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Original Research Article

Professional quality of life among physicians posted in COVID-19 clinics at a tertiary care hospital in South India: a cross-sectional analytical study

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ABSTRACT

Background: COVID-19 pandemic has largely affected the well-being and quality of life among health care workers. We undertook this study to assess the burden and determinants of compassion satisfaction, burnout and Secondary traumatic stress among resident doctors
Methods: A cross-sectional analytical study was done among the residents posted in covid wards for clinical duties in tertiary care in Puducherry. All residents who did at least 5 shifts during the last month of their COVID duty were emailed a google form that contained the professional quality of life questionnaire version 5.
Results: Around 108 residents agreed to participate in the study. We found that around 80% of the residents experienced moderate compassion satisfaction, while 73% of them experienced moderate burnout, and 66% of them experienced secondary traumatic stress. Speciality, marital status, tobacco use, and being posted in ICU/wards stood out as independent determinants of burnout, while caffeine/ alcohol and tobacco intake were found to be associated with secondary traumatic stress.
Conclusions: Thus, our study highlights the burden of burnout among residents posted in COVID wards.

Keywords: COVID-19**,** Compassion fatigue, Compassion satisfaction, Burnout, Health professional

INTRODUCTION

The severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) emerged from the Wuhan Province of China since December 2019.[1-3] With a global burden of nearly 420 million positive cases reported as of February 2022, the global spread of SARS-CoV-2 has seen almost three waves during the pandemic. Having spread to almost 210 countries as of date, the COVID-19 pandemic had created havoc in the public health systems of all countries across the globe over the past two years.[4-6] India has also reported around 43 million cases and 500,000 deaths as of February 2022. The mental health and well-being of the health care professionals had always been a less focused domain during this pandemic.[7] Despite the increased anxiety, stress and fear among the general public during the pandemic, frontline health care workers have reported increased workload and burnout during their clinical duties. Furthermore, the quality of life of health care professionals is also largely influenced by increasing demand, longer working hours, increased risk of infection

and transmissibility to family members and social isolation.[8,9]

The impact of these social factors on the quality of life of these health care workers are alarming especially for the residents who are working in COVID-19 wards, taking their degree of exposure, duration frequency of shifts and stress into consideration. Several scales are in place to measure the quality of life among health care professionals, of which the Professional quality of life (ProQol-Version 5 questionnaire) introduced by Stamm et al comprehensively measures various components determining the professional quality of life such as burnout (BO), compassion satisfaction (CS) and secondary traumatic stress (STS). BO is a component of ProQol that measures emotional exhaustion and depersonalisation owing to job-related stress, whereas STS revolves around the stress that the HCW experience in a desire to relieve patients pain and suffering.[10-11] In contrast, CS is often considered as a feeling of satisfaction of happiness of doing their job well. It has also been documented by several studies from various study settings that this COVID-19 pandemic has by and large affected the quality of life of health care personnel.[12]

Despite the effect of COVID-19 on the mental health component of treating physicians' lives are widely studied, there is limited literature that has explored the professional quality of life of resident doctors encompassing burnout, compassion satisfaction and secondary traumatic stress into consideration. Thus, we planned to undertake this study to assess the burden and determinants of Compassion satisfaction, Burnout and Secondary traumatic stress among residents posted at COVID-19 wards for clinical duties in tertiary care in Puducherry using the professional quality of life questionnaire version 5 questionnaire.

METHODS

We adopted a cross-sectional analytical design to evaluate the professional quality of life among residents posted in COVID clinics. The data was collected during the second wave of the COVID-19 pandemic in 2020-2021.

Study population

Only resident doctors were included, who were posted from various departments in the COVID-19 ward, who had taken at least 5 shifts during the last month of their COVID duty in the tertiary care institute, Puducherry. Residents refusing to participate in the study were excluded.

Sampling method

Universal sampling, all the residents fulfilling the criteria will be emailed the ProQol-Version 5 questionnaire using google forms, the reply mails will be considered as an entry and will be enrolled into the study until the sample size is reached.

