

Research Article

HEALTH CARE WORKERS PERCEPTION AND PSYCHOLOGICAL DISTRESS DURING THE COVID-19 PANDEMIC: AN INDIAN CONTEXT

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Abstract

Objective: Health professionals struggled with additional stress as compared to the rest of the population during the time of COVID19 Pandemic. Previous reports and current data suggest that tremendous burden led to many stress disorders among the health care workers and their long-term effects on their state of mind need to be studied to take necessary measures. This study has been designed to assess the level of stress and other psychiatric disorders among HCWs and the role of administration to overcome it. **Method:** This survey based retrospective study was conducted across multiple Centres and data from health care workers who were in direct contact with confirmed or suspected cases were collected and analyzed. **Result:** Data were compared on the basis of different parameters, *i.e.*, category, gender, age, marital status, years of work experience per se with the degree of stress. Our study shows significant degree of stress among the healthcare workers during and post pandemic. Nursing staffs and doctors were affected significantly with higher degree of stress. Overall higher stress was observed among females as compared to the males; and among youngers and HCWs with lesser years of work experience. **Conclusion:** This study is the first of its kind assessing stress levels in the health care workers on every aspect in great details. Our study also observed that instead of using Headington scale to classify the degree of stress, if we can compare stress scores using different statistical tools, obtained results are more reliable and it can accurately assess the degree of stress. *ASEAN Journal of Psychiatry, Vol. 23(7), July, 2022; 1-8.*

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Introduction

Since ages, the inquisitive nature of mankind has led to advent of one or the other crippling maladies which have their own set of ghastly aftermath. Diseases have plagued humanity since prehistoric times and prevailed with every civilization of the world [1]. The growth in civilizations led to the exchange of cultures and places, which in turn caused spread of diseases from one place to another [2]. Many contagious

diseases were spread from bronze age to iron age leading to the downfall [3].

21st century had many outbreaks of SARS, Swine flu, EBOLA and MERS with present day (2019-Present) Novel Coronavirus (COVID-19). Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the contributory agent of novel coronavirus disease 2019 (COVID-19). In December 2019, COVID-19 was first reported from a patient of pneumonia in Wuhan, China.

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On 11th March 2020, WHO had declared COVID-19 outbreak as pandemic. The highest number of COVID cases and deaths were documented from the United States and the second highest position was secured by India [4].

There has been an inevitable existence of pandemics with humanity. People have lost their lives by being prey to this monstrous pandemic. Others who managed to survive suffered from major psychosocial effects. Every section of the society seized to this pervasive disease but more importantly, the healthcare professionals, who were not only affected by his grave pestilence but also witnessed the mass disaster on the field and eventually succumbed to the disastrous disturbance of mental well-being [5,6].

As the number of COVID-19 affected individuals started increasing, both the hospitals and the healthcare workers (HCWs) geared up to work against it. And as the disease reached its peak along with the enforcement of lockdown, HCWs were taken aback psychologically. There was a constant threat of contagion in mind while working amid such catastrophic conditions [7]. There was long hauling extended working hours which imposed a higher degree of mental stress [8].

Health professionals were constantly witnessing critical patients and mass deaths which in turn was a major factor contributing to psychological trauma, thereby causing insomnia, anxiety, distress and depression. The situation was such that at one point time, there were not enough beds available for every patient and people died on stretchers which led to frustration and depressive thoughts for not being able to cater to everyone [8].

Healthcare workers also suffered from social stigma for working in COVID-19 units. Doctors were ostracized in their own residential areas for the fear of spreading the disease to other members of society. Such stigmatizing behaviours in turn added to the psychosocial bruise [9].

The Indian Healthcare Sector faced major obstructions due to a deficiency of resources to fight this sudden manifestation, and HCWs reaped the consequences. Unawareness, Ignorance and casual approach, caused by deficiency in planning and instruction, leading to unpreparedness of healthcare institutions and careless behaviour of the people. In India, there exist a vast disparity in the ratio of healthcare

facilities versus the number of people, also large population, low doctor-to-patient ratio of 1: 1,456, limited medical facilities, had further increased the amount of hardships [10].

There are Studies, which document higher suicide rates among medical professionals. Those who served in the front lines to fight against COVID-19. Health professionals struggled with additional stresses compared to the rest of the population. Therefore, pandemic no doubt has affected everyone adversely, but the health care professionals have been at the forefront of bearing the brunt despite putting their lives at risk to save people.

