Burnout Syndrome among Healthcare Providers during COVID-19 Pandemic in Rural Tamil Nadu, South India: A Cross-Sectional Study

Vasantha Mallika M. C[1], Pretty Venis[2], Glannie A R[2], Liji Anna Varghese[3]

[1]Professor and Head, [2]Postgraduate students, [3]Statistician,Department of Community Medicine, Sree Mookambika Institute of Medical Sciences, Kulasekaram, Tamil Nadu, India

Correspondence : Dr. Pretty Venis, Email: drprettyv@gmail.com

Abstract:

Introduction: The 2019 Coronavirus disease (COVID-19) pandemic has been a serious global threat with numerous researches indicating that frontline healthcare personnel involved in its management and diagnosis are at risk of experiencing psychological disturbances and deteriorating mental health. By definition, "burnout is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed". Burnout has been associated with increased mortality and morbidity. **Objective:** To estimate the prevalence of burnout syndrome and to determine the associated factors among healthcare providers in rural Tamilnadu during the COVID-19 pandemic. **Method:** A cross-sectional study was done among 120 healthcare providers from Sree Mookambika Institute of Medical Sciences, Tamil Nadu during July 2021. Participants selected by convenient sampling technique were given pre-tested Maslach Burnout Inventory- Human Services Survey (MBI-HSS) questionnaire. Data were entered in MS Excel 2019 and analysis was done in SPSS v26.0. Descriptive statistics and Chi-square tests were applied. **Results:** Mean age of the participants was 25.48±4.66 years. Among them, 46(38.3%) reported emotional exhaustion, 42(35%) depersonalization and 87(72.5%) reported a lower sense of personal accomplishment. The years of professional experience and the number of working hours per day were associated with emotional exhaustion and depersonalization ($p<0.05$). The different professional categories showed a significant association with Emotional Exhaustion ($\chi^2=20.888$,df=6, $p=0.002$) and Depersonalization ($\chi^2=23.055$,df=6. $p=0.001$) with high Burnout among doctors and nurses. **Conclusion:** This study highlights the importance of addressing burnout among healthcare personnel. The issues should be prioritized by authorities to develop appropriate interventions.

Keywords: Burnout, Healthcare personnel, Pandemic, Psychological

Introduction:

In Wuhan, Hubei Province, China, a novel coronavirus known as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) was identified as the cause of severe viral pneumonia in December 2019.[1] On February 11, 2020, this virus was declared a global pandemic.[2] According to research, frontline healthcare workers who are involved in the management and diagnosis of COVID-19 are at risk of developing psychiatric disorders and having their mental health deteriorate.[3] This could be due to a number of factors, including a lack of personal protective

Quick Response Code	Access this article online	How to cite this article :
	Website : www.healthlinejournal.org	Vasantha Mallika MC, Venis P, Glannie AR, Varghese L. Burnout Syndrome among Healthcare Providers during Covid-19 Pandemic in Rural Tamil Nadu, South India : A Cross-Sectional Study. Healthline. 2022; 13(1): 90-96 .
	DOI : 10.51957/Healthline_307_2021	

equipment, a scarcity of appropriate medications, the risk of infecting family members, expectations of insufficient support, and the dread of getting the virus. These circumstances, together with the financial challenges that physicians face in many countries, put healthcare personnel under a lot of stress, jeopardising their mental health.[4] Several studies have found a link between mental health problems and the COVID-19 pandemic, with increased rates of anxiety, depression, and insomnia.[3] However, there is little data available on physician burnout during the pandemic.

Burnout is a psychosocial syndrome. By definition, "it is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed".[5] It involves feelings of emotional exhaustion, depersonalization and diminished personal accomplishment at work. Emotional exhaustion is a situation where, owing to lack of energy, workers perceive they are no longer able to participate on an emotional level. Depersonalization is characterised by the development of unfavourable attitudes and feelings against others for whom labour is performed, to the point where they are blamed for the subject's own issues. Diminished personal accomplishment is a propensity among professionals to place a low value on their own ability to complete activities and engage with the people for whom they are performed, as well as to be unhappy or unsatisfied with the outcomes. [6] According to research, physicians are at a higher risk of burnout because they are exposed to emotional stress at a higher degree than most other occupations. Additionally, burnout has been linked to decreasing productivity and job satisfaction among physicians.[7] As a consequence, irritability and dissatisfaction may significantly affect an individual's sense of well-being and willingness to fully function at work, compromising physicians' ability to care for patients. Physician burnout has also been associated to a higher likelihood of medical errors, which has a negative impact on patient outcomes. Burnout has been linked to a higher risk of suicide and higher levels of depression, which is concerning. The illness has also been connected to physiological difficulties such as an increased risk of cardiovascular disease and an increase in inflammation biomarkers.[8] The present research study has been planned, assuming that healthcare workers are at greater risk for burnout syndrome and lower quality of life during the COVID-19 pandemic.