Sample size

Based on a previous systematic review that assessed the pooled estimates of burnout among healthcare workers in the Southeast Asian region to be 60.5%, with 95%CI, 5% alpha error, 20% relative precision, the sample size was calculated to be 64. However, we interviewed all the residents posted in COVID clinics during the study period.[7]

Study procedure

A list of all residents posted in the COVID-19 wards in the tertiary care institute, who have attended a minimum of 5 duties per week, during the last month was prepared. The contact numbers and email ids of these residents were collected, according to the department wise, from the health care workers database of the institute. All the eligible residents were mailed the ProQol-Version 5 questionnaire through a google form link. Attempting to fill the form by clicking on the link will be considered as informed consent for the study. All the Residents were provided 3 reminders for three consecutive days if they haven't responded to the google form. Any attempt not made to fill the form despite the reminders will be considered as non-willing for participation in the study. The questionnaire contains two parts namely the personal details and the ProQol-Version 5 questionnaire. The questionnaire has three sub-scales; compassion satisfaction (CS), burnout (BO), and secondary traumatic stress (STS). The ProQOL is a 30-item self-report measure. Each subscale consists of 10 questions, with each item rated on a 5-point Likert scale (1=never, 2=rarely, 3=some- times, 4=often, and 5=very often). It has been validated in several populations and shown to have high reliability and validity for assessing ProQOL. (ref) The scoring of each subcategory ranged from 5 to 50. A higher score on a subscale signifies a higher degree of the corresponding sub-factor. A score of 22 or less is considered "low"," average" scores range from 23 to 41, and 42 or higher is considered a "high" score. It took on an average of 10 mins to complete the questionnaire. The responses were then extracted from the google forms and used for analysis. The Cronbach's alpha and the composite reliability values for the individual components of the ProQOL was found to be high. (CS had an $\alpha = 0.90$ and CR=0.92, while STS had α=0 .82, CR=0.88 ; and Burnout component has an $\alpha = 0.80$, and CR=0.83 and is validated for use among nurses.[7]

Data analysis

Data was extracted from google forms into Microsoft Excel and analyzed using STATA version 14. The proportion of residents experiencing CS, BO and STS was summarized as proportions with 95%CI. Continuous variables were summarized as mean (SD) or median (range) based on normality. Categorical variables were summarized as frequency and percentages. Association between the proportion of residents experiencing CS, BO

and CTS with the independent variables will be done using the chi-square test. Variables that had a p-value of less than 0.20 in the univariate analysis were included in a multivariable model. Unadjusted and adjusted prevalence ratios with 95% CI were calculated and a P-value of less than 0.05 was considered statistically significant.

RESULTS

Our study was conducted to assess the Professional quality of life, i.e., compassion satisfaction, burnout and secondary traumatic stress among the residents posted for clinical duty in COVID-19 wards using the Professional quality of life questionnaire (PQLI). A total of 108 Residents were included in the study. Demographic details of the study participants are given in (Table 1).

Table 1: Demographic characteristics of physicians posted for COVID duty (n=108).

Characteristics		N (%)
Age (years)	<28	84 (77.8)
	≥28	24 (22.2)
Gender	Male	84 (77.8)
	Female	24 (22.2)
Marital status	Unmarried	90 (83.3)
	Married	18 (16.7)
Place of posting	Ward	53 (49.2)
	Screening	6 (5.5)
	Triage	17 (15.7)
	ICU	32 (29.6)
Speciality	Clinical	81 (75.0)
	Non clinical	27 (25.0)
Duration of posting (months)	<2	76 (70.4)
	≥2 months	32 (29.6)
Night shift during last duty	Yes	69 (63.9)
	No	39 (36.1)
Number of night shifts	<7	63 (58.3)
	≥7	45 (41.7)
Physical Activity	Yes	54 (50.0)
	No	54 (50.0)
Caffeine intake	Yes	87 (81.6)
	No	21 (19.4)
Current smoker	Yes	9 (8.3)
	No	99 (91.7)
Current alcoholic	Yes	19 (17.6)
	No	89 (82.4)

The majority of the study participants were aged less than 28 years (77.8%) and were males (77.8%). Three fourth of them were from clinical departments. Only 16% were married. Nearly half of them (49%) were posted in COVID-19 ward, nearly one third (30%) in Covid19 ICU and the remaining were posted in COVID-19 triage and COVID-19 screening. Nearly 30% of them were posted for more than two months. More than 40% of them had seven and more night duties, and nearly one-third of them had night duty during their last posting. While half of them (50%) were involved in physical activity, more than 80% had regular caffeine intake. Less than one fifth (17.6%) were current alcohol consumers, and only a few (8.3%) were current tobacco users.

