

A Comparative Study to Assess Burn Out Syndrome among Health Care Workers Working in Sars-Cov-2 and Non Sars-Cov-2 Area in Tertiary Care Hospital of National Capital of India

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Abstract

Only few studies have shown impact of SARS-COV-2 among those HCWs who are working in Non SARS-COV-2 areas distinctively. Thus, the degree up-to what extent burn out syndrome have impacted on lives of HCWs working in SARS-COV-2 areas and Non SARS-COV-2 areas independently, is compared in this survey. Response rate was 80%. The prevalence of personal, work related, client related burnout among HCWs working in SARS COV-2 area was high as compared with HCWs working in Non SARS COV-2 area respectively ($p < 0.01$). There was no statistically significant association found between gender, marital status, years in practice and age as ($p > 0.05$).

Keywords: Burnout Syndrome; SARS-COV-2 Areas; Non SARS-COV-2 Areas; Health Care Workers (Hcws); Copenhagen Burnout Inventory (CBI)

Introduction

ICD-11 (International classification disease) and DSM V (Diagnostic and statistical manual of mental disorder) had classified burn out as occupational phenomenon instead of medical condition or mental disorder, it is a syndrome which lead to exhaustion, cynicism, perceived inefficacy among professional due to chronic workplace stress which is not managed properly by an individual [1,2]. It was first conceptualised and comprehensively studied in 1974, by the clinical psychologist Herbert J. Freudenberger [3]. Burn out syndrome is prevalent as a rampant among Indian Health care workers (HCWs), with one fourth of them affected with burn out [4], leading to vital concern, influencing physical and mental status of HCWs. Emergence of SARS-COV-2 disease had further add on its inferior impact on vitality, social functioning and mental health of HCWs working in SARS-COV-2 areas [5]. With no definitive treatment, SARS-COV-2 is spreading rapidly across the country, leading to psychological stress, anxiety among HCWs at workplace with reduced competencies at work [6]. Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV-2), previously known as COVID-19, is a rapidly spreading newly discovered infectious Coronavirus among person to person causing epidemic in Wuhan, Hubei Province of China, November 2019. In February 2020, it was declared as pandemic by WHO (World Health Organization), causing a familial cluster of pneumonia and flu like symptoms among people [7-9]. Lockdown initiated in view of SARS-COV-2 pandemic prevention affected lives of the people in various aspects, it leads to global shutdown of economy, depression, collapse of surgeries, fear of catching SARS-COV-2 lead avoidance among people for not showing themselves in hospital lead to increased unwitting loss of lives from Non SARS-COV-2 causes such as stroke, heart attack etc [10].

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SARS-COV-2 pandemic emergence provoked social stigma and discrimination among people against HCWs globally, causing negative impact on their mental health. HCWs in India faced colossal impact on their personal safety, separation from their loved ones, shortage of staff, equipment, ventilators and personal protective equipment along with stigma and aggression from society towards them [11,12]. With so many multidimensional impact of SARS-COV-2 pandemic among HCWs, burn out syndrome increased tremendously among HCWs with one half of physician and one third of nurses experiencing symptoms, posing detrimental impact on patient care and shortage of HCWs [13]. CBI (Copenhagen Burnout Inventory) tool used for PUMA (Danish acronym for burnout, motivation and job satisfaction) found to have high internal reliability and validity for assessing burnout. It consisted of three scales which measures personal, work related and client related burnout. The superiority of the scales is that they are able to differentiate well between occupational groups and the expected behaviour with regards to fatigue, exhaustion, psychological wellbeing, along with prediction related to intention to quit, future sickness absence, use of pain killers and sleep problems. Also measures the changing burnout level of employees over course of time [14]. Therefore, CBI tool is used to measure burnout among HCWs. India revealed the prevalence rate of 52.8% among HCWs during SARS-COV-2 pandemic. HCWs working in high risk hospital areas were having statistically greater work related and pandemic related burn out prevalence ($p < 0.01$). Female and younger (21 - 30 years of age) HCWs were significantly ($p < 0.01$) having higher prevalence of work related and personal related burn out [15]. Study conducted worldwide such as in Iran also showed same prevalence rate of burnout, 53% among HCWs during COVID-19 pandemic when measured using MBI (Maslach Burnout Inventory for Human Services Survey) [6]. While a meta-analysis and systematic review conducted during Pre COVID-19 for assessing prevalence and factors associated with burnout syndrome among Indian healthcare workers ranges from 23% - 27%. Burnout results in suboptimal patient care, deterioration of healthcare workers health, anxiety, depression, drugs and alcohol consumption among them. Factors such as younger age, single status, female, and cumbersome working condition were associated with burnout syndrome among healthcare workers [3].

