

To Study the Distress, Anxiety, Depression, and Sleep Effects of the COVID-19 Pandemic on Essential Workers

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Abstract

Essential care workers like police personnel, social workers, and office and administrative staff of health institutions are also at increased risk of coronavirus disease 2019 (COVID-19) exposure along with healthcare workers. The present study aims to estimate the distress, anxiety, depression, and sleep impact of COVID-19 pandemic on essential workers through an online survey. This cross-sectional study (included 369 participants) was conducted in Chandigarh through an online survey using three psychological scales: Peritraumatic Distress Inventory (PDI), Insomnia Severity Index, and Depression Anxiety Stress Scale. Three-hundred-sixty-nine frontline warriors from hospital and community settings were included in the study. The respondents include police personnel (274; 73.66%), office staff (24; 6.45%), social workers (53; 14.24%), and media staff (21; 5.65%). Maximum distress was reported by media/transport officials on duty (85.7%). The majority of them scored high (>14), and slightly less than one-fourth (23.8%) scored significantly abnormal (>23) on PDI. About 42.9% reported moderate insomnia, 52.4% exhibited severe anxiety, and 33.3% of media/transport participants reported severe depression. Psychological morbidity is high in media/transport and social workers working in the community during the COVID-19 pandemic.

Keywords: Anxiety, COVID-19, depression, essential worker, insomnia, stress

INTRODUCTION

A new public health emergency called coronavirus disease 2019 (COVID-19) has put the global economy and public health at danger. The 2019-nCov, also known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes COVID-19, spread quickly from Wuhan City in the Chinese province of Hubei to India and the rest of the world.^[1] The first three instances of COVID-19 among students from Kerala who had just returned from Wuhan University, China, were reported by India on January 30, 2020.^[2]

Outside hospitals, key professionals such as police officers, sanitation workers, media, and transport staff are tasked with maintaining lockdown limitations, law and order, and the food supply chain. Even without dealing with additional pandemic challenges, stress, and uncertainty, police officers experience mental health issues at a higher incidence than the overall population.^[3]

Many studies evaluate the mental health of frontline health care providers (HCWs) during pandemics, but there are not many who address the psychological effects of COVID-19 on crucial workers. Most of these studies compare the mental health of HCWs and non-medical workers, emphasizing HCWs.^[4] In order to comprehend the effects of COVID-19 on the mental health of our crucial employees, including police officers, media personnel, social workers, and social workers, this study was designed.

SUBJECTS AND METHODS

After receiving approval from the institutional ethics committee (see IEC/2020/382-722) and with the participants'

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informed agreement, the current study was carried out over the course of 2 months (May–June 2020). The study from Mohali comprised a total of 369 frontline workers who were on duty (office staff: 24, police personnel: 274, security personnel: 50, and media/transport staff: 21). The essential workers received an email and a Whats App message with a link to a Google form. Police, personnel, media/transport authorities on duty, administrative staff, social workers working in the community, and personnel were all essential workers. The survey was divided into four sections: demographic information and current address, Peritraumatic Distress Inventory (PDI), Insomnia Severity Index (ISI), and Depression Anxiety Stress Scale (DASS) questions.^[5-7] There were surveys accessible in Hindi and English using Google Forms.

The gathered information was moved to an Excel database and put via SPSS Statistic 23 analysis (IBM SPSS Statistics, New York, United States). The analysis included the Chi-square test/Fischer-exact test, Mann–Whitney test, Kuruskal Wallis test, and *post hoc* analysis. The data were presented as frequency (%), median, IQR, and comparisons across several categories. Additionally, data were generated and employed for analysis of the relationships between clinical and socio-demographic factors with the bivariate co-relation (Spearman).

RESULTS

A total of 369 frontline warriors from out-of-hospital settings were included in the study. The demographic details of the participants are presented in Table 1.