Objectives:

1. To estimate the prevalence of burnout syndrome among healthcare providers in rural Tamil Nadu during the COVID-19 pandemic.
2. To determine the factors associated with burnout syndrome among the study participants.

Method:

A cross-sectional study was done among healthcare providers of various capacities such as interns, medical officers, general practitioners, consultants, specialists, dentists, nurses and lab technicians working invarious Medical institutes in Kanyakumari, Tamil Nadu from June 01 to July 26, 2021. A valid and reliable pre-tested, self-administered questionnaire which included questions on background information and the Maslach Burnout Inventory (MBI) designed for professionals in the human services called the MBI-Human Services Survey (MBI-HSS). The MBI-HSS questionnaire comprised 22 items regrouped into 3 subscales: emotional exhaustion (EE; nine items), depersonalization (DP; five items), and personal accomplishment (PA; eight items). Each item was answered on a 7-point Likert scale, based on its frequency from zero (never) to six (always). The Emotional Exhaustion subscale (items 1, 2, 3, 6, 8, 13, 14, 16, and 20) measures sensations of being emotionally overworked and exhausted. The depersonalization subscale (items 5, 10, 11, 15, and 22) assesses an impersonal and unfeeling attitude toward the people who receive one's service, care, or treatment. The personal accomplishment subscale (items 4, 7, 9, 12, 17, 18, 19, and 21) evaluates feelings

of competence and success in one's work with people. AnEE score of 0 to 16 we reconsidered low, 17 to 26 moderate and 27 or more were considered high for burnout. A DP score of 0 to 6 were considered low, 7 to 12 moderate and 13 or more were considered high for burnout. A PA score of 0 to 31 were considered high, 32 to 38 were considered moderate and 39 or more were considered low for burnout.

Sample size calculation : The sample size was calculated using the formula, $n= Z^2(1-\alpha/2)pq/d^2$ based on the proportion that scored high on the emotional exhaustion subscale in a study done by Deepak Langade et al which was 45.02% with a relative precision of 20%.[9] Sample size (n)=120.

Convenient sampling technique was used. Healthcare personnel working during the period of data collection and willing to participate were included in the study. Those responses submitted with an incomplete question form or with missing data were excluded from the study. Informed written consent was obtained from those who agreed to complete the questionnaire. The questionnaire was given to the study participants in-person or via personal communication platforms like e-mail depending upon their availability. The completed questionnaire was collected back after 48 hours and was checked for missing entries. The responses were coded and the data were tabulated in Microsoft Excel 2019. Data were analyzed using IBM SPSS Statistics Trial version 26.0. The distribution of the responses for each variable was examined using frequencies and percentages. Descriptive statistics were presented for the scores of questionnaire domains in the subgroups based on the age, gender, category of health personnel and work experience. Mean scores were calculated for the individual subscales of MBI-HSS to find out the prevalence of burnout levels in each of these components. Approval of the institutional ethics committee was obtained for the study.

Results:

Out of the total 120 participants, 23.3% (n = 28) were males, 76.7% (n = 92) were females. Among total, 31 (25.8%) worked in the Government set up whereas 89 (74.2%) in private organizations. Among them, 44% were medical doctors, 26.7% were nurses, 16.7% were dentists and the remaining 12.5% were lab technicians. The demographic details of the participants have been shown in Table 1.

The overall prevalence of Burnout was 48.3%. 38.3% (n=46) scored high on Emotional Exhaustion domain, 35%(n=42) scored high on Depersonalization domain and 72.5%(n=87) scored low on Personal Accomplishment domain indicating high degree of burnout among them. (Figure 1)

The mean EE score was 22.9±11.6 and 38.3% of HCWs demonstrated high EE. The mean DP score was 11.2±6.4 and 35% demonstrated high DP. The mean PA score was 25±10.1 and 72.5% demonstrated low PA. The mean EE, DP and PA scored by the participants are shown in Figure2.

