

Fear of COVID-19 among Staff Nurses Working in Tertiary Care Hospital, Erode, Tamil Nadu: A Cross-sectional Study

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ABSTRACT

Introduction: The new Coronavirus Disease 2019 (COVID-19) has put a strain on healthcare workers, and the virus offers major personal and professional threats. Mental health has been affected by the COVID-19 epidemic, causing them to be fear of becoming sick. During the COVID-19 pandemic, healthcare professionals have been psychologically impacted including fear, anxiety, and depression.

Aim: To determine the level of COVID-19 fear among hospital nurses in tertiary hospital care hospital, Erode district, Tamil Nadu.

Materials and Methods: This cross-sectional survey study was conducted among employees of Government Erode Medical College Hospital and nearby Hospitals in Erode district, Tamil Nadu, India, from July 2020 to August 2020, to evaluate the fear of COVID-19 using the Fear of COVID-19 Scale (FCV-19S). It used a self-administered questionnaire (online Google form survey). It consisted of two parts, first was socio-demographic details and second was fear of COVID-19 Scale (FCV-19S). The inclusion criteria of participants were all staff nurses working in COVID-19 ward, for minimum of three months in Erode district and willingness to participate. One-way Analysis

of Variance (ANOVA), F-test and student Independent t-test analysis was performed to examine the relationship between demographic characteristics and fear levels.

Results: The study included a total of 277 staff nurses. The participant's mean age was 32.25±6.45 years, with females accounting for 93.5% of the total. The scale's internal reliability was excellent, with a Cronbach's alpha of 0.902. Overall, the mean COVID-19 fear score was (59.3%) 20.8 out of 35. The maximum fear score was for the statement "I am most afraid of Corona" (65%) and the minimum fear score was for "I cannot sleep because I am worried about getting Corona" (51.8%). Fear levels were higher in females (p-value=0.02), overweight people (p-value=0.001), those living in joint families (p-value=0.01), married individuals (p-value=0.03), participants with two children (p-value=0.001), and Primary Healthcare Centre (PHC) staff (p-value=0.001).

Conclusion: The survey found a high level of fear in staff nurses who work in COVID-19 wards. Steps must be taken to preserve their health, by providing adequate resources to relieve their worries and anxiety, enabling them to carry out their frontline duties in the face of the COVID-19 epidemic.

Keywords: Anxieties, Coronavirus disease-19, Fear, Healthcare workers, Mental health

INTRODUCTION

The Coronavirus Disease 2019 (COVID-19), and the potential of mortality it poses, have caused widespread concern among Healthcare Workers (HCWs) and their families throughout the world. A pandemic alters a community's whole environment, causing psychological concerns such as stigmatisation, fear, and prejudice, which are exacerbated due to a lack of complete and reliable data for the total population [1]. Controlling the public reaction, the pandemic-induced panic is one of the most difficulties in dealing with the pandemic due to, as previous SARS and Ebola epidemics have shown, anxiety worsens the disease's effects [2].

Fear can be described as an adaptive response to the environment is a defence mechanism designed to improve the chance of survival [3]. Fear, on the other hand, can be maladaptive if it is not adequately tuned to the real threat. Fear might be triggered by novelty, such as a pandemic, which adds uncertainty to a familiar environment. When a person's fear is excessive, it can have negative consequences on both an individual and societal level (like, mental health issues like phobia and social anxiety) (like, panic shopping or xenophobia). Insufficient fear, on the other hand, has the potential to harm individuals and society, by ignoring government actions to restrict the coronavirus spread or implementing irresponsible policies which are overlook the hazards [4-6]. As the COVID-19 epidemic grows, so does the level of dread and concern [7].

The whole people are affected by the pandemic's fear, forced confinement, and stress. But, as previously indicated, health professionals on the

front lines of care also have challenges. An increase in the number of confirmed cases, combined with long working hours, isolation of health personnel from their families and loved ones, and the fear of contagion, could translate into a high frequency of depression, suicidal ideation, suicide attempts, anxiety, substance abuse, and labour burnout [8-11].

A study from China found that half of HCWs believed they had little control over being infected whether they followed or maintained infection prevention strategies. During the SARS outbreak, high stress, tremendous workload, and abrupt changes in regular medical procedures made it hard for many HCWs to properly adopt preventative practises, despite understanding their purpose and the potential harm of not doing so [12]. Medical researchers throughout the world have established measures to quantify the impact of the present situation and its emotional ramifications using measures that focus on the stress response and dread [13].