Globally, numerous numbers of researches published on psychological distress, anxiety, depression, burnout syndrome among HCWs working in SARS-COV-2 areas. Few studies have shown impact of SARS-COV-2 among those HCWs who are working in Non SARS-COV-2 areas distinctively. Thus, it necessitates for evaluating the impact of burn out syndrome related to SARS-COV-2 pandemic among HCWs working in both SARS-COV-2 areas and Non SARS-COV-2 areas independently and comparatively.

There are no studies available which compared burnout syndrome among health care workers working in SARS-COV-2 and Non SARS-COV-2 area in India. Based on the findings of the study, intervention can be planned which could augment in delivering quality patient care and also aid HCWs in maintain their psychosocial integrity.

Objectives of the Study

- To assess the burnout syndrome among healthcare workers working in SARS-COV- 2 area, tertiary care hospital, National capital of India.
- To assess the burnout syndrome among healthcare workers working in Non SARS- COV-2 area, tertiary care hospital, National capital of India.
- To compare burnout syndrome among healthcare workers working in SARS-COV-2 and Non SARS-COV-2 area, tertiary care hospital, National capital of India.

Research Question

The degree up-to what extent burn out syndrome have impacted on lives of HCWs working in SARS-COV-2 areas and Non SARS-COV-2 areas independently is to be compared in this survey.

Methodology

A Comparative cross sectional survey design with convenient sampling technique was used for the study. Healthcare worker includes of doctors and nurses only working in SARS-COV-2 and Non SARS-COV-2 area exclusively were enrolled for the study based on inclusion and exclusion criteria. Inclusion criteria for HCWs working in SARS-COV-2 areas included of HCWs having work experience of ≥ 3 month with SARS-COV-2 patients exclusively and still working in SARS-COV-2 areas with provision of informed consent while HCWs who have never worked in SARS COV-2 areas were enrolled for Non SARS-COV-2 areas, during study period from January 2021 - March 2021. Ethi-

cal clearance was obtained from the ethical committee of AIIMS, New Delhi (IEC-1196/04.12.2020, RP-61/2021). Main study sample size was calculated as 100 (50 subjects in each group). Data was collected through online Google form which consisted of socio demographic tool and CBI (Copenhagen Burnout Inventory) tool for assessing burnout among HCWs, shared through what's app, Gmail, FB messenger app as per HCWs convenience.

Data were collected from Google form and Google spreadsheets and analysed using statistical software STATA version 5. Descriptive analysis variables measured on nominal scale and interval scale were summarized using proportions (%). For analysing burn out related domains (personal, work related, client related) of CBI inventory Mean scores (mean ± SD) were calculated using the 0-100-point scale. Respondents with proportions of mean score of > 50 were classified as experiencing burnout in particular domain. For calculating and comparing overall burnout among respondents, mean scores (mean ± SD) of personal burnout domain was only used as per indicated in CBI scoring system. Parametric analysis is used for calculating p value by comparing the mean burnout scores among SARSCOV-2 and Non SARS COV-2 in each domain (personal, client related, work related) using independent student t test with p value of < 0.05, as statistically significant. Also, for calculating p value of burnout with demographic variables of respondents independent student t test is used with p value < 0.05, as statistically significant.

Results

Majority of subjects were female, (54%) SARS COV-2 area and (74%) Non SARS COV-2. Majority of subjects were predominantly nursing officers (82%) SARS COV-2 area and (88%) Non SARS COV-2 area. Most of the subjects 52% were single in SARS COV-2 area while in Non SARS COV-2 area most of the staff were married (72%). Most (62%) of the subjects who were working in SARS COV-2 area were having ≤ 5 years of working experience in clinical, while in Non SARS COV-2 area (24%) subjects were having ≤ 5 years of working experience in clinical. Majority (74%) of subjects worked for ≤ 8 hours in SARS COV-2 area and (60%) Non SARS COV-2 area. Most (66%) of subjects in SARS COV-2 area had age between 21-30 years, while (64%)of subjects in Non SARS COV-2 area had age between 31 - 40 years respectively (Table 1).