Thus, considering the previous reports and current data there was tremendous overall burden and stress on HCWs during the pandemic, which led to many stress disorders among the health care workers. The long-term effects on their state of mind need to be studied to take necessary measures.

This study has been designed to assess the level of stress and other psychiatric disorders among HCWs and the role of administration to overcome it.

Material & Methods

This Cross Sectional, Retrospective, Multi-Centre, Hospital-based study was conducted between July 2021 and December 2021. The targeted subjects were health care workers who were in direct contact with confirmed or suspected cases through patient admission, screening, scrutiny, diagnosis, transportation, treatment, nursing, sampling, pathogen recognition and pathologic investigation. Data was collected through self-completion online questionnaire and all participants gave informed consent, and being an survey study ethical approval was not required.

Inclusion Criteria

The inclusion criteria for this survey are kept comprehensive to obtain the views of any individual above 18 years of age who would like to respond to the survey form. Person should be a part of designated COVID Hospitals/Clinics and performed regular duty.

Exclusion Criteria

No specific exclusion criteria apart from those who are unwilling or who lack the capacity to participate.

Data Analysis

Data were collected from the study groups by the online questionnaire method. A digital questionnaire was prepared and participants were explained about the purpose of the work and informed consent was taken from each one of them.

The questionnaire was divided into 3 sections which contains information on:

- Socio-demographic factors.
- Perceptions about COVID and how health care workers managed stress.
- Degree of stress/anxiety of health care workers.

To access the Degree of stress/anxiety of health care workers the questionnaire was adopted from Source Headington Institute (2020) Managing emotions during a pandemic [11]. This section included set of 28 questions and sum of all points to the questions was done for every response separately and degree of stress was analysed using given interpretation guidelines.

Statistical Analysis

Data were compared on the basis of different key variables and analysed parameter wise. The

values of each assayed parameter were expressed as mean ± standard deviation. The inter group comparison was done using Chi-square test with p value of 0.05 or less, was considered as significant in all statistical tests.

Results & Discussion

The COVID-19 pandemic led to a histrionic effect on health care workers worldwide. The prerequisite to confront the new virus as rapidly and effectively as possible has led to an extraordinary effort to share scientific evidence about the disease.

The unexpected increase in COVID-19 patients enforced the hospitals to get converted into specialist facility for the disease. Within no matter of time, large mass of HCWs got into close unguarded contact with COVID-19 cases and several of them tested positive for the infection [1]. In this study, HCWs at Multiple centres was assessed for the level of stress and other psychiatric disorders through their opinion received in questionnaire.

First section of the questionnaire consists of the details regarding the sociodemographic background of the participants and their allied details linked with their practice (Table 1).

Table 1.Socio-demographic parameters of the study participants.

Sociodemographic data of participants				
		N=162	Frequency	Percentage (%)
1	Gender	Male	77	47%
		Female	85	53%
2	Age (yrs)	15-25	42	26%
		26-35	73	45%
		36-45	38	23.50%
		46-55	7	4.30%
		56-65	1	0.60%
		66-75	1	0.60%
3	Background	Urban	129	80.00%
		Rural	33	20.00%
4	Marital status	Married	98	61.00%
		Single	62	38.00%
		Widow	2	1.00%
5	Years of experience (yrs)	<1 yr	29	18.00%
		1-5 yrs	51	32.00%

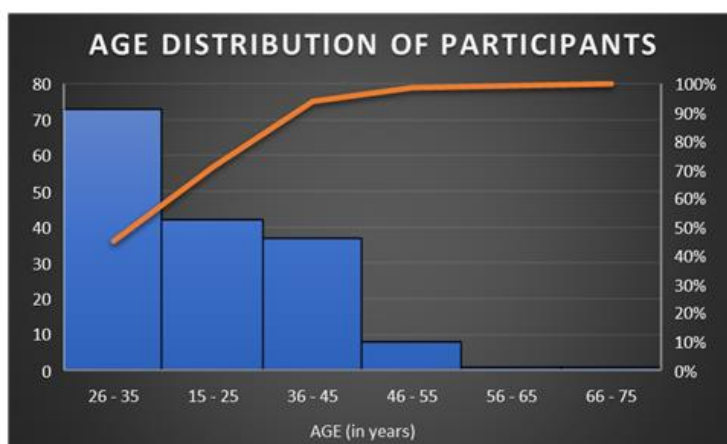
		6-10 yrs	35	21.60%
		>10 yrs	47	29.00%
6	Source of information	News media	47	29.00%
		Social media	21	13.00%
		Training by the hospital management, who, moph	62	38.30%
		Official government website	26	16.00%
		Family and friends	6	3.70%
7	Working capacity	Not sure	16	9.90%
		Usual workload	18	11.10%
		Below capacity	24	14.80%
		Above capacity	53	32.70%
		Well above capacity	51	31.50%