The emergence of COVID-19 has significantly impacted the psychological and mental well-being of frontline HCWs, including nurses. The possibility of SARS-CoV-2 infection spreading from person to person, as well as the presence of infected asymptomatic persons, are significant sources of concern and fear among HCWs [14]. Studies found that mental disturbances were more common in nurses compared to the physicians [15]. Nurses in SARS-affected hospitals showed more distress than other hospital workforce [15]. Nurses are the largest occupational groups that directly and intensively are in constant contact with their patients. Working in high-risk departments was another main reason of poor mental health in these studies. Being

at the high-risk of contagion in such environments will increase the psychological problems, including fear, anxiety, stress [16]. The HCWs had three times the rate of psychiatric morbidity as the general public as a result of SARS, at 75.3% and 24%, respectively [17].

This study aimed at assessing the prevalence and predictors of the level of fear of COVID-19 in hospital staff nurse working in tertiary hospital in Erode district, Tamil Nadu due to the outbreak of COVID-19.

MATERIALS AND METHODS

This cross-sectional survey study was conducted among employees of Government Erode Medical College Hospital and nearby Hospitals in Erode district, Tamil Nadu, India, from July 2020 to August 2020, to evaluate the fear of COVID-19 using the Fear of COVID-19 Scale (FCV-19S). Ethical clearance was obtained from the Government Erode Medical College and Hospital, Perundurai, Erode, Institutional Ethics Committee (Ref No-IEC/001/GEMC&H/2020. Dated: 31.07.2020).

Sample size calculation: Using Epi info software version 5.4.1, 50% prevalence, a 4% margin of error, and a 95% confidence level were used to establish the sample size. The study requires a minimum sample size of 220 people [18]. The modest predicted effect size was set in order a high sample size was used to find meaningful correlations between variables.

Inclusion criteria: All staff nurses working in COVID-19 ward for minimum of three months in Erode district and willingness to participate were included in the study.

Exclusion criteria: Staff who were non willing to participate in study, incomplete surveys and the other than staff nurse healthcare workers were excluded from the study.

Each of the seven items on the FVC-19S has, options of a five-point Likert scale and highest possible total score is 35, the maximum the Fear of COVID-19 among participants [19].

A total of 277 participants were surveyed during July 2020 to August 2020. Prior to completing the survey form, study research participants gave their written digital permission. Participants gave their consent by ticking the designated box. The study did not gather personal identifiers such as names. The participants were employees of Government Erode Medical College Hospital and nearby Hospitals in Erode district. These hospitals were contacted because they were the largest hospital that had been converted to exclusive COVID-19 dedicated hospital in Erode.

Procedure

Nurses working in COVID-19 wards were identified by reviewing their profiles in the nursing offices of the hospitals. After explaining the study objectives and acquiring permission from hospital in charge, online Google form survey questionnaires were distributed to staff nurses and asked to take part in this study during their off-times.

Online google form survey questionnaires were distributed to staff nurses for an online poll (e.g., Facebook, WhatsApp, Twitter). About 300 staff nurse were approached, and 277 staff nurse took part in the survey. Only those who consented to the online consent were allowed to participate in the study. All participants were guaranteed anonymity and confidentiality of their data. The scale's internal reliability was excellent, with a Cronbach's alpha of 0.902.

STATISTICAL ANALYSIS

One-way Analysis of Variance (ANOVA), F-test and student Independent t-test were used to examine the relationship between demographic characteristics and fear levels. Pearson's Chi-square test was used to examine the relationship between demographic characteristics and FCV-19S. The data was represented using a box plot chart. Two-tailed tests were employed for significance testing, with a p-value <0.05 being statistically significant. The Statistical Package for Social Sciences (SPSS) version 22.0 and STATA (version 12) software were used for statistical analysis.

RESULTS

A total of 277 staff nurses (259 females, 93.5%; 18 males, 6.5%) with a mean age of 32.3±6.5 years participated in the study (male mean age was 31.4±6.6, female mean age was 32.3±6.6). Many staff nurses working in COVID-19 wards were contract Medical Services Recruitment Board (MRB)/Adhoc staff nurse (69.3%), most of them having total professional experiences between 1-5 years (40%). Majority of staff nurses were working at Outpatient Department for screening COVID-19 (58.8%) [Table/Fig-1]. The study reported, prevalence of fear of COVID-19 was 21.2% among 277 healthcare workers during COVID-19 outbreak.

