID19, health professional-Intern, psychological crisis, career outcome

BACKGROUND

Covid-19 has emerged as the largest and most severe pandemic since the 1918 influenza pandemic and caused significant mortality, morbidity, and negative psychological impact (Taubenberger, et al., 2006). Healthcare workers are particularly exposed to the risk of becoming infected and contaminating people in their environment and it is a significant cause of stress. During

the COVID-19 pandemic, there was an increased prevalence of various psychosocial problems which include anxiety, fear, depression, sleep disturbance, somatization, and OCD disorders among health care workers, which were especially prevalent among individuals working in high-risk units such as emergency units and ICU. (Lu W et al.2020, Zhang WR et al, 2020, Liu CY, et al., 2020). The various factors contributing to the negative psychological impact are the unpredictable course of infections (Zandifar A, et al.,2020), personal restrictions (including complete national lockdown) and sudden changes, the inability to plan, and constant concerns about the health of individuals and their relatives (Khan S, et al.,2019) economic impact and financial losses (Pfefferbaum B, et al.,2020) to name a few. There is a large body of literature suggesting that medical students have higher rates of psychological distress and mental illness compared with the general population (Rotenstein LS, et al., 2016). Hospitals, clinics, and community services are where future doctors learn as well as develop their professional identities and develop their orientation to patient-focused care which shapes their practice (Dorman T, et al.,2015). The COVID-19 pandemic has had profound impacts on medical education globally. During the COVID-19 pandemic in India, the patients requiring hospitalization were admitted to COVID facilities comprising mainly of medical colleges and teaching

hospitals of which interns trained in these colleges and hospitals formed an important part of healthcare personnel. The training and teaching of interns during this period were also affected as the majority were trained to care for the persons with COVID-19. The suddenness of added workload, fatigue, and sleep deprivation along with worries about future careers during COVID-19 due to a mismatch of health personnel and patients with COVID-19 can exacerbate the existing psychological issues among medical interns. The lockdown imposed also had a toll on the psychological health of interns. Given the expected impact of the situation on this community, it is crucial to analyze the experience of interns during the COVID-19 crisis and lockdown to develop measures and implement psychological interventions properly adjusted to their condition. The study aimed to: (a) determine the impact of COVID-19 on the mental well-being of interns; (b) determine specific concerns of students and (iii) determine activities and strategies used by students to help with the COVID-19 situation.

MATERIAL AND METHODS

The study was cross-sectional (pre-post comparison). A total of 50 interns who were working and allotted duty during Covid-19 lockdown in AIIMS Patna and fulfilled inclusion criteria were taken as study subjects which included interns posted at ICU and general ward setting where patients with COVID-19 were admitted and involved in their management for minimum 3 months. Admission for psychiatric treatment in last 3 months, current treatment for psychosis, current substance abuse except for tobacco and occasional alcohol use or treatment started for it in last 3 months, current treatment for mood disorder or not maintaining well for at least 3 months, significant functional impairment due to any medical condition, significant physical injury, contracting COVID-19, grieving for the loss of any loved one, any other major stressful event during lockdown or study period, refusal to consent for the study were

the main exclusion criteria. The Simple random selection method was used. A semi-structured questionnaire was used for demographic details. Self-administered questionnaire based on the Likert scale to compare thoughts, feeling, and behavior during and before lockdown scored from 0-3, to know causes of stress and activities that were helpful during lockdown to relieve stress scored from 1-3, and general behavior of the participants during stress scored from 1-5 were used. In the scoring of the factors leading to stress and of activities that were helpful during lockdown to relieve stress, those on the Likert scale 2 and 3 were clubbed together. Depression, Anxiety, and Stress scale items -21 (DASS-21) and Coping Strategies Inventory Short-Form (CSI-SF) was administered for 2 time periods (pre covid-19 lockdown period retrospectively and during covid-19 lockdown period). The questionnaires were self-administered by the participants. The Depression, Anxiety, and Stress Scale - 21 Items (DASS-21) is a set of three self-report scales designed to measure the emotional states of depression, anxiety, and stress. Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. 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 nonspecific arousal. It assesses difficulty relaxing, nervous arousal, being easily upset/agitated, irritable / over-reactive, and impatient. Scores for depression, anxiety, and stress are calculated by summing the scores for the relevant items. Scores on the DASS-21 were multiplied by 2 to calculate the final score. The scores are labelled as mild, moderate, and severe for depression, anxiety, and stress based on the final scores. CSI-SF had 16 items to assess the general behavior pattern of the study participants during the stress. Out of 16 items, the first four items were related to