Regarding gender specificity, previously published studies also comprise of the higher representation of females among healthcare workers, who performed duties during Covid-19 pandemic. Lotta G et al., 2021 concluded that women constitute much larger proportion as a healthcare workforce as compared to men [12].

Whereas, Lopez-atanes M et al., 2021 also came to a conclusion that the proportion of females was 74.6% higher among the studied population

[13]. Though in our study, the relative difference between the two genders is not much but still females comprised of 6% higher strata.

The age (yrs) wise distribution reveals that the majority of participants were belonging to age-group of 26-35 years, followed by those belonging to the brackets of 15-25 years and 36-45 years, in the descending order. Those in the age-groups of 56-65 years and 66-75 years, were the least ones (Graph 1).



Graph 1: Age distribution pattern of the participants.

Previously published data from Gholami M et al., 2021 in their systematic review reported that the mean age of HCWs belonged to the age group of 36-40 years in their studied population [14] While, Nguyen LH et al, 2020 in their prospective study, found that the mean age group of HCWs was in the age group of 35-44 years [15].

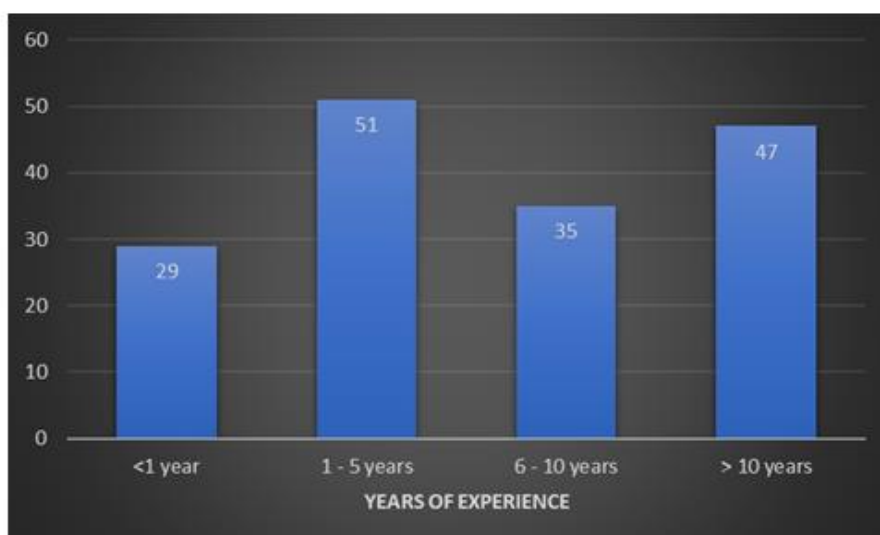
The difference in the results of age wise distribution can be corroborated to the fact that age being a demographic variable, the biases of region and race do exist. The major difference between the results of this study and the others lies in the fact that in our study, mostly young adults participated to a larger extent whilst it was the people in the middle age group, in the results of other studies.

Though in covid 19 pandemic, every section of HCWs, irrespective of the background, has worked diligently by putting their lives at back

and lives of people at the forefront, in this study we had maximum subjects belonging to the urban background.

A larger section of the participants was married, followed by those who were single in our study population. The least section comprised of those who were either separated or widowed. As per the study conducted by Kang et al., 2020 and Lai et al., 2020, results are in accordance stating that the psychological suffering speckled by gender (higher for women), health profession (higher for nurses), and level of exposure to COVID-19 (higher for those working in epicentre of the pandemic) [6, 15].

Even though covid 19 pandemic has spared no one irrespective of their caste, colour, creed, education or prior experience, here, in our study, we found that majority of people fall into the categories of 1-5 years and more than 10 years of experience (Graph 2).



Graph 2: Years of work experience among study participants.