Males exhibited higher Emotional Exhaustion than females. For the MBI-HSS personal accomplishment domain, out of the 120 respondents, 72.5% (n = 87) had low scores where an increased number of medical doctors as compared to the others exhibited high Emotional Exhaustion (p=0.002, χ^2=20.888, df=6) and Depersonalization (p=0.001, χ^2=23.055, df=6) scores, showing a significant association. There was statistically significant association between low Personal Accomplishment scores and age less than 30 years (χ^2=9.922, df=2, p=0.007) and also with gender (χ^2=7.099, df=2, p=0.029) of the study group. Table 2 shows a list of variables and their association with higher EE, higher DP, lower PA and overall Burnout.

Discussion:

The present study was aimed to estimate the degreeof burnout among healthcare personnel from various fields with a wide range of clinical experience

Table 1: Demographic details of respondents (n=120)

Demographic Characteristics	Variables	Frequency (n)	Percentage (%)
Gender	Male	28	23.3
	Female	92	76.7
Work Organization	Government	31	25.8
	Private	89	74.2
Occupation	General physicians/MO	38	31.6
	Interns	15	12.5
	Nurse	32	26.7
	Dentist	20	16.7
	Lab technician	15	12.5
Marital status Living arrangements	Unmarried/Divorced	84	70.0
	Married	36	30.0
	With family	93	77.5
	Alone	27	22.5
Age of child, if any	Less than 15 years	18	15.0
	More than 15 years	3	2.5
	No children/Not applicable	99	82.5
Hours per day at work	Less than 6 hours	15	12.5
	6-10 hours	78	65.0
	More than 10 hours	27	22.5
Years of experience	More than 10yrs	7	5.8
	5-10 yrs	15	12.5
	Less than 5 yrs	98	81.7

Figure 1: Degree of Burnout among participants according to the domains of MBI-HSS (n=120)