Demographic variables	No. of staffs (n=277) (%)
Gender	
Male	18 (6.5%)
Female	259 (93.5%)
Age (years)	
21-30 years	124 (44.8%)
31-40 years	119 (43%)
41-50 years	20 (7.2%)
51-60 years	14 (5.1%)
Body mass index (kg/m²)	
Underweight (less than 18.5)	25 (9%)
Normal (18.5 to 24.9)	122 (44%)
Overweight (25.0 to 29.9)	95 (34.3%)
Obese (30 or higher)	35 (12.6%)
Mean BMI of the whole population	24.8 ± 4.4
Type of family	
Nuclear family	174 (62.8%)
Joint family	97 (35%)
Extended family	6 (2.2%)
Marital status	
Married	220 (79.4%)
Unmarried	53 (19.1%)
Divorced	2 (0.7%)
Widow	2 (0.7%)
Number of children	
No children	91 (32.9%)
One child	68 (24.6%)
Two children	118 (42.6%)
Present residency	
Within hospital campus	53 (19.1%)
Within 5 km from hospital campus	107 (38.6%)
More than 5 km from hospital campus	117 (42.2%)
Types of employee	
Contract employee and specially recruited for COVID-19	223 (80.5%)
Regular time scale pay employee	54 (19.5%)
Total professional experiences in years	
Less than 1 year	15 (5.4%)
1-5 years	111 (40.1%)
6-10 years	68 (24.6%)
11-20 years	66 (23.8%)
>20 years	17 (6.1%)
Monthly family income (Indian currency)	
Less than 10,000	29 (10.5%)
Rs. 10,000-20,000	165 (59.6%)
Rs. 21,000-40,000	42 (15.2%)
Rs. 41,000-60,000	20 (7.2%)
>Rs. 40,000	21 (7.6%)
Name the ward frequently posted for last 3 months	
Ward and intensive care units	114 (41.2%)
COVID-19 Outpatient Department	163 (58.8%)

Currently working at	
Corona-dedicated government hospital	60 (21.7%)
Government hospital/Headquarters (GH)	37 (13.4%)
Government Primary Healthcare (PHC)/Additional PHC	130 (46.9%)
Medical college	29 (10.5%)
Private hospital	19 (6.9%)
Quarantine facility	2 (0.7%)
Effect of COVID-19 ward duty on relationship with Family/Friends	
Major interference	25 (9%)
Minor interference	108 (39%)
No interference	144 (52%)

[Table/Fig-1]: Demographic details of Staff nurse.

Out of total, 79 (28.5%) of staff nurse agreed that thinking about COVID-19 made them uncomfortable, 57 (20.6%) of staff nurses disagreed that they feared losing their life to COVID-19 and 91 (32.9%) of staff nurses strongly disagreed of being unable to sleep due to fear of COVID-19 [Table/Fig-2].

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	n (%)	n (%)	n (%)	n (%)	n (%)
1. I am most afraid of COVID-19	35 (12.6%)	31 (11.2%)	100 (36.1%)	53 (19.1%)	58 (20.9%)
2. It makes me uncomfortable to think about COVID-19	40 (14.4%)	39 (14.1%)	69 (24.9%)	79 (28.5%)	50 (18.1%)
3. My hands become clammy when I think about COVID-19	39 (14.1%)	91 (32.9%)	77 (27.8%)	41 (14.8%)	29 (10.5%)
4. I am afraid of losing my life because of COVID-19	47 (17%)	57 (20.6%)	64 (23.1%)	50 (18.1%)	59 (21.3%)
5. When I watch news and stories about COVID-19 on social media, I become nervous or anxious.	32 (11.6%)	58 (20.9%)	60 (21.7%)	68 (24.6%)	59 (21.3%)
6. I cannot sleep because I am worrying about getting COVID-19	62 (22.4%)	91 (32.9%)	50 (18.1%)	47 (17%)	27 (9.8%)
7. My heart races or palpitations when I think about getting COVID-19	63 (22.7%)	82 (29.6%)	52 (18.8%)	42 (15.2%)	38 (13.7%)

[Table/Fig-2]: Fear of COVID-19 scoring among staff nurse.