The percentage of people relying on the different sources for the retrieval of COVID 19 related information during pandemic among participants depicts that larger section of people (38.3%) depended upon the training by the hospital management in combination with information released by WHO and MoPH, followed by news media (29.6%), official government website (15.4%), social media (13%) and family and friends (13.7%).

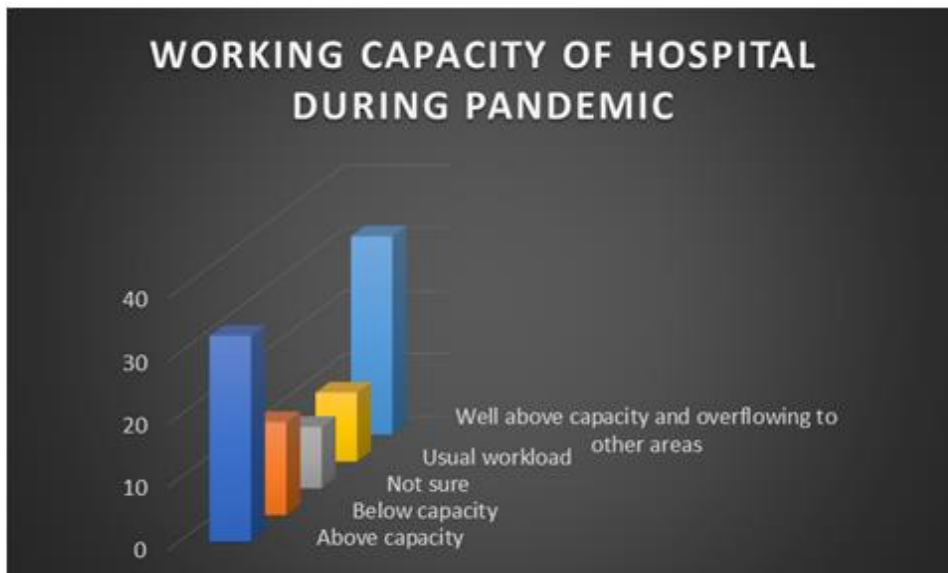
During the initial phase of pandemic, many misrepresentations and rumours are spreaded in the social media, and so on. For example,

regarding the scarcity of PPEs, defects in the used PPEs; and any infection contracted by HCWs are painted excessively. This leads to mental health trauma and aggravates anxiety, depression and distress among the HCWs (Snehil Gupta and Swapnajeet Sahoo, 2020) [16].

According to an article published by New York University in the science daily, traditional media sources including TV channels and newspapers accounted for 91.2 % of resource followed by government website (87.6%) and social media (73.6) for the retrieval of Covid related details among west. The difference in the results may be

due to the region, race and culture bias. In our study, Maximum people (93%) have entrusted upon authentic and reliable sources of information regarding covid19.

The opinion of HCWs regarding working capacity of their respective hospitals during pandemic condition states that the condition prevailing was well above capacity of the hospital and outflowing to other areas (Graph 3).



Graph 3: Working capacity of Hospitals during Pandemic condition.

The second section of the questionnaire included set of 8 questions, having reply in YES and NO format. And the questions were related to how the individuals managed overwork, fear and anxiety during their Covid duties.

Physical exertion directly correlates with not being able to take needed rest. In our study, 42% people got physically exhausted whereas those who were able to have rest formed a comparatively larger section of 58%. Study published by Van Roekel H et al., 2021 in their article on the physical exhaustion of the HCWs in covid 19 found that during pandemic HCWs had much more physical exhaustion as compared to routine duties of hospital [17].

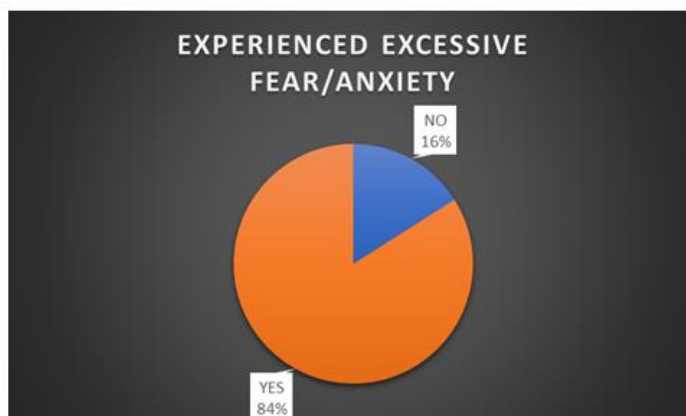
In our study, more than 50% of subjects opined about having regular or routine sleeping pattern during pandemic. Van Roekel H et al., 2021 in their article on the sleep problems in covid 19 among HCWs also found that HCWs had significantly more sleep problems in pandemic as compared to routine time [17].

