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Mental health status among corporate- and public sector health care workers in India during COVID-19 pandemic (second-wave): Impact of awareness, work satisfaction, risky work-environment practices and social media usage on DASS-21 & IES-R scores

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Abstract

Introduction: With the advent of coronavirus pandemic, health care workers (HCWs) faced numerous professional, financial, and emotional challenges in addition to social stigma. **Objective:** It was intended to analyse the correlation of depression, anxiety, and stress among corporate and public sector HCWs, with awareness, risky work environment practises, work-environment satisfaction and social media preferences. **Materials and Methods:** Doctors, nurses and paramedical staff in critical care, obstetrics, neuro-anaesthesia and neurosurgery wards/ICUs in a public and corporate sector hospital were administered DASS-21 (depression-anxiety-stress scale), IES-R (impact of event scale-revised) and a common perception-based survey to assess the HCW awareness (AWA), work environment satisfaction (WES), risky work environment practises (RWE) and social media preferences (SM scale). **Results:** In corporate sector, being a nurse correlated with higher scores of stress (*rs =1, p=0*), DASS (*rs =0.34,* p=.114), depression (*rs =0.54, p=.007*), anxiety (*rs* =0.42*, p=.041*) and IES-R (*rs* =0.34, p=0.13). SM score negatively correlated with anxiety (*rs* =0.58, *p=0.045*), stress (*rs* =0.418, *p=.041*), DASS (*rs* =0.62, *p=.001*) and IES-R (*rs* =0.45, *p=.031*). In public sector, female HCWs had higher DASS (t=2.61, *p=.018*), anxiety (t=2.2, *p=.03*), stress (t=-2.11, *p=.011*) and IES-R (t=-1.86, p=0.07). AWA score negatively correlated with anxiety (R=-0.56, *p= .005*), DASS (rs=-0.48, *p=.004*) depression (p= .283), stress (p= .11) and IES-R (p= .101). RWE score strongly correlated with anxiety (*rs* =0.39, *p= .027*). Depression (D *total*, *p= .010*) and IES-R (*p= .024*) were significantly

higher in public sector HCWs. Anxiety (A *total*, p= .108) and stress (S *total,* p= .246) were lower in corporate sector HCWs. **Conclusion:** Corporate sector nurses and female HCWs in the public sector showed significantly higher stress, depression, and anxiety scores. Increasing awareness about disease could mitigate stress, anxiety, and depression while prevailing social media preferences aggravate anxiety, stress, and depression.

Keywords: Mental health. DASS. IES-R. Awareness. Work satisfaction. Social media. COVID-19.

Introduction

Mental health among doctors, nurses and paramedical staff is one of the most neglected aspects of medical profession. With the coronavirus pandemic, health care workers (HCWs) worldwide were exposed to tremendous levels of stress at professional, personal, and social fronts. Caring for one's children and elderly family members while completing duties in COVID-19 wards/hospitals was extremely difficult. The modern society living under lockdown and government-imposed restrictions for travel and self-hygiene, had shown a different side of apathy towards HCWs. Landlords evicted HCW tenants out of their rental homes, and there were reports of HCW suicide related to workplace stigma associated with COVID-19 positive status [1].

Acute post-traumatic stress disorder was seen among 13-21% of car accident survivors and 20-50% of assault, rape or mass shooting victims [1]. Emergency medicine physicians working in rural areas with limited resources, those in training for residency programs, directly involved in trauma or malpractice litigation are most prone to develop post-traumatic stress (PTS) disorder [2]. Approximately 18% of all nurses, 15 to 17% of emergency physicians, and 11.9 to 21.5% of emergency medicine residents meet diagnostic criteria for PTSD [3-5].