[Table/Fig-3] shows overall mean COVID-19 fear score was 20.8 (59.3%) out of 35. 65% of staff nurses were afraid of COVID-19 and 51.8% being unable to sleep due to worrying about getting COVID-19.

Statements	Fear of COVID-19 scale score		
	Mean score	SD	%
1. I am most afraid of COVID-19.	3.3	1.3	65%
2. It makes me uncomfortable to think about COVID-19.	3.2	1.3	64.0%
3. My hands become clammy when I think about COVID-19.	2.8	1.2	55%
4. I am afraid of losing my life because of COVID-19.	3.1	1.4	61.2%
5. When I watch news and stories about COVID-19 on social media, I become nervous or anxious.	3.2	1.3	64.6%
6. I cannot sleep because I am worrying about getting COVID-19.	2.6	1.3	51.8%
7. My heart races or palpitations when I think about getting COVID-19.	2.7	1.3	53.6%
OVERALL	20.8	7	59.3%

[Table/Fig-3]: Fear of COVID-19 scale.

[Table/Fig-4] reveals the association between fear of COVID-19 score with demographic details. Significant association was found

between COVID-19 fear and being a female, overweight, having a joint family, married, having two children and staff nurses working at Primary Healthcare (PHC).

Demographic variables	n	COVID-19 fear score		Oneway ANOVA F-test/t-test
		Mean	Standard deviation	
Gender				
Male	18	17.3	7.8	t=2.21; p-value=0.02*
Female	259	21.0	6.8	
Age				
21-30 years	124	20.7	7.4	F=0.71; p-value=0.54
31-40 years	119	20.5	6.9	
41-50 years	20	22.9	5.7	
51-60 years	14	20.2	5	
Body Mass Index (BMI)				
Underweight	25	17.8	7.7	F=6.75; p-value=0.001*
Normal	122	19.4	6.2	
Overweight	95	22.9	7.3	
Obese	35	21.9	6.4	
Religion				
Hindu	178	21.1	6.6	F=1.20; p-value=0.30
Christian	85	19.8	7.1	
Muslim	14	22	9.5	
Type of family				
Nuclear family	174	19.8	6.7	F=3.22; p-value=0.01*
Joint family	97	22.5	7	
Extended family	6	21.7	9.3	
Marital status				
Married	220	21.3	6.8	F=3.15; p-value=0.03*
Unmarried	53	18.2	6.9	
Divorced	2	19	6	
Widow	2	17	5	
Number of children				
No children	91	18.1	6.7	F=12.33; p-value=0.001*
One child	68	20.9	7	
Two children	118	22.7	6.5	
Present residency				
Within hospital campus	53	21.4	7.7	F=1.99; p-value=0.13
Within 5 km from hospital campus	107	19.7	6.9	
More than 5 km from hospital campus	117	21.5	6.6	
Currently working at				
Corona dedicated government hospital	60	19.3	6.7	F=4.91; p-value=0.001*
Government hospital/ Headquarters (GH)	37	19.4	6.3	
Government PHC	130	22.6	7.1	
Medical college	29	20.8	7.4	
Private hospital	19	15.8	3.2	
Quarantine facility	2	18	0	

[Table/Fig-4]: Association between fear of COVID-19 score and staff nurse demographic variables.

*p-value <0.05 was considered as statistically significant

DISCUSSION

The study aimed to assess the prevalence and predictors of the level of fear of COVID-19 in hospital staff nurse working during the outbreak of COVID-19. Although the impact of the epidemic on hospital staff's mental health should not be overlooked, few authors have addressed this on public health and the mental health of healthcare workers.

Study by Cornelio S et al., showed that nurses, who are a vital component of the COVID-19 epidemic, experience varying degrees of stress and anxiety due to a variety of factors [20]. Another research on anxiety and depression among Nepalese healthcare professionals found that 38% of healthcare workers in the COVID-19 environment were anxious or depressed [21]. According to a research done in India during the swine flu outbreak, 98.5% of health workers had mild anxiety (Beck's Anxiety Inventory) [22]. COVID-19 has caused substantial mental health difficulties among Indian doctors, according to recent studies [23-25]. Another study found 52.8% of the healthcare workers in India had COVID-19 pandemic-related burnout [26]. According to another research, the epidemic has caused stress and sleeplessness in 73.9% and 30% of dermatologists in India, respectively [27]. Online survey in May 2020 by Soraci P et al., in Italy, one of the most affected countries, administered the Italian versions of the FCV-19S, the Hospital Anxiety and Depression Scale (HADS), and the Severity Measure for Specific Phobia-Adult (SMSP-A) to 249 participants [28].