Among both the groups, people who were able to socialize with family and friends formed only a

6% larger section (53% as compared to 47%). Report states that, there is increased incidence of suicide observed during and post pandemic condition. Shreffler J et al., 2020 in their scoping review on the impact of covid 19 on the wellness of HCWs found that anxiety and stress had an adverse effect on the self-efficacy of the individual. They recommended to resort to social support systems for their emotional stability [18].

As per systematic review of Muller AE et al., 2020, the most noticeable finding was that most of the HCWs had denied individual mental health services and preferred occupational equipment (PPE) availability to benefit their psychology more while undertaking covid duties [19]. Similar findings were shared by Chen et al., 2020 and Chung et al., 2020 also. In our study too, the maximum number of participants denied seeking the expert psychological support [20,21].

In our study maximum number of healthcare workers (84%) experienced great fear and anxiety during the covid19 pandemic and only 16% did not experience it (Graph 4).



Graph 4: Fear/Anxiety among Health care workers.

Shaukat N et al., 2020 states that there are extreme levels of psychological effects among the HCWs including stress, anxiety, fear, insomnia and post-traumatic stress disorder during pandemic [22]. Sahin et al., 2021 also states in their article that they found that 50% of HCWs had mild anxiety and 17% had severe anxiety [23]. The results of our study too corroborate with the results of other studies were a majority (84%) of HCWs faced severe psychological effects.

Considering the emotional upheavals among the HCWs during pandemic, 59% participants experienced an array of emotions like sadness, anger, frustration during pandemic in our study, while 41% denied experiencing any of it at all. Koontalay et al., 2021 in their qualitative systematic review concluded that limited preparation for the pandemic and the lack of protocols and equipment lead to the development

of marked levels of stress, anger and hopelessness among HCWs [24] Fawaz M and Samaha A, 2020 too observed similar psychological distress among quarantined healthcare workers of Lebanon [25].

Appelbom S et al., 2021 in their case study concluded and emphasized on the importance of having a psychologist in hospitals [26]. The psychologist supervised as a support model focused on the people experiencing severe stress reactions and provided support through a series of daily group sessions, individual sessions, education and training. In our study, 81% of subjects showed their interest in having a permanent psychologist inside the hospital. (Graph 5) Cao J et al., 2020 in their letter to the editor also states and reached to a conclusion that psychological support helps in alleviating adverse effects of stress [27].



Graph 5: Opinion of participant HCWs on need of permanent Psychologist

Covid 19 pandemic has definitely affected the mental well-being of every HCWs and rampant tides of emotional turmoil have had a negative impact on the individual. Therefore, the need for psychological support has been stressed upon by the presence of psychologist who can aid in decreasing such high levels of stress.

Kisely and colleagues in a meta-analysis and review reported about the psychological reactions of HCWs working in any clinical setting during emerging virus outbreaks and advised for the implementation of psychological first aid based on the individual needs of the staff to alleviate risk. Debriefing later on was found to

be useless and in fewer cases it even worsens the post-traumatic stress disorder (PTSD) [28].

The section 3 of the Questionnaire contains 28 questions and was framed to assess the degree of stress faced by healthcare workers during pandemic. Participants were from different departments of the hospital and to make calculation simpler, we divided responders in 3 groups, namely Doctors, patient care department (nursing staff and housekeeping) and support service department including rest of participants. Out of 162 participants we excluded 6, considering their responses inappropriate for the analysis (Table 2).