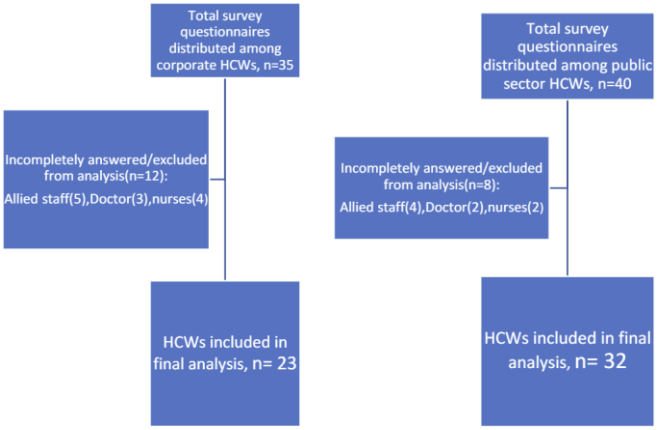
With the advent of the second wave of coronavirus pandemic in India, the nationwide lockdown was imposed. Major restructuring of work schedules, outpatient and inpatient services took place in public and private sector hospitals across various cities. Resident physicians and nursing staff were assigned duties in wards dedicated for COVID-19 positive patients for a 14-day period followed by quarantine for 5-7 days. In case of high-risk contact with a coronavirus-positive patient or development of symptoms suggestive of active infection, these HCWs underwent testing for COVID-19 antigen. Asymptomatic positive HCWs were sent to home quarantine for five days, while symptomatic positives were admitted within the same health care facility for further management.

Materials & Methods

This preliminary anonymous survey was carried out from 14th April 2021 to 15th May 2021. Doctors, nurses and paramedical staff performing duties in public and private sector hospitals catering to COVID-19 positive patients were administered questionnaires - Depression- anxiety- stress scale (DASS-21) and impact of event scale-revised (IES-R). The primary objective was to calculate the total DASS score, IES-R and independent scores of depressions (D total), anxiety (A total) and stress (S total) among both populations. A common perception-based survey comprised of awareness (AWA) scale, work environment satisfaction (WES) scale, risky work environment (RWE) practises score, and social media (SM) perception-usage scale (Annexure3) was also given. This was a voluntary survey, and the identity (name) of HCWs was not sought. Physicians and nurses assigned to intensive care, emergency, ward duties in critical care, neuro-anaesthesia, obstetrics, neurosurgery wards answered the survey, one week after their duties were completed. Paramedical staff (hospital attendants, technicians, catering employees) also answered the questionnaires voluntarily. Incompletely answered questionnaires were excluded from the final analysis. The recruitment and comparison of HCWs are given in Table 1.

The secondary objective was to study the adequacy and preparedness of the work environment (AWA scale); satisfaction of the HCWs with the present changes made to the work environment under the impact of COVID-19 (WES scale); certain risky work-related practises which predispose the HCW to stressful conditions (RWE scale). Common perception and social media usage patterns among HCWs (SM scale) were also studied. It took 7-9 minutes to answer one set of DASS-21, IES-R, AWA, RWE, WES, and SM scale questions. The demographic parameters like age group, gender, marital status, occupation (physician/ nurse/allied staff), duration of work experience(years) were also analysed for correlation with primary outcome measures (DASS-21, D total, A total, S total and IES-R score) for each subgroup. Informed consent was obtained from the participants prior to administering the survey. Ethical approval was obtained from both institute ethics committees (IEC/AC/CT/20/1911 & FMRI/IEC/1026-2021).

Table 1. Flow diagram for inclusion of Health Care Workers (HCWs) based on completed questionnaires.



Source: Own authorship.

Statistical Analysis

The tabulated data were analysed through R (Comprehensive R archive network) version 4.0.0. Acquired data were assessed for normality using the Kolmogorov Smirnov test. Subgroup analysis was done using Pearson correlation coefficient(R) and Spearman's rho (rs), depending on the generated data type. Unpaired t-test was used to compare means of primary outcome scores within bivariate independent subgroups, e.g. gender and marital status. Intergroup analysis was done using unpaired t-test and Mann-Whitney U test as suitable. P-value less than .05 was considered significant. Internal validity of our secondary scoring system (AWA, WES, RWE, SM score) was estimated through Cronbach's alpha. AWA, WES, and SM scores had alpha values 0.877, 0.811, 0.703, respectively, while the RWE alpha score was 0.455. The diverse number of questions in the first three surveys was believed to contribute to good internal validity. DASS-21 and IES-R internal validity was also estimated to be good (Cronbach's alpha 0.92 for former and 0.94 for the latter) for our HCW population.

Results

A total of 75 survey questionnaires were distributed, and 55(73.3%) were included in the final analysis based on a completely answered survey (Table 1). Age groups were divided as 20-24year: group 1, 25-34: group 2, 35-44: group 4, 45-54: group 4, > 55: group 5.