Variables		SARS COV-2 Percentage (%)	Non-SARS COV-2 Percentage (%)
Gender	Male	46	26
	Female	54	74
Marital Status	Married	48	72
	Single	52	28
Having children	Yes	28	58
	No	72	42
Years in practice	≤ 5 years	62	24
	> 5 years	38	76
Average daily workload	≤ 8 hours	74	60
	> 8 hours	26	40
Job profile	Doctors	18	12
	Nurses	82	88
Age	21 - 30 years	66	24
	31 - 40 years	28	64
	41 - 50 years	6	12

Table 1: Demographic characteristics of HCWs working SARS COV-2 and Non SARS COV-2 (N = 100).

The mean (± SD) scores of burnout syndrome among healthcare workers working in SARS-COV-2 area as per the personal, work-related, and client-related burnout domains of the CBI were 57.83 (± 17.05), 53.62 (± 11.09), and 46.5 (± 21.76), respectively (Table 2). The prevalence of personal burnout (57.3%), work related burnout (53.6%), client related burnout (46.5%) respectively among HCWs working in SARS COV-2 area. It can be interpreted that HCWs working in SARS COV-2 are experiencing high level of personal burnout and work related burn out.

Variables	Mean ± SD	Min. Score	Max. Score
Personal Burnout Domain	57.83 ± 17.05	25	95.83
Work related Domain	53.62 ± 11.09	25	78.57
Client related Domain	46.5 ± 21.76	0	83.3

Table 2: Mean ± SD score of personal, work related and client related burnout domain among respondents working in SARS COV- 2 area (n = 50). (Mean score of >50 were classified as experiencing burnout in particular domain).

The mean (± SD) scores of the burnout syndrome among healthcare workers working in Non SARS-COV-2 area as per the personal, work-related, and client-related burnout domains of the CBI were 47.5 (± 18.7), 46.14 (± 12.65), and 31.96 (± 22.13), respectively (Table 3). The prevalence of personal burnout (47.5%), work related burnout (46.14%), client related burnout (31.96%) respectively among HCWs working in Non SARS COV-2 area.

Variables	Mean ± SD	Min. Score	Max. Score
Personal Burnout Domain	47.5 ± 18.7	0	75
Work related Domain	46.14 ± 12.65	14.28	67.85
Client related Domain	31.96 ± 22.13	0	70.83

Table 3: Mean ± SD score of personal, work related and client related burnout domain among respondents working in Non SARS COV- 2 area (n = 50). (Mean score of >50 were classified as experiencing burnout in particular domain).

The comparison of burnout among healthcare workers working in SARS-COV-2 and NON SARS-COV-2 areas revealed the following findings. As shown in table 4, there was highly statistically significant association found between burnout domains measured by CBI among HCWs working in SARS-COV-2 and NON SARS-COV-2 area (p < 0.001). The Mean score (± SD) of personal burnout among HCWs working in SARS COV-2 area were 347 ± 102.3 while HCWs working Non SARS COV-2 area were 285 ± 112.7. The work related burnout mean score (± SD) of HCWs working SARSCOV-2 area were 375.4 ± 77.6, for HCWS working in Non SARS COV-2 area were 323 ± 88.6. The client related burnout mean score (± SD) of HCWs working SARS COV-2 area were 279 ± 130.5, for HCWS working in Non SARS COV-2 area were 191.5 ± 132.8. It can be interpreted that HCWs working in SARS COV-2 area were experiencing more burnout as compared with HCWs working in Non SARS COV-2 area respectively (p = 0.0049). HCWs working in SARS COV-2 area were experiencing more work related burnout as compared with HCWs working in Non SARS COV-2 area (p = 0.0022). HCWs working in SARS COV-2 area were experiencing more client related burnout as compared with HCWs working in Non SARS COV-2 area respectively (p = 0.0013).

Burnout domains	SARS COV-2 Area Mean ± SD	Non SARS COV-2 Area Mean ± SD	p value (< 0.05)
Personal burnout	347 ± 102.3	285 ± 112.7	0.0049*
Work related burnout	375.4 ± 77.6	323 ± 88.6	0.0022*
Client related burnout	279 ± 130.5	191.5 ± 132.8	0.0013*

Table 4: Comparison of mean between various domains of Burnout among HCWs working in SARS COV-2 and Non SARS COV-2 areas (N = 100). (Independent 't' test*, significant p value ≤ 0.05).