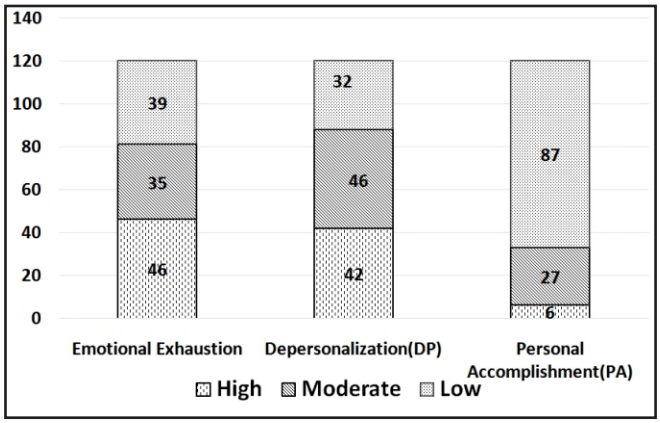

Figure 2: Box plot showing the mean scores in each MBI-HSS domain

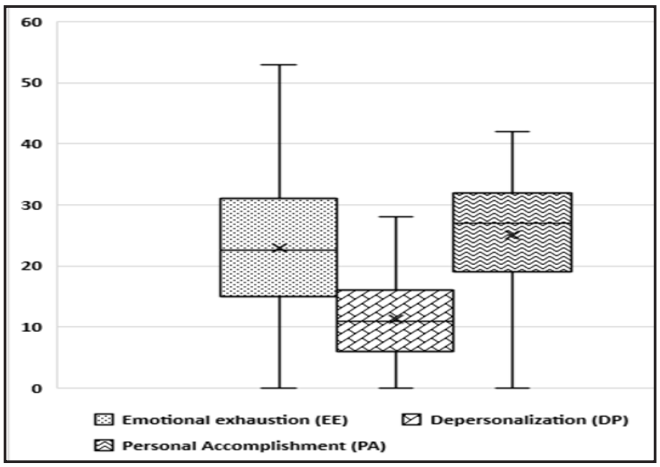

Table 2: Factors associated with thedomains of MBI-HSS

Variable	Emotional exhaustion (EE)			Depersonalization (DP)			Personal accomplishment (PA)		
	High n (%)	Mod n (%)	Low n (%)	High n (%)	Mod n (%)	Low n (%)	High n (%)	Mod n (%)	Low n (%)
Gender									
Male	11(39.3)	6 (21.4)	11(39.3)	11(39.3)	11(39.3)	6(21.4)	4(14.3)	7 (25)	17(60.7)
Female	35 (38)	29 (31.5)	28(30.4)	31(33.7)	35 (38)	26(28.3)	2 (2.2)	20(21.7)	70(76.1)
	p-value=0.528			p-value=0.750			p-value=0.029*		
Age group									
Less than 30 years	42(39.6)	31 (29.2)	33(31.1)	38(35.8)	42(39.6)	26(24.5)	3 (2.8)	23(21.7)	80(75.5)
More than 30 years	4 (28.6)	4 (28.6)	6 (42.9)	4 (28.6)	4 (28.6)	6 (42.9)	3(21.4)	4 (28.6)	7 (50)
	p-value=0.632			p-value=0.343			p-value=0.007*		
Years of clinical experience									
>10 years	3(42.9)	2(28.6)	2(28.6)	2 (28.6)	3 (42.9)	2 (28.6)	2(28.6)	3 (42.9)	2 (28.6)
5-10 years	4(26.7)	7 (46.7)	4 (26.7)	4 (26.7)	7 (46.7)	4 (26.7)	1 (6.7)	4 (26.7)	10(66.7)
<5 years	39(39.8)	26 (26.5)	33(33.7)	36(36.7)	36(36.7)	26(26.5)	3 (3.1)	21(21.4)	74(75.5)
	p-value=0.615			p-value=0.932			p-value=0.042*		
Health profession									
Medical doctors	27(50.9)	15 (28.3)	11(20.8)	21(39.6)	26(49.1)	6 (11.3)	1 (1.9)	11(20.8)	41(77.4)
Dentists	4 (20)	2 (10)	14 (70)	4 (20)	3 (15)	13 (65)	2 (10)	4 (20)	14 (70)
Nurse Lab	12(37.5)	12 (37.5)	8 (25)	10(31.3)	13(40.6)	9 (28.1)	1 (3.1)	10(31.3)	21(65.6)
Technicians	3 (20)	6 (40)	6 (40)	7 (46.6)	4 (26.7)	4 (26.7)	2(13.3)	2 (13.3)	11(73.3)
	p-value=0.002*			p-value=0.001*			p-value=0.368		

*Statistically significant (Chi-square test)

in rural Tamil Nadu. It showedthat 38.3% (n = 46) and 35% (n = 42) of the participants scored high on the Emotional Exhaustion and Depersonalization scales respectively, 72.5% (n = 87) scored low on the Personal Accomplishment scale. There was a substantial positive relationship between high burnout prevalence and several health professions. The high prevalence of burnout among Indian medical practitioners is comparable to the findings of other nations' studies on burnout among medical practitioners. [10-12]

The high percentages of Emotional Exhaustion found in this study are similar to other studies conducted on oncologists in the United States, which found that 38.3 percent of them were emotionally exhausted.[10] The levels of burnout in this study are higher than those observed in European doctor studies. Burnout is a widespread concern among family doctors in Europe, according to the European General Practice Research Network (EGPRN), with high levels impacting two-thirds of the respondents in the survey. Overall, 43% of participants reported high levels of Emotional Exhaustion, while 35% reported low, Depersonalization was reported by 35% of respondents, and low feelings of personal accomplishment were reported by 32%, which is lower than the current study's findings.[11] The current study found a higher prevalence of burnout

among females than men, which is consistent with the findings of French intensivists who found a higher frequency of burnout among females than males.[12] Females in India are more likely to experience significant burnout, which is likely due to culturally higher demands in household situations, resulting in a mismatch in their work-life balance.

There also seems to be a rise in the Personal Accomplishment burnout levels with increase in the respondents' age and work experience. This finding is similar to earlier findings where there was a rise in burnout with an increase in experience.[13] High levels of Emotional Exhaustion was seen in a very low proportion (20%) of dentists in our study which was similar to another study done among Dutch dental practitioners which was 2.5%.[14] This may indicate that burnout is prevalent not only among medical practitioners, but also other professionals across the health care system in India and needs urgent attention. High levels of burnout are probably seen due to the poor doctor-patient ratio in India. The intense patient workload with limited doctors results in long working hours. This leaves them with minimal time for family life and recreation. Also, the medical fees here in India are lower than the other developed countries. These multiple factors have led to intense dissatisfaction among the medical community, which is a cause of great concern.

Clinical burnout is linked to a range of negative consequences. Burnout is a psycho social occupational health condition that is one of the most common work-related disorders in today's culture. This can cause somatic symptoms such as interpersonal issues, sleeplessness, irritation, and suicidal ideation, and is similar to the psychological mood disorder dysthymia.[15] Burnout has also been linked to a number of cardiovascular disease risk factors, including excessive cholesterol, glucose, triglycerides, uric acid, and, to a lesser extent. Burnout plus listlessness scores were positively associated with glucose and adversely associated with diastolic blood pressure.[16] Burnout has also been connected to an increased risk of developing type 2 diabetes.[17] The key to effectively dealing with this disease is early discovery and treatment.[9]

However, our study is subjected to few shortcomings such as limited sample size and generalis ability. Since the data collected is subjective and based on a cross sectional design, it is difficult to make any causal inferences. Further studies will help to get more accurate results and confirm the findings of this study.