Subgroup analysis: Corporate Sector HCWs(n=23)-The median age group of the volunteers was 25-34 years (47.2%). Females were 60.8%, and 56.52% of the HCWs were unmarried. Nurses (n=16,69.56%) outnumbered doctors (26.08%) and allied staff. Mean work experience was 4.26 (± 3.09) years (Figure 1).

Figure 1. Subgroup analysis. General clinical data.

Age group Z score:2.37, *p=0.17*		Gender Z-score: -0.08, p= 0.46		Occupation Z score: -0.989, p= 0.322		Marital Status Z score: 1.07, p=0.284		Work experience Z score: -0.213, p=.833	
Corporate sector	Public Sector	Corporate sector	Public Sector	Corporate Sector	Public sector	Corporate sector	Public Sector	Corporate Sector	Public Sector
20-4, n= 8 25-34, n=11 35-44, n= 4 >45, n=0	20-24, n=0 25-34, n=23 35-44, n=5 45-54, n=3 >55, n=1	Male, n=9 Female n=14	Male,n =13 Female n= 19	Doctor n=6 Nurse n=16 Allied staff, n=1	Doctors, n=18 Nurses, n=7 Allied staff,n=7	Unmarried n= 13 Married n= 10	Unmarried:14 Married: 18	Mean: 4.26 years (± 3.09),	Mean: 7.6 years (± 6.54)

Source: Own authorship.

Unmarried HCWs had higher anxiety (M=12.15,SD=11.35**,** p=1.55), depression (M=11.23, SD=11.35,p= .30) and stress (M=10,SD=9.7,p= .387), DASS-21 (M=33.38,SD=28.07,p= .215) and IES-R (M=18.53, SD=14.4,p=1.88) scores.

Nurses had higher depression (D total, rs=0.54, **p= .007**), anxiety (A total **rs=0.42, p= .041**), IES-R and DASS-21 (rs=0.34,p= .114) scores, than doctors and allied non-medical staff (Figure 2). Stress score (S total) had a strong correlation (**rs=1, p=0**) with being a nurse by occupation.

Figure 2. Depression, anxiety, IES-R and DASS-21 scores.

	Corporate HCWs	Public HCWs	Comparison
DASS score	Mean 27.13 ± SD 27.16	Mean 40.71 ± SD 24.13	t value: -1.93 p = .058
D total	Mean 9.21 ± SD 10.4	Mean 15.25 ± SD 8.31	t- value: 2.85 ***p = .004***
A total	Mean 9.32± SD 10.3	Mean 13.81 ± SD 9.93	t-value: -1.63 p = .108
S total	Mean 8.6 ± SD 8.41	Mean 11.31 ± SD8.32	t value: -1.17 p= .246
IES-R	Mean 14.78 ± SD 15.33	Mean 26.5 ± SD 20.79	t value: -2.307 ***p= .024***

Source: Own authorship.

The mean DASS-21 score was 27.13(± 27.16), and the mean IES-R score was 14.78(±15.33) (Figure 3). D total mean scores (9.21 ± 10.4) revealed mild depression, mean A total (9.32 ± 10.3) indicated mild anxiety and mean S total (8.6 ± 8.41) were normal among these HCWs (Annexure 4). Negative correlation was seen between primary outcome measures and age group distribution of HCWs (p> .05). Males had higher anxiety (Mean= 11.33, SD=13.3, p=0.43) scores and females had higher levels of depression (M=10.14, SD=10.39,p=0.6), stress (M=14.3 ,SD=9.33,p=0.61) and DASS-21 (M=25.85 ,SD=23.29,p=0.78). IES-R scores among males (M=14.5, SD =15.4) and females (M=14.92, SD=15.86) were similar (t=-0.05, p=0.47) (Annexure 4).

Figure 3. Mean DASS-21 and IES-R score.