Burnout among demographic variables and healthcare workers working in both SARS-COV-2 and NON SARS-COV-2 areas yielded no statistically significant association in gender, marital status, years in practice and age (p value > 0.05). As shown in table 5, the Mean score (\pm SD) of personal burnout and demographic variables of HCWs working in SARS COV-2 area and Non SARS COV-2 area combined were analysed and mean scores (\pm SD) of HCWs workers working more than 8 hours were 365.1 ± 96.4 , while HCWs working less than 8 hours were 291.7 ± 111.1 respectively. A highly statistically significant difference was found between burnout and average daily workload of HCWs. It can be interpreted that HCWs working more than 8 hours are experiencing more burnout that HCWs working less than or equal to 8 hours with $p = 0.0016$ respectively.

Variables		Mean \pm SD	P value
Gender	Male (n = 36)	320.1 \pm 128	0.78
	Female (n = 64)	313.6 \pm 102.1	
Marital Status	Married (n = 60)	303.7 \pm 113.9	0.17
	Single (n = 40)	334.3 \pm 106.6	
Years in practice	≤ 5 years (n = 43)	321.5 \pm 92.8	0.67
	> 5 years (n = 57)	311.8 \pm 124.4	
Average daily workload	≤ 8 hours (n = 67)	291.7 \pm 111.1	0.0016*
	> 8 hours (n = 33)	365.1 \pm 96.4	
Age	21 - 30 years (n = 45)	323.3 \pm 102.5803	0.55
	31 - 50 years (n = 55)	310 \pm 118	

Table 5: Comparing of demographic characteristics of HCWs working in both SARS COV-2 and Non SARS COV-2 combined (N = 100). (Independent 't' test*, significant p value ≤ 0.05).

Discussion

This is the first comparative study conducted in India which compared the burnout in various domains of CBI among HCWs working in SARS COV-2 areas and Non SARS COV-2 areas respectively by providing relevant and significant statistical data which depicts the extent to which SARS COV-2 virus have affected the lives of healthcare workers in hospital setting. Burnout among healthcare workers have led to reduced motivation among them, fatigue for extended periods, decreased job productivity, unwillingness to take leadership job, decreased interest in job, absenteeism from job, decreased quality of care services for patients [17,18].

Outbreak of any infective disease always exaggerate psychological stress, anxiety, fear to health of self or to their families, risk of infectivity due to virus within hospital premises, burnout syndrome among HCWs [19,20]. In this study we have presented how SARS COV-2 pandemic have significantly doubled burnout syndrome among HCWs compared with those HCWs who are working NON SARS COV-2 areas.

In present study majority of subjects were female, (54%) SARS COV-2 area and (74%) Non SARS COV-2 consistent with other studies conducted during SARS COV-2 pandemic [14,21,22]. A study from Majority of subjects were predominantly nursing officers (88%) in both area. Burnout was found to be significantly associated with average daily workload among HCWs, $p < 0.001$, supported by studies, stating that increased workload is directly proportional to highest prevalence of burnout among HCWs [20,23]. While analysing burnout domain with gender, marital status, number of children, years of experience and job profile of HCWs no significant association was found between the groups as $p > 0.05$, whereas in contrary studies suggest that female, years of experience, nursing professionals are predominantly more prone to suffer from burnout syndrome [14,20,21,24].

In present study the prevalence of personal burnout (57.3%), work related burnout (53.6%), client related burnout (46.5%) respectively among HCWs working in SARS COV-2 area comparatively significantly higher when compared with HCWs working in Non SARS COV-2 area. The prevalence of personal burnout (47.5%), work related burnout (46.14%), client related burnout (31.96%) respectively among HCWs working in Non SARS COV-2 area. While various studies conducted to assess burnout among HCWs working during SARS COV-2 pandemic suggest (44.6%) personal burnout, (26.9%) work related burnout, (52.8%) pandemic related burnout supporting present study findings with high prevalence of pandemic related burnout and personal burnout among HCWs working in SARS COV-2 area [14,20-22]. Only few study have compared difference between burnout among HCWs working in SARSCOV-2 areas and Non SARS COV-2 areas. A study conducted by Spain despite being healthiest country in the world with robust healthcare facilities and high life expectancy, compared burnout among COVID-19 frontline workers and Non COVID-19 frontline workers, reported highest prevalence of burnout among COVID-19 frontline workers (49.6%) then Non COVID-19 frontline workers (34.6%), $p < 0.001$ [22] consistent with present study findings. Healthcare worker staff who are directly engaged with COVID-19 patient care showed emotional exhaustion and cynicism as compared with those working in Non COVID areas [25].