Conclusion:

Nearly half (48.3%) of the study population showed a high degree of burnout where theEmotional Exhaustion and Depersonalization domains were significantly associated with category of health personnel and the Personal Accomplishment domain with age, gender and the years of clinical experience. Burnout may be minimized by an institutional approach with support from medical bodies and organisations maintaining a good work-life balance, utilization of better ergonomic practices and stress management at the workplace.

Declaration:

Funding: Nil

Conflict of Interest: Nil

References:

1. Zhou P, Yang XL, Wang XG, et al. Addendum: A pneumonia outbreak associated with a new coronavirus of probable bat origin. Nature. 2020; 588(7836):E6
2. World Health Organization. Director-General's Remarks at the Media Briefing on 2019- CoV on 11 February 2020. WHO (2020). Available online at: https://www.who.int/director-general/speeches/detail/who-director-generals-remarks-at-the-media-briefing-on-2019-ncov-on-11-february-2020 [cited on 2021 August 21]
3. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, Wu J, Du H, Chen T, Li R, Tan H, Kang L, Yao L, Huang M, Wang H, Wang G, Liu Z, Hu S. Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. JAMA Netw Open. 2020 Mar 2;3(3):e203976.

4. Xiang Y, Jin Y, Cheung T. Joint International Collaboration to Combat Mental Health Challenges During the Coronavirus Disease 2019 Pandemic. JAMA Psychiatry. 2020;77(10):989–990.
5. Atroszko P, Demetrovics Z, and Griffiths M. Work addiction, obsessive-compulsive personality disorder, burn-out, and global burden of disease: Implications from the ICD-11. Int. J. Environ. Res. Public Health 2020; 17: 660
6. Montero Marín J, García Campayo J, Mosquera D, & López Y. A new definition of burnout syndrome based on Farbers's proposal. Journal of Occupational Medicine and Toxicology.2009; 4: 31. Doi: 10.1186/1745-6673-4-31
7. Bridgeman PJ, Bridgeman MB, Barone J. Burnout syndrome among healthcare professionals. Am J Health Syst Pharm. 2018;75(3):147-152.
8. Martin F, Poyen D, Bouderlique E, Gouvernet J, Rivet B, Disdier P, Martinez O, and Scotto J. Depression and burnout in hospital health care professionals. International journal of occupational and environmental health.1997;3(3): 204-209.
9. Langade D, Modi PD, Sidhwa YF, et al. Burnout Syndrome among Medical Practitioners Across India: A Questionnaire-Based Survey. Cureus. 2016;8(9):e771.
10. Shanafelt TD, Gradishar WJ, Kosty M, et al. Burnout and career satisfaction among US oncologists. J Clin Oncol. 2014;32(7):678-686.
11. Soler JK, Yaman H, Esteva M, Dobbs F, Asenova RS, Katic M, Ozvacic Z, Desgranges JP, Moreau A, Lionis C, Kotanyi P, Carelli F, Nowak PR, de Aguiar Sa Azeredo Z, Marklund E, Churchill D, Ungan M, European General Practice Research Network Burnout Study Group: Burnout in European family doctors: the EGPRN study. Fam Pract. 2008, 25 (4): 245-265.
12. van Mol MM, Kompanje EJ, Benoit DD, Bakker J, Nijkamp MD. The Prevalence of Compassion Fatigue and Burnout among Healthcare Professionals in Intensive Care Units: A Systematic Review. PLoS One. 2015;10(8):e0136955.
13. Ceslowitz SB. Burnout and coping strategies among hospital staff nurses. J Adv Nurs. 1989; 14:553–8
14. Gorter R , Albrecht G, Hoogstraten J, Eijkman M. Professional burnout among Dutch dentists. Community Dentistry and Oral Epidemiology.1999; 27:109-16
15. Salanova M, and Llorens S. Current state of research on burnout and future challenges. Papeles Psicólogo.2008; 29: 59–67
16. Melamed S, Kushnir T, Shirom A. Burnout and risk factors for cardiovascular diseases. Behav Med. 1992;18(2):53-60.
17. Melamed S, Shirom A, Toker S, Shapira I. Burnout and risk of type 2 diabetes: a prospective study of apparently healthy employed persons. Psychosom Med. 2006;68(6):863-869.