Corporate sector	DASS score	Dtotal	A total	S total	IES-R
Gender Male HCWs Female HCW	t=0.27, p=0.78 M=22, SD=28 M=25.8,SD=23.2	t=0.52,p=.606 M=7.9,SD=9.09 M= 10.14, SD=10.39	T=0.79,p=.43 M=,11.5 SD=13.3 M=7.87, SD=7.62	T=0.51,p=0.61 M= 9.70, SD=11.5 M=14.3, SD=9.33	T=-0.05,p=.47 M=14.5,SD=15.4 M=14.92,SD=15.8 6
Age group	rs =0.0067 p = 0.975	rs=0.0775 p = 0.72	rs=-0.208, p = 0.34	rs=-0.118 p= 0.589	rs=-0.173 p= 0.427
Marital status Unmarried Married	t=1.27, p=.215 M=33.38, SD=28.07 M=19, SD=24.96	t= 1.06, p= 0.30 M=11.23,SD=11.3 5 M=6.69, SD=8.08	t= 1.33, p=1.55 M=12.15,SD=10.0 8 M=5.6, SD=9.87	t=0.88, p= 0.387 M=10, SD=9.7 M=6.87, SD=6.68	t=1.36, p=1.88 M=18.53,SD=14.4 8 M=9.9, SD=15.5
Occupation	R=0.341 P=0.114	rs = 0.545, ***p = 0.007***	rs = 0.427, ***p = 0.041***	rs = 1, p = 0	R=0.342, p value .13
Public Sector *Gender* Male HCWs Female	DASS ***t=-2.61, p=0.01*** M=28.46,SD=11.6 9 M=49.05,SD=26.5 8	Dtotal t =2.9 , p=0.06 M=28.46,SD=11.6 9 M= 16.8, SD=11.02	A total ***t= 2.2, p= 0.03*** M=9.38, SD=6.08 M= 16.8, SD=11.02	S total ***t=-2.11, p=0.011*** M= 6.92, SD=3.61 M= 14.31,SD=9.33	IES-R t= -1.86,p= 0.07 M=18.6,SD=10.2 M=32.05,SD=24.5]
Age group	R=-0.142 P=0.431	R=0.093, p=0.602	R=-0.281, p=0.113	R= -0.09 p=0.618	R= -0.131, p= 0.53
Marital status Unmarried Married	t=0.07, p= .94 M=41.07, SD=23 M= 40.4,SD=25.5	t=0.06, p= 0.94 M=15.53,SD=9.42 M=15.54,SD=7.85	t= 0.05,p= 0.95 M=14,SD=7.21 M=13.7,SD=11.9	t=0.10,p=0.92 M=11.53,SD=8.8 3 M= 10.81,SD=5.8	t=-0.03, p=.97 M=26.38, SD=25.6 M= 26.6, SD= 17.9
Occupation	R=-0.129 P=0.481	R= -0.065 p= 0.73	R=- 0.33 p=0.06	R= -0.097 p= 0.591	R= -0.132 p =0.46

Source: Own authorship.

Social media reliability (Low SM score) among HCWs were negatively correlated with anxiety (**p= .045**), stress **(p= .041)**, DASS-21 **(p= .001)** and IES-R scores (**p= .031**). Increasing awareness (AWA score) correlated negatively with stress and depression while positive correlation with anxiety and IES-R was statistically insignificant. Risky work environment practises (RWE score) and work satisfaction (WES) were negatively correlated to primary outcome scores (p>0.05) (Figure 4).

Figure 4. AWA, WES, RWE, and SM Score

	AWA score	**WES score**	**RWE score**	**SM score**
Corporate Sector HCWs	Mean 3.91 ± 2.1	Mean 6.39 ± SD 3.49	Mean 0.69 ± 0.89	Mean 4.52 ± SD 1.51
Public Sector	Mean 8.25 ± SD 1.36	Mean 7.71 ±2.37	Mean 1.18± 0.59	Mean 3.03 ± SD 1.06
Comparison	***Z=6.27, p<0.001***	Z=1.69, p=0.089	Z=2.51, p= 0.117	Z=-3.344 ***P<0.001***
Corporate HCW	**AWA score**	**WES score**	**RWE score**	**SM score**
DASS score	Rs=0.007 P=0.97	Rs=-0.003 P=0.98	Rs=-0.41 ***P=0.05***	Rs=-0.627 ***P=0.001***
D *total*	R=-0.048 P=0.827	R=-0.16 P=0.46	Rs=-0.266 P=0.21	R=-0.419 P=0.21
A *total*	R=0.252 P=0.246	R=-0.056 P=0.79	R=-.035 P=.101	R=-0.58 ***P=0.045***
S *total*	Rs= -0.155, p=0.478	rs=0.16 p=0.465	Rs=-0.198 P=0.36	Rs=-0.418 ***P=0.04***
IES-R	R=0.014 P=0.94	R=-0.29 P=0.925	R=-0.36 P=0.091	R=-0.45 ***P=0.031***
Public Sector HCWs	**AWA score**	**WES score**	**RWE score**	**SM score**
DASS	***rs = -0.48448, p = 0.0049***	Rs=-0.088 p=0.662	Rs=0.299 p= .096	Rs=-0.046 p=.801
D *total*	R= -0.283, p= 0.11	rs = 0.004, p = 0.980	rs = 0.243, p = 0.178	rs = -0.071, p = 0.697
A *total*	***R= -0.56, p= 0.005***	rs = -0.290 p = 0.106	***rs = 0.39, p = 0.027***	rs = -0.045, p = 0.805
S *total*	R=- 0.29, p= 0.101	rs = 0.085, p = 0.641	rs = 0.167 p = 0.360	rs = -0.112, p = 0.54
IES-R	R= -0.208, p= 0.283	rs = -0.281 p = 0.118	rs = 0.257 p = 0.155	rs = -0.099 p = 0.586

