

COVID-19: Psychological Impact on Non-Medical Employees of a Medical College setting in South India

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Pandemic situation can be distressing for any population. This cross sectional study looked at the psychological impact of COVID-19 pandemic among the non-medical employees working in a medical college setting. Fear of COVID-19 Scale, Perceived Stress Scale (PSS) and General Health Questionnaire (GHQ 12) were used to assess 71 employees. The study indicated that majority of the participants reported fear about COVID-19 along with physiological symptoms, who were also more prone for experiencing psychological distress, Fear of COVID-19 was positively correlated perceived stress and psychological distress. Female employees expressed high levels of perceived stress as compared to males.

Keywords: COVID-19, fear, stress, psychological distress

In December 2019, the first case of COVID-19 was reported and within a month it was declared as a Public Health Emergency of International Concern by the World Health Organisation (Sohrabi et. al., 2020). As the number of cases rapidly increased, the uncertainty and vast spread in this crisis would have a potential to cause a lasting effect on the physical and psychological wellbeing of people (Liu et. al., 2020). Mental health consequences among people are characterised by emotional responses like extreme fear, uncertainty, distress reactions, such as insomnia, anger and mental health disorders such as anxiety disorders, depression, and somatisation (Shigemura et.al., 2020).

Fear is one such response that can be conceptualised as an adaptive, but phasic state elicited through confrontation with a threatening stimulus (Adolphs, 2013). At the time of a known or objective threat, fear induces changes in brain and body resulting in various physiological responses like sympathetic activation (hypertension, tachycardia, perspiration) and neuroendocrine responses (HPA axis activation) (LeDoux and Pine, 2016). In the adaptive point of view, Harper et. al.,(2020) reported that fear during a pandemic such as COVID- 19 can be a predictor of positive behaviour changes such

as social distancing and improved hand hygiene. On the contrary, the debilitating effects of fear of the pandemic can lead to the avoidance of infection -related stimuli, and employees refusing to go for work due to the fear of being infected (Taylor, 2019) and stigma (Lin,2020). Based on a study in Switzerland, Wissmath et. al., (2020) generated a model demonstrating that fear is the main component that leads to worry and further to stress among the general population.

Stress is a negative emotional experience accompanied by predictable biochemical, physiological, cognitive and behavioural changes that are directed either towards altering the stressful event or accommodating to its effects (Baum, 1990). Disasters and epidemics can lead to stress in people, irrespective of whether they are directly affected or not. These long standing stressors can lead to various mental health problems in the affected population. A survey conducted by the Indian Psychiatric Society indicated a 20 percent rise in mental illness in India due to the pandemic (Loiwal, 2020). Most patients affected by COVID-19 experienced significant post traumatic stress symptoms at the time of hospitalisation (Bo et. al., 2020). At the time of COVID-19, various stressors such as perception of safety and threat, risk of contagion, quarantine, stigma,

and financial loss can have a negative impact on the mental health of employees in different sectors (Hamouche, 2020). In the unaffected general population, 10.8% of the workforce met the diagnostic criteria of post traumatic stress disorder while returning to work during COVID -19 (Tan et. al., 2020). These findings can be reflected in the population working in the health sector as well. Research shows that people employed in health care work settings face enormous pressure during outbreaks due to a variety of factors (Ayanian, 2020). Almost 57% of non-clinical staff working in a hospital setting, though not in contact with the patients, experience moderate to severe levels of fear (Lu et. al., 2020). However, we have not come across any such studies on the psychological impact of COVID on non-medical employees conducted in India. Likewise, non-work stressors can also have the potential to influence the work performance of employees as well (Edwards, Guppy and Cockerton, 2007), thereby making it significant to study the effect of the pandemic on the employees. Through a cross sectional study design, we aimed to understand the prevalence of fear towards COVID-19, the level of stress and vulnerability to psychological distress among the non- medical employees working in a private medical college setting. We also aimed to understand the relationship between these variables and in relation with other socio demographic variables.