Compassion satisfaction

Four-fifths (80%) of the Residents had moderate compassion satisfaction, and the remaining 20% had high compassion satisfaction. Age of the Residents, speciality, duration of posting and the number of night duties showed signification association with high Compassion satisfaction in univariate analysis while none of the variables had an independent association with high compassion satisfaction in multivariable model (Table 2). Nearly three fourth (73%) of the Residents had moderate burnout. Burnout was more commonly seen among unmarried Residents (aPR: 1.66 (95%CI 1.06-2.61) p value 0.027) and those who were currently using tobacco (aPR: 2.09 (95%CI 1.10-3.98) p value: 0.025). Residents posted in ward or ICU duty (aPR:1.69 (95%CI 1.14-2.53) p value: 0.01) and those from clinical specialities (aPR: 0.89 (95%CI 0.81-0.98) p-value 0.018) had a higher risk of developing burn out (Table 3).

Secondary traumatic stress

Two-thirds (66%) of the residents had moderate secondary traumatic stress. Residents who consumed caffeine (aPR of1.13 (95%CI 1.13-1.13) p-value: 0.00) regularly were at higher risk of developing moderate secondary traumatic stress. Residents who were currently consuming alcohol; aPR of 1.56 (95%CI 1.35-1.81) p value 0.02, and tobacco; aPR of 4.34 (95%CI 1.26-14.9) p value: 0.02 were found to have a higher risk of developing moderate secondary traumatic stress (Table 4).

DISCUSSION

Health care workers treating COVID-19 patients are vulnerable to stress, anxiety and depression, and they have reported very high levels of anxiety and low levels of self-efficacy.[13] Their psychological response to Covid19 is complicated, which include feelings of vulnerability or loss of control and concerns about the health of their family and themselves, the spread of the virus, changes in work pattern and working environment, and social isolation.[14,15] Uncertainty about the duration of the crisis, lack of proven therapies and potential shortages of health care resources are the major contributors to added psychological morbidity during the pandemic.[15] Preparedness and social support are the two major factors shown to reduce the psychological effects of COVID-19 among health care workers. However, most of the institutions lack resources for psychological support during the pandemic. We aimed to study the effect of COVID-19 on the mental health of health care workers and the measures taken by them to safeguard themselves during the COVID-19 pandemic. Pandemic has exposed HCWs to a new complex work environment which is physically and mentally exhausting. Compassion satisfaction is the satisfaction experienced by the health care workers while performing their duty correctly and also the satisfaction derived from a positive work environment.[16,17]

Table 2: Association between sociodemographic characteristics and Compassion satisfaction among physicians posted in COVID duty (n=108).

Characteristics		N (%)	Unadjusted Prevalence ratio (CI)	Adjusted Prevalence ratio (CI)	P value
Age (years)	≥28	24 (22.2)	2.63 (1.26-5.48)	1.28 (0.55-3.01)	0.560
	<28	84 (77.8)			
Gender	Male	84 (77.8)	1.71 (0.55-5.33)	Not included	
	Female	24 (22.2)			
Marital status	Married	18 (16.7)	0.83 (0.27-2.54)	Not included	
	Unmarried	90 (83.3)			
	ICU	6 (5.6)			
Place of posting	Ward/ICU	85 (78.8)	1.45 (0.47-4.46)	Not included	
	Screening/Triage	23 (21.2)			
Speciality	Clinical	81 (75.0)	6.67 (0.94-47.34)	5.57 (0.77-40.51)	0.090
	Non clinical	27 (25.0)			
Duration of posting (months)	≥2	32 (29.6)	2.61 (1.32-5.53)	1.43 (0.67-3.06)	0.352
	<2	76 (70.4)			
Night shift during last duty	No	39 (36.1)	1.33 (0.62-2.86)	Not included	
	Yes	69 (63.9)			
Number of night shifts	≥7	45 (41.7)	3.5 (1.47-8.32)	2.56 (0.97-6.77)	0.057
	<7	63 (58.3)			
Physical activity	No	54 (50.0)	1.33 (0.61-2.90)	Not included	
	Yes	54 (50.0)			
Caffeine intake	No	21 (19.4)	1.66 (0.73-3.75)	Not included	
	Yes	87 (81.6)			
Current smoker	Yes	9 (8.3)	0.93 (0.25-3.46)	Not included	
	No	99 (91.7)			
Current alcoholic	Yes	19 (17.6)	1.87 (0.84-4.20)	Not included	
	No	89 (82.4)			