Source: Own authorship.

Public sector HCWs (n=32): Median age group of HCWs was 25-34 years (n=23, 69.6%). Females were 57.5%(n=19). Married HCWs (57.5%, n=18) were more than unmarried (n=14,42.5%). Doctors (n=18, 54.5%) outnumbered nurses (n=8, 24.3%) and paramedical staff (n=7,21.2%). Mean work experience was 7.62 (± 6.54) years. Mean DASS-21 score 40.37 (± 23.87), and mean IES-R score of 26.5 (± 20.79) indicate clinically concerning post-traumatic stress symptoms. Mean D total (15.25 ± 8.31) showed moderate depression, mean A total (13.81±9.93), moderate anxiety and mean stress scores (11.31 ± 8.32) were categorically normal among these HCWs.

Age group distribution was not significantly correlated with primary outcome scores. Female HCWs had higher DASS-21 (M=49.05, SD=26.58, **p= .018**), anxiety (M=16.8, SD=11.02, **p=0.03**),stress (M=14.31,SD=9.33, **p= .011**) ad IES-R (M=32.05,SD=24.5,p=0.07) scores. Depression (D total) scores were higher among male HCWs (M=28.46, SD=11.69, p=0.06). DASS-21 (p=0.944) and IES-R (p=0.97) scores were almost similar between married and unmarried HCWs. Non-significant correlation was seen between primary outcome scores and specific occupation (doctor/nurse/ non-medical staff) of HCWs.

Awareness scores (AWA) were negatively correlated with anxiety (**p= .005**), DASS (**p=.004**) depression (p= .283), stress (p= .11) and IES-R (p= .101). Risky work practises (RWE) were significantly correlated with anxiety scores (**rs=0.39**, **p= .027**). Social media (SM score) was negatively correlated with all primary outcome scores, although statistically insignificant. Work environment satisfaction (WES) among HCWs was negatively correlated with anxiety and IES-R scores(p> .05) and weak positive correlation with depression and stress scores(p> .05).

Intergroup trends: Median age groups of both public and corporate sector HCWs was similar (25-34 years), however significant heterogeneity was noted among the groups (Zscore=2.37, **p= .017**), i.e. in the public sector, all the employees were older than 25 years, while in corporate sector 34.78% (n=8) HCWs were in the 20-24year age group. Gender (p=0.46), work experience (p=0.83), marital status (p=0.284), and occupation-distribution (p=0.33) of HCWs in both groups were not significantly different. Depression (D total, **p= .010**)) and IES-R (**p= .024**) scores were significantly higher in public sector HCWs. Although statistically insignificant, anxiety (A total, p= .108) and stress (S total, p= .246) scores were lower in corporate sector HCWs. Statistical difference was also noted in SM, AWA, and RWE scores. SM score (**p< .001**) was higher while RWE (**p= .011**) and AWA (**p< .001**) scores were lower in corporate sector HCWs. Work

satisfaction (WES) score was higher among public sector HCWs (p= .089).