Method

Sample

The sample comprised of non- medical employees of a private medical college in South India, who had a minimum of 10 years of formal education and were literate in Tamil or English. Thus, from a total of 149 non-medical employees, 71 were selected for participation in the study.

Ethical concern

The Institutional Human Ethics Committee approved the study protocol (IHEC No: 20/127).

Measures

Fear of COVID- 19 Scale (Ahorsu et.al., 2020): Fear of COVID- 19 Scale is a 7 item

self- rated scale for assessing fear symptoms related to COVID , rated on a 5-point Likert scale. Certain items in the scale represent the cognitive symptoms of fear whereas some other represent the physiological symptoms of fear. Higher scores in this scale indicate increased fear towards COVID-19. The scale has high internal consistency ($\alpha = .82$) and test-retest reliability (ICC = .72). Concurrent validity was established by the Hospital Anxiety and Depression Scale (with depression, $r = 0.425$ and anxiety, $r = 0.511$).

Perceived Stress Scale(PSS; Cohen 1994):

The scale consists of 10 statements that can be rated on a five point scale. The reliability of this scale has been established at 0.79 (Chakraborti et. al., 2019). Lee (2012) reports that several studies met the criterion of $>.70$ on assessing the test-retest reliability of PSS-10. The criterion validity of PSS was evaluated in a few studies, of which the PSS was strongly correlated with only the mental component of health status($r=-.70$).

General Health Questionnaire-12(GHQ 12; Goldberg, 1978): GHQ 12 contains 12 items that cover the vulnerability of an individual for psychological distress. Items can be rated on a scale with binary scoring. For community participants, the cut off is set at 4(Qin et. al.,2018) which means, scores of 4 and above is an indication of vulnerability for psychological distress. The three sub scales of GHQ are Social Dysfunction (Items 1, 3, 4, 7, 8 and 12), Anxiety and Depression (Items 2, 5, 6 and 9), Loss of Confidence (Items 10 and 11).The scale has been validated in Tamil with high internal consistency with a Cronbach's alpha of 0.86 and split half-reliability of 0.83. The optimal threshold was found to be 2/3 for the scale with a sensitivity of 87.4% and a specificity of 79.2% (Kuruville et. al., (1999).

Procedure

The study purpose was explained and written informed consent was obtained from all the participants. The socio demographic details of the participants were collected including age range, gender, education, marital status, work experience, family type, mode and duration of travel to the workplace.

Statistical Analysis

The analysis was done using Statistical Package for the Social Sciences (SPSS) version 24.0. The descriptive statistics was done to obtain the mean and standard deviation of socio demographic data and the variables used in this study. Pearson product moment correlation was carried out to understand the association between the variables fear of COVID-19, perceived stress and psychological distress. Chi square analysis was carried out for understanding the association between socio demographic variables such as age range, gender, education, marital status, work experience, family type, mode and duration of travel to the workplace.

Results

Description of sample

The mean age of the participants was 40.39 years (SD=10.22) and the majority were females (71.8%; n=51). Most of them were educated up to the graduate level (42.3%; n=30), married (87.3%, n=62) and were living in a joint family (42.3%, n=30). The average duration of travelling time from home to workplace was 11-30 minutes and majority (62%, n=44) use their own vehicles as mode of transport.

Table 1. Socio demographic details of the sample (N=71)

Variables		n	Percentage (%)
Gender	Male	20	28.2
	Female	51	71.8
Education	Upto 12th	18	25.4
	Degree/ Diploma	30	42.3
	PG and above	23	32.4
Experience	<5 years	23	32.4
	5 to 10 years	23	32.4
	>10 years	25	35.2
Marital status	Single	8	11.3
	Married	62	87.3
	Separated	1	1.4

Family type	Nuclear	35	49.3
	Joint	30	42.3
	Extended	6	8.5
Transport	Walking	8	11.3
	Own vehicle	44	62.0
	Public transport	19	26.8
Duration	<10 minutes	22	31
	11-30 minutes	26	36.6
	>30 minutes	23	32.4