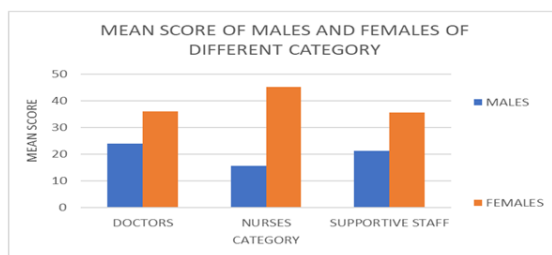
Categories	Subcategory	N	Degree of stress			
			0-25	26-50	51-75	76-100
All participants		156	41.60%	29.50%	24.40%	4.50%
Gender wise	Male	72	51.40%	30.50%	16.70%	1.40%
	Female	84	33.30%	28.60%	30.90%	7.20%
Department wise	Doctors	56	39.30%	25.00%	26.80%	8.90%
	Patient care deptt	41	36.60%	24.40%	34.10%	4.90%
	Support services	59	49.50%	37.30%	15.25%	0.00%
Marital status	Married	95	38.90%	28.40%	27.40%	5.30%
	Single	61	45.90%	31.10%	19.70%	3.30%
Agewise	<30yrs	81	47.00%	29.60%	22.20%	1.20%
	>30yrs	75	36.00%	29.30%	26.70%	8.00%
Years of experience	<5yrs	76	38.20%	35.50%	26.30%	0.00%
	>5yrs	80	45.00%	23.75%	22.50%	8.75%
Doctor	Male	32	43.75%	28.12%	25%	3.12%
	Female	24	33.33%	20.83%	29.16%	16.66%
Patient care deptt	Male	9	55.55%	33.33%	11.12%	0.00%
	Female	32	31.25%	21.90%	40.60%	6.25%
Support services	Male	31	58.07%	32.25%	9.68%	0.00%
	Female	28	35.72%	42.86%	21.42%	0.00%

Table 2: Degree of stress among participants calculated as per response.

There was a point system on each question and points ranged from 0 to 4. The data analysis was done by adding these points on each question and the total score on each response was achieved.

After calculating the score for each participant, the stress level was interpreted according to the score achieved. In our study out of 156 participants, we observed that almost 59.4% health care workers suffered from moderate to very high degrees of stress.

While comparing the degree of stress Gender wise, we found that 51.4% of male had low degree of stress, while 16.7% had high degree of stress level. Among females 33.3% had low degree of stress, and 30.9% had high and 7.2% possess very high degree of stress. We observed that female suffered more with moderate to very high degree of stress (66.7%) as compared to male (48.6%). (Graph 6).



Graph 6: Mean score values of different category of HCWs gender wise.

It became more clearer when we compared stress scores (Mean and SD) using Unpaired t-test, where highly significant difference was observed in the stress scores between male and female healthcare workers. Female HCWs had significantly more stress than their male counterparts with p value ≤ 0.001 .

In spite of the fact that the widely held studies validate the preventive role of professional training towards onset of PTSD and flattens the gender gap which is commonly observed in different PTSD reports. Majority studies on HCWs dealing with covid 19 pandemic incline towards higher PTSD incidence among females. Women were found to be affected most by Post Traumatic stress Syndrome (PTSS) in three SARS studies [6,29,30].

In a study conducted by Huang JZ., 2020 on Mental health survey of medical staff in a tertiary infectious disease hospital for COVID-19, the incidence of anxiety among female medical staff was found to be higher in comparison with males [25.67% (48/187) vs 11.63% (5/43), $Z=-2.008$, $P=0.045$], while the SAS score is also higher in female medical staff as compared to male [(43.78±11.12) vs (39.14±9.01), $t=-2.548$, $P=0.012$] [31].

While comparing the degree of stress between the participants according to their marital status,

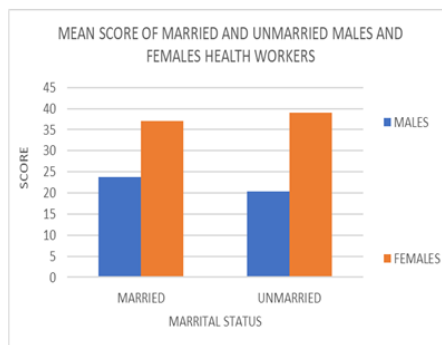
we found that 38.9% of married participants had low degree of stress, while 27.4% had high degree of stress level. Among singles 45.9% had low degree of stress followed by 19.7% with high degree of stress.

We observed that married participants suffered a more moderate to very high degree of stress (61.1%) as compared to singles (54.1%). We further compared stress scores (Mean, SD) of male and female among married and single HCWs. We detected that there is no significant statistical difference in the degree of stress among married males and females (p value ≤ 0.063), whereas there was highly significant difference in the stress levels in males and females among singles, females suffered more than males with p value ≤ 0.001 .