Discussion

DASS-21 denotes the depression-anxiety-stress scale. It comprises 21 questions (Annexure 1: 3 sets of 7 questions each) where the depression scale queries for anhedonia, dysphoria, and hopelessness. Autonomic arousal and perception of anxious affect are the main objects of the anxiety scale, and the stress scale confronts non-specific arousal, irritability, impatience etc [1,6,7]. This score discriminates three basic states of emotional disturbance [6,7]. It bears good internal validity across different populations. Lovibond and Lovibond (1995) described total DASS scores: 0-78 score as 'normal', 78-87 'mild', 87-95 'moderate', 95-98 'severe', and 98-100 as 'extremely severe'. They advised doubling the DASS-21 raw score for comparison purposes [8]. The internal validity of DASS-21 has been estimated at around 0.7-0.9 in various research settings [9].

The impact of event scale(revised) (IES-R) comprises of different subscales- Q 1,2,3,6,9,14,16,20 for intrusion; Q 5,7,8,11,12,13,17,22 for avoidance and Q 4,10,15,18,19,21 for hyperarousal (Annexure-2) [3,4]. It has been used for screening post-traumatic stress in Vietnam veterans, survivors of arsenic poisoning, traumatised substance dependant individuals, traumaexposed American undergraduate students etc. Total IES scores greater than 34 have better sensitivity, although scores 22-44 have been considered diagnostic of post-traumatic stress (PTS) disorder [1,10]. Studies have shown good internal validity (0.94) [11,12].

The common-perception-based survey we administered comprised scales with a set of simple questions with yes/no answers. A 'yes' answer was scored 1 while 'no' was scored as 0. AWA scale scored awareness of HCW for details of the transmission of COVID-19, risky work environment (RWE scale) practises like exposure/interaction/examining a COVID-19 positive patient , Work-environment satisfaction (WES scale) and social media (SM scale) preferences of the HCWs were also asked for. Lower SM scores were equivalent to higher reliability on social media/news channel platforms and vice versa. Awareness and work environment satisfaction scales were based on certain National Centre of PTSD guidelines [13]. Internal validity for the secondary outcome scales AWA, WES, SM, and RWE were 0.877, 0.811, 0.703 and 0.45, respectively.

The incidence of HCW suicide increase with the COVID-19 pandemic [14]. New York city's mental health helpline reported an increased number of telephone calls and emails since March 2020, which is postulated to result from the increasing anxiety and stress among public [15]. In addition to depression and anxiety, financial insecurity contributes to the mental health burden. Although social isolation is necessary for containing the coronavirus outbreak, it may not help people with features of stress, anxiety, and depression.

Public sector HCWs had statistically significant higher scores for DASS, D total and IES-R. Mean anxiety and stress scores were also higher among the public sector HCWs (p>.05) (Figure 1). The heterogeneity of the HCW age group could contribute to this result. Among corporate sector HCWs, nursing staff were at higher risk of depression, anxiety, and stress with a significantly positive correlation with D total, A total, S total scores than doctors and allied HCWs. The nursing profession is intricately associated with sick-patient care at various levels. As employee management teams, we need to provide frequent mental health screening and rehabilitation exercises for nurses.

Among public sector HCWs, females had significantly higher DASS(**p=.01**), S total (**p=.011**) and A total**(p=0.03**) scores. IES-R and D total were also higher than male HCWs (p>.05) (Annexure 4). Nurses had higher primary outcome scores (p>0.5). A higher proportion of nurses being females could contribute to this result. Hence, regular screening of female HCWs with similar questionnaires is important to identify those at risk for burnout and post-traumatic stress.

Higher reliability on social media (lower SM score) in the corporate sector was strongly correlated with higher primary outcome scores A total, S total and IES-R(**p<0.05**) (Figure 4), which should warn HCWs against the downside of widespread misinformation practises on mental health. Increasing awareness (AWA score) negatively correlated with depression and stress levels and the opposite with anxiety and IES-R, which portrays awareness as a double-edged sword. In times of a rising pandemic, it is important to curtail sharing knowledge on a need-to-know basis as it can also adversely impact mental health status. The present-day news channels, social media groups etc., circulate two kinds of information: one related to pathogenesis and treatment of the disease per se and the other related to its impact on society and country on a large scale. The latter kind is likely to create panic among HCWs too.