Fear of COVID-19, Perceived stress and Psychological distress among participants

Overall, the participants obtained a mean score of 16.09 (SD= 4.88) in the Fear of COVID- 19 scale and 45% (n=32) of them expressed heightened sense of uncomfotability regarding COVID-19. Increased fear was reported by 36.7% (n=26) participants along with physiological symptoms of fear and 9.9% (n=7) had palpitations, 12.7 % (n=9) had clammy hands and 14.1% (n=10) reported loss of sleep. A minority of the sample, 9.9% (n=7) reported fear of death due to COVID-19. The mean perceived stress of the participants was 16.73 (SD=5.88). In GHQ 12, 14.1 % (n= 10) of the participants scored above the cut-off score of 4 indicating vulnerability for psychological distress. Among the participants, 8.4% indicated that they often felt stressed and nervous in the past one month and 21.1% felt constantly under strain and difficulty in facing their problems. They also reported loss of sleep after worrying excessively (18.3% in GHQ 12) and inability to take decisions (19.75% in GHQ 12). Females expressed significantly higher level of perceived stress as compared to males ($\chi^2=6.337$; $p=.012$). There was no significant correlation between psychological variables with the socio demographic variables of age range, education, marital status, work experience, family type, mode and duration of transport to the workplace.

Correlation between psychological variables

Fear of COVID-19 had a moderate correlation with psychological distress ($r= .30$, $p<0.05$). Similarly, the physiological symptoms of fear was also positively correlated with psychological

Table 2. Correlation values among the variables

	Fear of COVID-19 (Mean=16.09, SD= 4.88)	Perceived stress (Mean=16.73, SD= 5.88)	Psychological distress (Mean=1.78, SD= 2.85)	Physiological symptoms [^]
Fear of COVID	1	.26*	.30*	.84**
Physiological symptoms [^]	.84**	.217	.39**	1
Perceived Stress	.26*	1	.44**	.22
General Health	.30*	.44**	1	.39**
Anxiety Depression	.21	.44**	.89**	.36**
Social Dysfunction	.36**	.38**	.94**	.40**
Loss Of Confidence	.18	.37**	.81**	.25*

[^]- items 2, 6, and 7 in FOC

Anxiety Depression – GHQ Items 2, 5, 6& 9; Social Dysfunction – GHQ Items1,3,4,7,8, &12 ; Loss of Confidence - GHQ items 10 & 11

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

*Correlation is significant at the 0.05 level (2-tailed).

distress ($r = .39$, $p < 0.05$). Perceived stress had a positive correlation with Fear of COVID-19 ($r = .26$, $p < 0.05$) and was also moderately associated with psychological distress ($r = .44$, $p < 0.01$). Similarly there was a significant association between fear of COVID-19 ($r = .29$, $p < 0.05$), physiological symptoms of fear ($r = .41$, $p < 0.05$) and perceived stress ($r = .43$, $p < 0.01$) with vulnerability for developing psychological distress (GHQ scores of 4 and above). Apart from the association of psychological distress as mentioned above, its subscales such as anxiety and depression, social dysfunction and loss of confidence were also related with other variables. The anxiety depression subscale score was moderately associated with perceived stress ($r = .44$, $p < 0.01$) as well as physiological symptoms of fear ($r = .36$, $p < 0.01$). Similarly, the social dysfunction subscale was correlated with fear of COVID-19 ($r = .36$, $p < 0.01$), perceived stress ($r = .38$, $p < 0.01$) and physiological symptoms of fear ($r = .40$, $p < 0.01$). Loss of confidence was found to be associated with perceived stress ($r = .37$, $p < 0.01$) and physiological symptoms of fear ($r = .25$, $p < 0.01$).