Three Previously published studies have engrossed on the significance of marital status, two of which discussed about SARS outbreaks and one is focused on current COVID-19 pandemic situation. Chan A (2004) in a study on 661 HCWs in Singapore exhibited that in comparison with the married ones, those who were not married are the one who got badly affected [32]. In contrast, a further study conducted by Sim et al., 2004 in Singapore confirmed a positive correlation between post-traumatic morbidities and married status [33].

Similarly, a recent case control study about HCWs confronting pandemic exhibited that married, divorced or widowed operators conveyed higher scores in vicarious traumatization symptoms in comparison to

unmarried HCWs [34]. In our study we observed that married were affected more and in further analysis singles female were affected more, while among married male and female both were affected equally (Graph 7).



Graph 7: Mean score values of HCWs gender as well as marital status wise.

In our study the age of participants ranged from 19 years to maximum 71 years. Among all participants, 81 (51.9%) were <30 years of age and 75 (48.1%) were >30 years of age. We observed that participants in the age group of >30 years suffered more with moderate to very high grade of stress (64%) as compared to the participants of group with <30 years (53%).

However, the result what we got, was apparently looking paradoxical and age range was not proving the hypothesis. Thus, we further used Pearson's correlation to correlate the age with stress score. We observed that there is a statistically significant negative correlation observed between age and stress levels of HCWs. i.e., The stress levels decreased with the increasing age ($p < 0.05$) probable due to experience and wisdom developed thereof among individual.

Previous studies conducted on SARS outbreak and the COVID-19 pandemic conveyed that younger HCWs exhibit a greater risk of developing PTSS [33,35,36] which is supporting our obtained results. In yet another studies published by Reynolds et al., 2007; and Lancee et al., 2008 showed that there is more prevalence of psychiatric disorders among younger HCWs in healthcare system [30,37]

In further analysis, among all participants 56 (35.9%) were doctors. We observed that almost 60.7% of doctors suffered from moderate to very high degrees of stress. Among doctors, we further compared the stress levels between the

males and females and observed that female doctors suffered with stress disorder more as compared to the male doctors (66.70% vs 56.75%), However there was no significant difference in the frequency of male and female doctors experiencing stress with p value - 0.136.

Among all participants 41 (26.3%) were from the patient care department (i.e., nursing staff and housekeeping). We observed that almost 63.4% of participants from the patient care department suffered from moderate to very high degrees of stress. We observed that female staffs suffered with more stress disorder than male staffs (68.25% vs 44.50%) with highly statistically significant difference in male and female nursing staff/housekeeping staff experiencing stress with p value <0.001.

59 (37.8%) participants were from support service department (i.e., Admin, Biomedical engineering, Billing department, Pharmacy, Technicians etc) and we observed that almost 50.5% of participants from the support service department suffered from moderate to high degrees of stress. We observed that female staffs suffered more with stress disorder than the male staffs (64.30% vs 42.5%) with highly significant difference in male and female paramedical / support services experiencing stress with p value - 0.001.

While comparing degree of stress among all the departments, we observed that Nursing staff and housekeeping personnel had more participants with moderate to very high degree of stress

(63.4%) as compared to the doctors (60.7%) and support services (50.5%).

Support services personnel had lesser degree of stress with a greater number of participants with low degree of stress (49.5%) as compared to the doctors (39.3%) and patient care department (36.6%). No participant from the support services had a very high degree of stress. While Doctors suffered more with very high degree of stress (8.9%) as compared to the other departments.

However, while comparing Stress Scores (MEAN, SD) amongst doctors, nurses and supportive staff by Unpaired t test, we observed that all categories of HCWs i.e., Doctors, Nurses and supportive staff experienced similar degree of stress. We further compared the Stress scores (Mean, SD) of male and female HCWs of different category by unpaired t-test and observed that females experienced more stress than males in all categories with significant p values.

Tham et al., 2004, on their study covering 96 emergency HCWs, found greater burden of PTSS among nurses than among physicians after six months of the 2003 SARS outbreak [38]. An additional study by Phua et al. (2005) established this finding in 99 HCWs [39]. In conclusion, latest study on 1257 hospital physicians and nurses caring for COVID-19 patients is also suggestive of same conclusion [6].