Distress and insomnia problems among essential workers

Overall distress was significantly high among media officials on duty (median 18.00; IQR 9.50), followed by social workers (median 12.00; IQR 15.50), and least by police staff (median 4.00; IQR 9.00), on duty during COVID-19 pandemic. Media officials also scored significantly high on sub-domains of PDI than the other three groups (life threat, loss of control, anger and helplessness, and guilt and shame). Results in detail are presented in Table 2

A propensity to develop PTSD (PDI score >14) was seen in 78 (21.1%) respondents, and only 17 (4.6%) had a PDI score >23 among all the participants. Further profession-wise distress was also explored, and the majority of media staff (76.2%) and about 40% of social workers, respectively, had PDI scores ≥ 14 . Overall, 97 (26.1%) of respondents had insomnia (ISI score >7), which was significant among all categories except office/administration staff [Figure 1].

Stress, anxiety, and depression among essential workers

Overall mild (8.4%) to moderate (7.6%) stress, moderate (45.3%) to severe (18.7%) anxiety, and mild to (47.2%) moderate (19.8%) depression were observed among all essential workers.

Profession-wise analysis revealed that 4.2% of administrative/office staff experienced mild to severe stress, 10.2–6.2% of police personnel experienced mild to moderate stress, 8–4% of social workers experienced moderate to severe stress, and media officials reported moderate (28.6%) to severe (9.5%) stress [Table 3].

Association among demographic and clinical variables across all the groups

Age was found to have a significant negative association with distress and insomnia. Gender has a significant positive association with distress, insomnia, stress, and depression. Education and measures of distress, insomnia, stress, and depression had significant positive associations. Occupation was found to be positively associated with distress, insomnia, anxiety, and depression. Distress had positively associated with insomnia, stress, anxiety, and depression [Supplementary Table 1].

DISCUSSION

The current investigation understood how the COVID-19 pandemic affected roughly 369 essential community workers in terms of their emotional, behavioral, and sleep health. The study evaluated the effects of the viral illness based on factors such as

Table 1: Socio-demographic profile of participants

	Administrative/Office (n=24)	Police (n=274)	Social Worker (n=53)	Media (n=21)
Age	35.41 (8.55)	43.85 (9.86)	35.50 (7.21)	38.28 (7.29)
Gender				
Male	11 (45.8%)	142 (51.8%)	30 (56.60%)	12 (57.1%)
Female	13 (54.2%)	132 (48.2%)	23 (43.39%)	9 (42.9%)
Education				
High School	--	108 (39.42%)	20 (37.7%)	--
Secondary	--	69 (25.18%)	26 (49.1%)	--
Graduation/PG/Doctorate	24 (100%)	97 (35.40%)	7 (13.2%)	21 (100%)
Presently Living at				
Home	23 (95.8%)	231 (85.2%)	44 (83.0%)	16 (76.2%)
Quarantine Place	1 (4.2%)	5 (1.8%)	9 (17.0%)	4 (19.0%)
Hostel	--	12 (4.37%)	--	--
Official Accommodation	--	26 (9.6%)	--	1 (4.8%)

Table 2: Comparative scores of participants on various clinical measures

	Administrative/Office (n24)	Police (274)	Social Worker (n 53)	Media (n 21)	K Wallis	P
	Median (IQR)	Median (IQR)	Median (IQR)	Median (IQR)		
Peritraumatic Distress Inventory (PDI)						
Life Threat	3.50 (4.00)	3.00 (5.00)	6.00 (6.00)	9.00 (5.50)	50.634	<0.01
Loss of Control	0.00 (.75)	0.00 (1.00)	1.00 (4.00)	3.00 (3.50)	52.695	<0.01
Helplessness Anger	1.00 (2.00)	1.00 (2.00)	2.00 (3.00)	4.00 (2.00)	33.467	<0.01
Guilt and Shame	0.00 (.00)	0.00 (1.00)	1.00 (3.00)	3.00 (2.00)	64.240	<0.01
Total PDI	5.00 (6.75)	4.00 (9.00)	12.00 (15.50)	18.00 (9.50)	57.556	<0.01
Insomnia Severity Index (ISI)						
Insomnia	3.00 (5.75)	1.00 (5.00)	8.00 (10.50)	14.00 (7.50)	76.794	<0.01
Depression, Anxiety, and Stress Scale (DASS)						
Stress	8.00 (9.50)	12.00 (6.00)	0.00 (12.00)	0.00 (24.00)	15.844	<0.01
Anxiety	7.00 (4.00)	14.00 (6.00)	14.00 (8.00)	20.00 (6.00)	48.756	<0.01
Depression	8.00 (7.50)	10.00 (4.00)	12.00 (10.00)	20.00 (8.00)	57.304	<0.01