Discussion

The current study aimed at understanding the level of fear towards COVID-19, perceived

stress and vulnerability to develop psychological distress among non-medical employees in a medical college setting. During pandemic situations, fear can be caused by ongoing proliferation of cases and the uncertainty about the course of illness. The changes in people's lives, such as restrictions in travel, lack of access to direct social ties, frequently maintaining hygiene, following lockdown rules and financial insecurity along with fear and uncertainties about the infection have brought apprehensions and chaos in people's lives. Along with financial insecurities, other possible sources of stress are scarcity in supplies during lockdown, and lack of medical facilities (Kochhar et al., 2020). This fear about the danger of COVID-19 can result in 'COVID stress syndrome' leading to behaviours like reassurance seeking, avoidance and panic buying (Taylor et al., 2020).

Fear can be manifested both physiologically (increased perspiration, increased arousal symptoms) as well as cognitively (negative thoughts related to the threat, worrying, inability to concentrate, difficulty in decision making). Such manifestations can lead to several behaviours to ensure safety, particularly at the time of a pandemic. From the study, it was worth noting that the participants felt

uncomfortable thinking about COVID-19 and reported fear due to the same along with some of the biological symptoms such as palpitation, increased perspiration and loss of sleep. Though the participants did not overtly express fear at a pathological level, the presence of fear symptoms did not completely rule out their vulnerability for psychological distress. These fear symptoms may go unnoticed if the severity is less and does not affect their day to day functioning. However, the current findings indicated that those with physiological manifestation of fear were more vulnerable to experiencing psychological distress. In India, two cases of self-harm in individuals without any history of mental disorders were reported secondary to severe depression and anxiety caused by the pandemic situation (Sahoo et. al., 2020). Hence, the mental health issues which emerge due to unattended stress and anxiety induced by a pandemic could be a matter of concern. Mental health professionals should address these critical areas in the existing scenario.

Perceived stress was associated with vulnerability to psychological distress. Stress was found to be higher among females in the current study, which is in line with the previous findings by Liu et. al., (2020) where females experienced more stress related symptoms. Multiple roles and responsibilities taken up by women, in the household and workplace can be stressful at the time of the ongoing pandemic. Wenham et. al., (2020) highlighted about increase in domestic violence, lack of access to sexual and reproductive health services, and job loss among women across the countries during the pandemic.

Prolonged stressors can also have negative consequences on mental health. More than one fifth of the participants reported being constantly under strain due to ongoing problems. Symptoms of fear or stress, if remained unrecognised and not intervened, its cognitive representations can maintain the physiological activity for a prolonged period as well as emergence of diseases (Brosschot, 2010). Thus, like active stressors, even prolonged passive stressors can have reactivity in the immune system (Isowa, Ohira, & Murashima, 2004). As suggested by

Yerkes and Dodson (1908), long standing and high stress leads to low performance and burnout, which in turn affects the performance of employees at the workplace. Presently, adapting to the new changes such as planning work from home, ensuring safety measures in the workplace, tailoring the work styles as per the organisational demands can be stressful. Hence, it is essential to be receptive to the psychological needs of the employees at the workplace. Also, working in the premises COVID treatment centre itself can be a possible source of stress due to fear of infection. In this scenario, employee wellbeing needs to be enhanced by addressing their psychological distress. Sasaki et. al., (2020) recommends that measures in the workplace for maintaining the mental health of the employees can enhance their well being there by improving their work performance as well.

Conclusion

The present study indicated the presence of fear and stress among non- medical employees due to COVID-19. Among the sample, females reported higher perceived stress than males. Physiological manifestation of fear was associated with increased psychological distress. Thus, psychological vulnerabilities among employees require particular attention at the time of pandemic situations. This study is one of the first studies in India conducted on non- medical employees of a medical institution and has been able to highlight the psychological distress experienced by employees during this COVID-19 pandemic in spite of their lack of direct contact with COVID-19 patients. Nonetheless, we have noted several limitations in the study. A cross sectional study design, with limited participants from a single centre has its limitations as the psychological effects of the pandemic can change with time. Assessments at multiple points of time would be required to evaluate these changes. Besides, information regarding the current or past psychiatric history, family history and other psychosocial stressors need to be considered in future studies. Nevertheless, this study helps to understand the vulnerability of non-medical employees in developing psychological distress as well as the necessity of timely interventions at the time of a crisis like COVID-19 pandemic.

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