Era of SARS COV-2 pandemic resulted in increased level of burnout among HCWs in various domains. SARS COV-2 pandemic lead to increased level of stress, workload, fear of contracting infection among HCWs leading to high emotional exhaustion and depersonalization, decreased quality of patient care, inadequate availability of health care facilities, exaggerated depression, anxiety and psychological problems among HCWs with pre-existing mental problems [21-24]. Whereas burnout assessed during pre SARS COV-2 era was comparatively very less, the study conducted among 210 academic paediatric physicians, scored 22% in personal burnout domain, 14% in work related domain, and 8% in client related burnout domain [26].

It is necessary to prevent the detrimental effects of burnout among HCWs in long run using multipronged approach. Implementing preventive strategies will help in overcoming ameliorate effects of burnout among HCWs and also protect health care services from collapsing during this pandemic period. Overworked, dissatisfaction from the job profile, no vacations, monotonous working condition, lack of appreciation, poor decision making power, lack of interpersonal relationships, insomnia, perfectionistic tendencies, to be controlled by other on job etc. are some of the causes of burnout among HCWs at workplaces [27,28]. Emergence of pandemic, in particular, sudden manpower shortage, wearing of PPE kits along with lack of resources, fear of contracting with virus and spreading infection to family members have given an add on impact to anxiety, mental problems and burnout syndrome to HCWs [20]. Various continuous ongoing preventive actions are much needed for promoting and protecting psychological well beings of HCWs during this SARS COV-2 pandemic both by using digital platform and offline mode directly at workplaces. As the current condition of SARS COV-2 pandemic suggest that this pandemic won't disappear in short term or mid-term period in fact it will run for long time period every HCWs should take individual responsibility in managing and distressing themselves by focusing on self-care strategies, adopting personalized resilience plan either through webinar training and digital learning package for psychological well-being [29]. Techniques like mindfulness mitigated positive effect on overcoming fear due to COVID-19 and job insecurity among restaurant employees. Perceived organizational support found to have escalated positive impact on relationship between job insecurity and frontline workers emotional exhaustion [30] which can be implemented among HCWs too. In case of actual suffering, expressing fear and taking help from colleagues, family members or experts should always be kept as priority [14].

Strength and Limitations

It is a first comparative study in India which measure prevalence of burnout syndrome among HCWs working in SARS-COV-2 areas and Non SARS-COV-2 areas independently and comparatively for better understanding the impact of pandemic among HCWs. Data was collected in the month of January- March 2021 period, when SARS COV-2 cases were less in number, which mean it might not have escalated the response rate regarding burnout among HCWs who are working in SARS COV-2 areas giving actual picture on burnout during pandemic time. Study have clearly defined exclusion and inclusion criteria which distinguish both the groups appropriately and accurately. The study has the following limitations. It is a cross section study and lack longitudinal follow ups with the sample. Second, among HCWs

doctors represent only 12% in Non SARS COV-2 and 18% in SARS COV-2 of subjects making it difficult to generalize findings among doctors. Third it was Google based survey leading biasness in responses. The respondents who filled the Google form of the study were those who are already prevailing with anxiety, depression or any other mental problems, or on contrary have included those participants who are either too stressed to response or not at all stressed to response. The survey don't include question regarding availability of PPE, availability of adequate staff, any remedial measures if any taken by administration for preventing burnout among HCWs.

Conclusion

It necessitate to conduct a comparative study in tertiary care hospital of India during this SARS COV-2 pandemic period. To get better picture about what extent is burnout prevailing among HCWs working in SARS COV-2 and NON SARS COV-2 areas both independently and comparatively due to the pandemic. There was significant high level of burnout prevails among HCWs working in SARS COV-2 area as compared with HCWs working NON- SARS COV-2 areas. Increased daily average workload is significantly associated with high level of burnout among HCWs. No significant association was found between age, gender, marital status, number of children, job profile, years of experience and burnout.

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