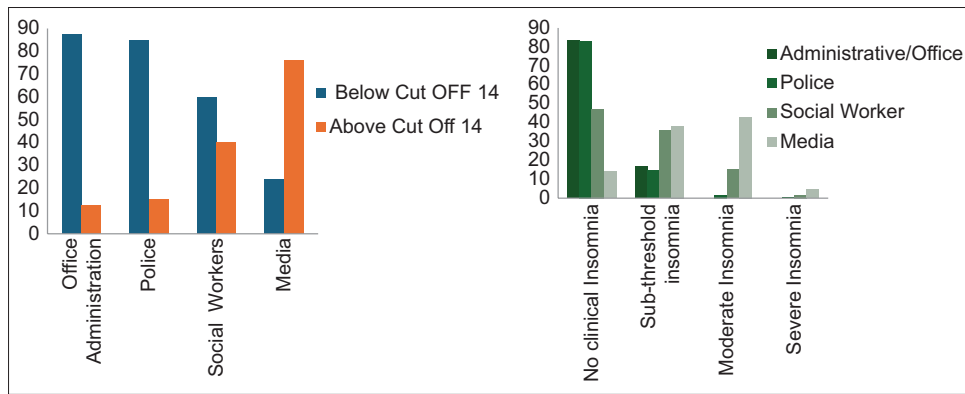


Figure 1: Severity of distress and insomnia among all the groups

occupation, age, gender, standard of living, and education level. The psychological effects of pandemics in general have already been comprehensively evaluated at various phases and across numerous platforms. However, there is little knowledge and evidence available about similar effects on front-line soldiers who are not solely healthcare professionals.

Previously published studies from countries like Canada, Taiwan, and Hong Kong conducted during the SARS outbreak have reviewed the devastating effects, especially the psychological morbidity among health care workers.^[8-10] An editorial published in Lancet 2020 had focused on the importance of services provided by the essential workers, which goes beyond healthcare and the challenges faced by them to combat COVID-19. It was also emphasized that of all the service providers, the worst hit were those who were involved in transport.^[11]

An increased risk of acquiring post-traumatic stress disorder (PTSD) is linked to high PDI scores.^[12-14] Overall, it was discovered that among all essential frontline workers, the prevalence of psychological distress (PDI >14) was lower, at 21.1%. A study from China found that 35% of the study population experienced psychological stress using the

COVID-19 PDI score, compared to 38.06% of participants in a few other studies, 71.5% of frontline health care workers also experienced high levels of distress, and female participants were significantly more distressed than male participants.^[15,16] In our study, PDI >14 was present in 76.2% of media employees and 40% of social workers. Younger participants (aged 22–40 years), females, participants with only a high school degree, and those residing in quarantine facilities all showed considerably higher levels of distress.

Around one-fourth (26.1%) of the subjects in the current study had insomnia with an ISI score >7, and there were significant differences across all occupational groups. Our study has a lower prevalence of insomnia than other studies. An earlier study indicated that 38% of the study population experienced insomnia. Zhang *et al.* compared the prevalence of insomnia among health care workers to that of those without a medical background and found that it was 38% in both groups.^[17,18]

In our study, a profession-based analysis showed that social workers (15.1%) and the media (42.9%) had moderate insomnia, compared to police officers (0.4%).