problem-focused engagement (PFE), the next four items were related to problem-focused disengagement (PFD), the next four items were related to emotion-focused engagement (EFE), and the last four items were related to emotion-focused disengagement. The coping theory is defined as “constantly changing cognitive and behavioral efforts to manage specific external and internal demands that are appraised as taxing or exceeding the resources of the person” (Folkman S, et al., 1984). The coping theory is classified into two independent parameters namely; focus-oriented theories and approach-oriented theories. While the first recognizes peoples’ internal resources and mental capacities for evaluating how competently they can adapt to a situation, the latter is concerned with how concrete the coping mechanisms are (CarverCS, et al.,2010) One of the most frequently used focus-oriented approaches was provided by Ebata and Moos. Active (positive or functional) and avoidant (negative or dysfunctional) coping approaches were defined based on whether a person’s response is directed towards the stressor or away from it (Ebata AT, et al., 1994). All the data were analyzed using SPSS version 22. Normally distributed continuous variables were presented as mean with standard deviation, whereas non-normally distributed continuous variables or ordinal variables were presented as Median with interquartile range. Categorical variables were presented as frequency (%). Spearman’s rank correlation was estimated between pairs of depression, anxiety, and stress, considering the non-normality of the scores. Paired t-test was applied to test the difference between pre and post-scores of the individuals. Mann-Whitney U-test was applied to test the median of scores related to demographic variables such as gender, family type, and family history.

RESULTS

In our study 14 female and 36 male interns participated and they were asked to fill out a semi-structured questionnaire that collected sociodemographic details, causes of stress, and activities that helped during stress along with the DASS-21 and CSI-SF questionnaires.

The mean age of the study subjects was 23.4 years, the majority lived in nuclear families (80%) and had no family history of psychiatric illness (92%). (Table 1)

Table-1: Socio-demographic characteristics of Interns undergoing compulsory clinical posting (N=50)

Variables	Categories	N	%
Gender	Female	14	28
	Males	36	72
Family	Nuclear	40	80
	Joint	10	20
Family History	Yes	46	92
	No	4	8
Age [Mean(SD)] Years: 23.38(0.967)			

The various components such as depression, anxiety, and stress obtain through DASS 21 and its scores were double for better understanding and categorization. (Table 2) Thirty-three (66%) of the study subjects had depressive symptoms ranging from mild to extremely severe levels; 35 (70%) of the study subjects had anxiety symptoms ranging from mild to extremely severe, and 31(62%) of the study subjects had stress (at various levels while treating the COVID19 patients) ranging from mild to extremely severe. Out of the total, 26% had severe/extremely severe depressive symptoms, 40% had severe to extremely severe anxiety symptoms and 24% had severe to extremely severe stress. Overall, a high proportion, more than 60%, of the subjects had depression symptoms, anxiety symptoms, and stress at the time of the survey. (Table 2)

Table-2: Distribution of DASS 21 after doubling the scores reported by the Interns

DASS Category	Depression		Anxiety		Stress	
	Score Range	N (%)	Score Range	N (%)	Score Range	N (%)
Normal	0-9	17(34)	0-7	15(30)	0-14	19(38)
Mild	10-13	6(12)	8-9	3(6)	15-18	5(10)
Moderate	14-20	14(28)	10-14	12(24)	19-25	14(28)
Severe	21-27	10(20)	15-19	7(14)	26-33	10(20)
Extremely severe	28+	3(6)	20+	13(26)	34+	2(4)