Risky work environment practises (RWE score) among public sector HCWs also correlated with anxiety (rs=0.39, p=.027) and aggravated depression and stress, which prove that HCWs need a practical system with double-checks to avoid hazardous events. Satisfaction at the workplace becomes a by-product of positive awareness, avoidance of risky exposure and presence of social support systems, hence the negative

correlation between WES and primary outcome scores (DASS and IES-R).

Mean D total(**p=.004**), IES-R (**p= .024**) and DASS (p= .058) scores were higher among public sector HCWs. A total and S total was higher among the public sector(p>.05) too. Stressful work environment, higher patient load, curtailed facilities, and higher social media reliability (low SM score, **p<.001)** could contribute to these outcomes. AWA score (p<.001) was higher among public sector HCWs. This could explain the higher stress and anxiety levels among them.

In substance use disorder patients, DASS-21 scores were higher after clinical detoxification than at the time of drug intake [7]. One-time estimation of DASS and IES-R scores in the setting of a pandemic may not be sufficient [7-9]. Since our set of HCWs will be scheduled for repeated postings inwards/ICUs designated for COVID-19 patients, these surveys need to be repeated periodically. We need to find out larger HCW populations at risk for mental illness.

Wearing PPE for prolonged hours can lead to dehydration and physical exhaustion. Some HCWs even report fear of suffocation as there is a lack of clean air to breathe, rebreathing (N95) masks tend to elevate arterial PCO_2 levels and difficulty communicating with neighbouring staff members due to blunting of voice decibel by the multi-layered protection of mask and face shield. We must allow them adequate time to rest, follow personal hygiene and maintain nutrition between duty hours.

There is a need to follow newer sanitation measures while examining patients, going through old patient records, and performing medical/surgical procedures. These practises were not imbibed spontaneously, and the time taken to get accustomed to them has a psychological bearing due to the persistent threat of acquiring infection. Training exercises need to be set up, and HCWs can participate in them during off-duty weeks.

Travel to and from the workplace must become free of hassles. The use of public transport facilities is common among corporate- and public sector HCWs. Many used to travel for hours to reach their workplace. COVID-19 brought the metro-rail/subway transport system to a halt, and HCWs were forced to drive or become pillions. Common transport vehicles and duty timings for HCWs belonging to a geographical area/sector of the city may be provided. In a developing country like India, many HCWs have dependant family members with comorbidities. Living in quarantine, separated from elderly members and small children, and the constant fear of transmitting infection when not isolated poses a practical dilemma for HCWs. Availability of domestic help and an uninterrupted flow of essential services need to be ensured.

The onus of supporting public sector employees lies with the government. Mental health support policies targeting public sector HCWs should be implemented. We may survive the physical battle against coronavirus, but as HCWs, we need to safeguard our psychological forefront at the right time. As organisations, we need to find these populations at-risk early and intervene [14,15].

Meditation techniques for self-relaxation, cognitive behavioural therapy (CBT), mindfulness-based stress management (MBSR) and team debriefing aftercare of critical patients represent the spectra of therapeutic strategies for treating post-traumatic stress in HCWs. As HCWs, most have unconsciously believed that expressing emotion and showing the burden of stress may be perceived as a weakness. Due to the pervasive nature of illness and death at our workplace, we have become disconnected from normal human emotions [15].

Limitations

Sample size for the present study is limited to 55. The HCWs were assigned to specific timings for duties in ICU and wards, and after that isolation for one week, they could be contacted once the duties were over. Within subgroup analysis, we could not apply Analysis of Variance as the number in paramedical staff subgroup was low. Since mental health problems are likely to follow a continuum in severity, it is important to periodically evaluate HCWs needs and intervene when scores of depressions, anxiety and stress are rising beyond normal. Regular follow up over a long period of time will provide better credibility to our scores.

Conclusion

COVID-19 pandemic has come as a disaster for which everyone was unprepared. It has impacted the healthcare systems worldwide. Corporate sector nurses and female public sector HCWs must be monitored periodically as they had statistically significant higher scores of DASS and IES-R. Social media usage patterns among corporate sector HCWs negatively correlated with all primary outcome scores. Increasing awareness decreases anxiety, depression, stress, and IESR, while risky work environment practices increase anxiety levels among public sector HCWs.

CRediT

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Ethical Approval

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Informed Consent

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No additional data are available.

Conflict of Interest

Was obtained from the participants of the survey in written format.

Similarity Check

It was applied by Ithenticate[@].

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It was performed.

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