Reznik A et al., applied the FCV-19S to a sample of 850 participants from Russia and Belarus. The reported mean fear score was lower than in the present study sample (17.2 vs. 20.8). These findings are preliminary, based on data collected at one moment in time in two nations at separate times when government actions to COVID-19 varies, as does the nature of public communication about the condition. Therefore, caution should be exercised regarding comparisons and conclusions about COVID-19 fear and its impact. But both studies reported higher levels of fear in female than in male participants [29].

As far author's knowledge and literature survey, the FCV-19 scale was not used in any of research studies in Tamil Nadu. This study also analysed the association between level of fear of COVID-19 and predictors like, marital status, number of children, current residency, family type, and terror levels.

Due to the general lack of planning, infrastructure, and personal protective equipment, Healthcare Workers (HCW) are projected to experience a significant level of stress during the COVID-19 crisis [10,30,31]. In China and Taiwan, the stress of the epidemic resulted in work desertion and a staff shortage in several hospitals in 2003. Many HCWs chose to stay away from their homes in order to avoid infecting their relatives, their spouse and children, family members and some HCWs are forced to stay away from family members [32,33].

Nursing workers had the highest COVID-19 fear levels, as predicted, given their job as principal front-line employees, which entails direct involvement with patients in a variety of activities and settings. However, in some studies, the fear severity was lower in the general population than in the present study sample [34]. This might be due to the fact that healthcare workers are exposed to COVID-19 patients on a regular basis, but the general public have limited exposure to infection. Despite this, the medical and nursing personnel sample scored well on the FCV-19S. This might be attributable to a high COVID-19 prevalence in the Erode district of Tamil Nadu during the study period [35].

Many external factors have exacerbated an already stressful mental health condition for hospital employees; staff nurses have had to deal with not just the dread of contracting a disease or infecting their family and loved ones, but also with conflicts with the general public. Physical and verbal attacks on healthcare workers have also been recorded, including the confiscation of disinfectants and the denial of a rental home.

Techniques for overcoming anxiety in such situations include appealing to altruism, emphasising a feeling of civic responsibility, encouraging co-workers to support one another, and advising those with a low fear threshold to seek accessible mental health treatment.

There were no additional scales employed alongside the FCV-19S to build the validity of the scale in the sample, and the sample size

was limited, necessitating the employment of a large group of participants. The study was carried out at a few hospitals in and around the Erode district and other parts of Tamil Nadu. Because the study was conducted on hospital employees, the findings cannot be extended to the broader community because each group's core features are essentially different. There is no other research that used this scale to assess the prevalence of COVID-19 fear among healthcare practitioners. This is a strength of the study, as it might pave way for future research on how hospital staff fear changes in reaction to pandemic changes, as well as the creation of coping and preventative methods to keep healthcare workers physically and emotionally fit. More research with the FCV-19S and other scales might improve the scale's validity.

With the COVID-19 epidemic, fear is all too frequent. HCWs are not immune to anxiety and panic, and in fact, they may experience higher levels of dread than the general population [35]. To further reduce the transmission of infection, we must address the psychological effects of COVID-19. We must remember that fear is a reaction, and that we must have the guts to trust verified infection prevention measures to deliver the best level of care in the safest environment possible for as long as possible.

Limitation(s)

This study has a small sample size. The majority of the participants were female nurses. The experiences of other healthcare workers, besides nurses, need to be further explored. The study was conducted in only one district. Furthermore, this was a brief research. Long-term experience with study participants might be an interesting path to pursue in the future.

CONCLUSION(S)

Despite the fact that the study participant's fear levels were higher, there is a need for strategies to reduce or alleviate fear of COVID-19 among staff nurse. The findings of the study suggest that nurses had considerably greater levels of dread, which might be explained by the fact that they are in closer contact with sick patients.

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