The correlation coefficients (r) between depression and anxiety, depression and stress, and stress and anxiety were 0.767, 0.672, and 0.738 respectively, and were found to be significant (p<0.01). (Table 3)

Table-3: Correlation between Depression, Anxiety, and Stress scores (DASS 21) (N=50)

Correlations Matrix			
	Depression	Anxiety	Stress
Depression	1		
Anxiety	0.767**	1	
Stress	0.672**	0.738**	1

** Spearman's Correlation is significant at the 0.01 level (2-tailed).

Nearly 58% of the participants had PFE, 80% for PFD, 70% for EFE, and 80% for EFD. The problem-focused engagement was found to be the lowest among the participants.(Table 4)

Table-4: Distribution of General behavior of the Interns using Coping Strategies Inventory short form.

Coping Strategies	Score Range	Mean	Std. Deviation	% equal to above mean
Problem focused Engagement (PFE)	4-20	11.7	2.5	58%
Problem focused Disengagement (PFD)	4-20	12.8	2.7	80%
emotion focused engagement (EFE)	4-20	12.3	2	70%
Emotion focused disengagement (EFD)	4-20	13.4	2.5	80%

A total of 21 questions scaled from 0 (never) to 3(almost always) related to thoughts, feeling, and behaviors were self-administered and the mean score was compared before and during the lockdown. A

highly significant change in behavior was observed between before and during the lockdown period among the study participants (p-value< 0.001) (Table5).

Table-5: Feelings /Thoughts/Behaviour of Interns before and during Lockdown (N=50)

Feelings/Thoughts/Behaviour before and during Lockdown	Before Lockdown	During Lockdown
Score [Mean (SD)]	15.6(6.9)	24.36(12.7)
P Value (by Paired T test) <0.001*		

The top 5 themes that were most stressful during lockdown for the interns as revealed from the questionnaire were not liking the type of duty assigned in covid (96%),

followed by problems due to lockdown (90%), boredom at work (88%), worries regarding academics (88%) and worries for loved ones(86%) (Table 6).

Table-6: Prevalence of various themes of stress faced by the Interns during Lockdown

Question	Prevalence(N=50)	%
Fear of getting COVID-19	36	72
Excessive Workload/ Exhaustion/ Lack of sleep	34	68
Not liking the type of duty assigned in COVID-19	48	96
Boredom at work	44	88
Not able to perform your duty properly	32	64
Poor Physical health/ Medical Illness	30	60
Poor Psychological health/ Mental Illness	35	70
Being worried for Loved Ones	43	86
Family Problems	23	46
Problems in Personal relationships	26	52
Worried about Academics (Current or Future)	44	88
Financial Issues	19	38
Problems due to Lockdown (Restrictions/ Away from loved ones /Lack of enjoyment)	45	90
Others	16	32

The top 5 activities that helped to cope the lockdown stress were talking to family/friends/colleagues (96%), watching TV/ listening to music/songs(94%),helping

others/colleagues(94%),pursuing hobbies(90%)and Internet/ Mobile Use (Videos/ Social Media/ Gaming)(86%). (Table7).

Table 7. The proportion of activities that helped the Interns to copped with the stress during lockdown

Activities	N=50	%
Talking to Family/ Friends/ Colleagues	48	96
Pursuing hobbies	45	90
Exercise/Sport/Dancing/ Indoor games	39	78
Helping others/colleagues	47	94
Watching less News	36	72
Understanding other people is much more trouble than me	31	62
Internet/ Mobile Use (Videos/ Social Media/ Gaming)	43	86
Watching TV/ Listening to music/songs	47	94
Relaxation techniques/ Yoga/ Meditation	37	74
Prayer/ Religious or Spiritual Activities	30	60
Consulting Mental Health professional (Formal/Informal)	21	42
Substance Use (Alcohol, Tobacco, Other Drugs, Medications)	20	40
Others	15	30