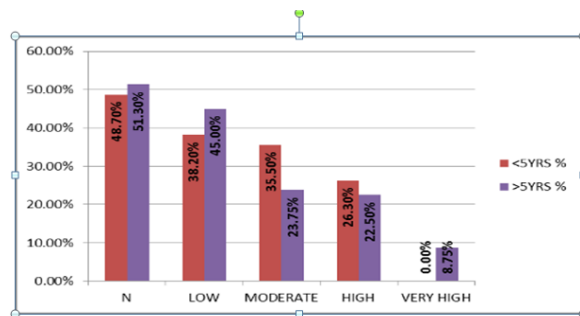
In a study by Huang JZ et al, 2020 on Mental health survey of medical staff, the prevalence of anxiety among nurses was found to be higher in

comparison with doctors [26.88% (43/160) vs 14.29% (10/70), $Z=-2.066$, $P=0.039$], and the SAS score among nurses was higher than among doctors [(44.84±10.42) vs (38.50±10.72), $t=-4.207$, $P<0.001$] [31].

Our study too showed similar findings while comparing percentage of HCWs, department wise, affected with more degree of stress. However, while comparing the score achieved by unpaired t-test, we found no statistically significance difference, and all HCWs were affected equally. In the study by Lai et al, 2020, they reported that in Wuhan, Nurses, women, frontline workers had experienced more severe symptoms of depression, anxiety, insomnia and distress (e.g., severe depression among physician's vs nurses: 24 [4.9%] vs 54 [7.1%]; $P=0.01$; severe anxiety among men vs women: 10 [3.4%] vs 56 [5.8%]; $P=0.001$. Studies too support our findings comparing stress level in male and females among all categories [6].

Data were also analyzed on the basis of the Years of work Experience, keeping hypothesis that this factor can also affect differently to cause stress disorder in the health care workers.

We observed that 76 participants (48.7%) had experience of <5 yrs and 80 (51.3%) had >5 yrs of experience. participants with experience of <5 yrs had more moderate to high degree of stress as compared to participants with >5 yrs of experience (61.8% vs 55%). However, 7 participants (8.75%) with >5 yrs of experience suffered with very high degree of stress, while no participant with <5 yrs of experience had such very high degree of stress. (Graph 8).



Graph 8: Distribution of HCWs as per their years of Experience.

We further compared the stress scores (Mean, SD) of the HCWs with <5 yrs and >5yrs of experience using Mann Whitney U test. We observed that, there was statistically significant difference in the stress scores of HCWs with <5 years of experience and HCWs with > 5 years' experience. In the patient care department

(nurses/housekeeping) and paramedical / support services personnel's mean stress scores were significantly less in more experienced HCWs (>5 years' experience) with p value <0.047 and < 0.043 respectively. While in doctors, mean stress scores were significantly more in doctors having >5 years' experience (p value <0.026). This

could be due to participation of fewer doctors with >5 years' experience having very high stress scores.

From a broader viewpoint, studies further point out an association between less years of work experience and an augmented PTSS risk among HCWs, as defined in previous SARS studies [37,40] and in an COVID-19 study.⁶ Our study also showed the similar results. There are many studies and surveys done in the previous years on the impact of pandemic on HCWs experiencing stress disorders [6,29,30,32,36,37,41].

To the best of our knowledge our study is the first of its kind assessing stress levels in the health care workers on every aspect in great details. Our study also observed that instead of using Headington scale to classify the degree of stress, if we can compare stress scores using different statistical tools, obtained results are more reliable and it can accurately assess the degree of stress [42-44].

Conclusion

This retrospective project was carried out at multiple centres to assess the level of stress and other psychiatric disorders among HCWs during the Covid-19 Pandemic and the role of administration to overcome it. Data were compared on the basis of different parameters, *i.e.*, category, gender, age, marital status, years of work experience per se with the degree of stress. Our study shows significant degree of stress among the healthcare workers during and post pandemic. Nursing staffs and doctors were affected significantly with higher degree of stress. Overall higher stress was observed among females as compared to the males; and among youngsters and HCWs with lesser years of work experience.

Our study suggests paying extra attention towards the psychological standing of frontline workers during the COVID-19 pandemic. Medical organizations should also reinforce the training of psychological aids of their medical staff to combat such emergencies and stressful conditions. Special attention should be paid towards the mental health of the female nurses. Work distribution must be monitored closely with regular breaks during duty hours. There should be regular counselling of staffs and concerns to be made towards their grievances. We also recommend appointing clinical psychologist for such interventions and needed psychological support for the staffs.

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