Table 3: Severity of depression, anxiety, stress, and insomnia among essential workers

Severity	Depression	Anxiety	Stress
Administrative/Office Staff (n=24)			
Normal	13 (54.2%)	12 (50.0%)	21 (87.5%)
Mild	9 (37.5%)	5 (20.8%)	1 (4.2%)
Moderate	2 (8.3%)	4 (16.7%)	1 (4.2%)
Severe	0 (0%)	1 (4.2%)	1 (4.2%)
Extremely Severe	0 (0%)	2 (8.3%)	0 (0%)
Police (n=274)			
Normal	71 (25.9%)	24 (8.8%)	224 (82.1%)
Mild	136 (50.4%)	30 (10.9%)	28 (10.2%)
Moderate	49 (17.9%)	144 (52.9%)	18 (6.2%)
Severe	13 (4.4%)	52 (19.3%)	4 (1.5%)
Extremely Severe	5 (1.5%)	23 (8.0%)	0 (0%)
Social Workers (n=53)			
Normal	3 (4%)	0 (0%)	45 (84.0%)
Mild	27 (50%)	11 (20%)	2 (4.0%)
Moderate	15 (28%)	16 (30%)	4 (8.0%)
Severe	9 (18.0%)	11 (20%)	2 (4.0%)
Extremely Severe	0 (0%)	16 (30%)	0 (0%)
Media (n=21)			
Normal	1 (4.8%)	1 (4.8%)	12 (57.1%)
Mild	2 (9.5%)	4.1 (8%)	6 (28.6%)
Moderate	8 (38.1%)	3 (14.3%)	2 (9.5%)
Severe	7 (33.3%)	5 (23.8%)	1 (4.8%)
Extremely Severe	3 (14.3%)	11 (52.4%)	0 (0%)

All essential workers were found to have mild to moderate (8.4% to 7.6%) stress, moderate (45.3%) to severe (18.7%) anxiety, and mild to (47.2%) moderate (19.8%) depression in the current study. Our findings are consistent with other research on healthcare workers, where participants experienced moderate to severe depression.^[19] In our study, the proportion of depression and anxiety was higher than that in a comparable study (17.9% and 30.3%, respectively), while the percentage of those experiencing stress was about the same.^[20]

The results of our study show that women, young people (ages 22–40), and responders from high schools are the ones who experience major anxiety, insomnia, and depression. High levels of stress were also noted in the high-school responders and females. These results are consistent with a few earlier investigations that were undertaken.^[21-23] According to the findings of the current study, women were more prone to experiencing distress than men. This result may be explained by gender differences in the body's hormonal reaction to stress.^[24] This fact is further supported by a study by Young and Korszun, which found that female hormones increase the severity of stress reactions.^[25]

Limitations

The study's small sample size was small. Second, data on co-morbid states and their mental health in the pre-COVID time were not collected, and these may have influenced the

overall susceptibility to stress, anxiety, or mental health issues. The results of this study will allow us to direct future research and have highlighted the need for psychological care for essential workers.

CONCLUSION AND FUTURE RECOMMENDATIONS

Essential workers are present in every area and profession of society. A pandemic like COVID-19 not only increases the workload but also causes an impact on mental health. Mock drills and disaster preparedness will arm society workers in future to provide better service and care and reduce its impact on their own physical and mental health. Future events will benefit from the development of psycho-social therapies, telephonic support, and a more comprehensive strategy through social groups to address the impact of COVID-19 on the mental health of key workers.

Ethical information

The institutional ethics committee approved the study with letter number (vide IEC/2020/382-722).

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Conflicts of interest

There are no conflicts of interest.

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Supplementary Table 1: Association among demographic and clinical Variables

	Distress	Insomnia	Stress	Anxiety	Depression
Age	-0.197**	-0.244**	0.021(NS)	-0.045(NS)	-0.098(NS)
Gender	0.254**	0.252**	0.108*	0.031(NS)	0.198**
Education	0.206**	0.355**	0.205**	-0.012(NS)	0.208**
Occupation	0.403**	0.466**	-0.062	0.372**	0.456**
Distress		0.723**	0.383**	0.516**	0.668**
Insomnia			0.318**	0.482**	0.661**

Note: **Significant at 0.01 levels. *Significant at 0.05 levels