DISCUSSION

Mental stress is the main environmental risk factor for psychiatric illnesses and a state of prolonged sustained stress can increase the likelihood of depression and other mental disorders (Zhu J , et al., 2020). Investigating the mental health of medical interns is important for planning and executing strategies to prevent and deal with potential psychiatric disorders and, consequently, better performance in professional activity. Results of this study have shown that nearly two-thirds of interns are currently experiencing mild to severe levels of psychological distress, and there has been a significant change in feelings, thoughts, and behavior during lockdown among students since the onset of the COVID-19 pandemic. The findings of the study resonate with studies in other parts of the world. (Lyons Z, et al., 2020, Ma Z et al., 2019). Coping is defined as the effort exerted by the individual to deal with demands from the environment, to make those demands more tolerable, and reduce stress and conflict. Coping is dependent on personality and perceptions about life experiences and the strategies adapted can differ by individuals. However, overall, the main aim is to reduce stress and reach a balanced state of functioning (Lazarus R, et al.,1984). Studies have shown that emotion-focused strategies of coping tend to be associated with more psychological problems, whereas, problem-

focused strategies or active coping tend to be linked to more well-being (Braun-Lewensohn O, 2015). The current study shows that the majority of participants used more avoidant coping strategies than active strategies to cope with stress (disengagement vs engagement), though a significant proportion of them used active coping strategies to escape from stress. This goes in contrast with other studies conducted in Nepal, Malaysia, Pakistan, and Saudi Arabia where medical students used more active coping strategies than avoidant strategies to cope with stress, though a significant proportion of them had used avoidant coping strategies. (Sreemareddy CT, et al., 2007, Al Dubai SA, et al, 2011, Shaikh BT, et al., 2004, Fares J, et al., 2016, Bacchi S, et al.,2017). The major themes that led to stress during lockdown for interns were similar to students around the world during the pandemic period (Lyons Z, et al., 2020, Ma Z et al., 2019). sIn many of the studies involving students' academic concerns and worry for their loved ones and families emerged as being the major stressor during COVID 19 pandemic. This was further exaggerated due to physical isolation from loved ones and running of online classes and the disruption of first-hand practical experience. In the medical student literature, factors that help alleviate stress include resilience training , (Bacchi S, et al.,2017); having social support and emotional

resilience (Bore Met al., 2016); proactively participating in self-care activities such as exercise, good diet, and engaging in fulfilling interpersonal relationships (Ayala E, et al., 2018); and having personal character traits such as joy, self-efficacy, and optimism (Heinen , et al., 2017). These factors and traits in a student can prepare him to cope with the adverse situations and guard his mental health. The students in our study used their resources to stay socially connected through difficult times by talking to friends, and families and using social media, and also pursuing hobbies to keep themselves engaged. However, while many students could adopt protective strategies and behaviors in our study (58% PFE), some were vulnerable to ongoing stress caused by the pandemic and resorted to behaviors that could negatively impact their mental health (substance abuse-40%). In other studies, it has been reported that high stress affects self-regulatory behavior and can be associated with an increase in substance abuse among students, but not necessarily with the emergence of addictions to new substances (Baumeister RF, et al.,2015) Mental illness can affect students' motivation, concentration, and social interactions which are the key ingredients for success in higher education (Unger K, et al., 2007). This highlights the need to address the mental health issues of interns and develop measures to address their concerns, and implement psychological interventions properly adjusted to their condition. There is also a need for changes in the existing curriculum so that concerns of students about their duty and academics be minimized. The major limitation of the study is its cross-sectional nature, and small sample size, in addition, common limitations of self-report surveys apply, including the difficulty of calculating the response bias.

This study has provided a glimpse into the plight of interns during the lockdown and an opportunity to lend them a helping hand via interventions focused on and tailored to their condition. Future studies can focus on the long-term effect of the pandemic on the lives

of these students and the effectiveness of corrective measures taken to address their condition.

Declaration by Authors

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