Lack of compassion satisfaction can lead to compassion fatigue and burnout. Lack of preparedness, Maladjustment, extended work hours and uncertainty about pandemic affects compassion satisfaction and lead to compassion fatigue. A balance between compassion satisfaction and compassion fatigue determines the professional quality of life.[17] Four-fifths of our study participants had compassion satisfaction which was similar to the findings from other studies. Burnout, a state of emotional, physical, and mental exhaustion, is common among health care professionals. An increase in COVID-19 cases not accompanied by an increase in the capacity of health care facilities and manpower has increased burnout by many folds. Our study also showed a very high prevalence of burnout (73%) which is consistent with the findings from other studies. High levels of burnout affect productivity and decrease job satisfaction, commitment and quality of care. It can also lead to poor health outcomes such as cardiovascular disease and premature mortality in the long run. It also takes a toll on the health care system by affecting the quality of care and resulting in absenteeism and workforce turnover.[13] Compassion fatigue and burnout together causes secondary traumatic stress in health care workers. Two third of our study participants had reported having secondary traumatic stress, which is similar to studies done across various study settings.

A positive work environment determined by working hours, work experience, mental support and acknowledgement plays a significant role in preventing the development of compassion fatigue, burnout and secondary traumatic stress. Personal and behavioural factors are equally important, thus we tried to explore the personal and behavioural factors affecting the development of compassion satisfaction, burnout and secondary traumatic stress. Increased number of night shifts were found to increase compassion fatigue which can be attributed to lack of sleep and adequate rest.[18]

Burnout was more common among unmarried HCWs than married HCWs, underscoring the importance of emotional support by the family.[19] HCWs working in ICUs and wards had increased prevalence of burnout compared to screening and triage areas.[19] This can be because of treating sicker patients, continuous monitoring of patients, witnessing deaths and working in the more stressful work environment.

Table 3: Association between sociodemographic characteristics and burn out among physicians posted in COVID duty (n=108).

Characteristics		N (%)	Unadjusted Prevalence ratio (CI)	Adjusted prevalence ratio (CI)	P value
Age (years)	<28	84 (77.8)	1.13 (0.83-1.53)	Not included	
	≥28	24 (22.2)			
Gender	Female	24 (22.2)	1.11 (0.87-1.42)	Not included	
	Male	84 (77.8)			
Marital status	Unmarried	90 (83.3)	1.38 (0.90-2.11)	1.66 (1.06-2.61)	0.027
	Married	18 (16.7)			
Place of posting	Ward/ICU	85 (78.8)	1.35 (0.92-1.99)	1.69 (1.14-2.53)	0.010
	Screening/Triage	23 (21.2)			
Speciality	Clinical	81 (75.0)	1.31 (0.94-1.83)	0.89 (0.81-0.98)	0.018
	Non clinical	27 (25.0)			
Duration of posting (months)	≥2	32 (29.6)	1.10 (0.87-1.39)	Not included	
	<2	76 (70.4)			
Night shift during last duty	Yes	69 (63.9)	1.03 (0.81-1.31)	Not included	
	No	39 (36.1)			
Number of night shifts	≥7	45 (41.7)	0.91 (0.71-1.15)	Not included	
	<7	63 (58.3)			
Physical activity	Yes	54 (50.0)	1.08 (0.86-1.36)	Not included	
	No	54 (50.0)			
Caffeine intake	Yes	87 (81.6)	1.03 (0.76-1.39)	Not included	
	No	21 (19.4)			
Current smoker	No	99 (91.7)	1.68 (0.87-3.24)	2.09 (1.10-3.98)	0.025
	Yes	9 (8.3)			
Current alcoholic	Yes	19 (17.6)	1.01 (0.75-1.36)	Not included	
	No	89 (82.4)			

Table 4: Association between sociodemographic characteristics and secondary traumatic stress among physicians posted in COVID duty (n=108).

Characteristics		N (%)	Unadjusted Prevalence ratio (CI)	Adjusted Prevalence ratio (CI)	P value
Age (years)	<28	24 (22.2)	0.92 (0.65-1.30)	Not included	
	≥28	84 (77.8)			
Gender	Female	24 (22.2)	1.17 (0.88-1.54)	Not included	
	Male	84 (77.8)			
Marital status	Unmarried	90 (83.3)	1.4 (0.87-2.27)	Not included	
	Married	18 (16.7)			
	ICU	6 (5.6)			
Place of posting	Ward/ICU	85 (78.8)	1.21 (0.81-1.79)	Not included	
	Screening/Triage	23 (21.2)			
Speciality	Non clinical	27 (25.0)	1.15 (0.87-1.52)	Not included	
	Clinical	81 (75.0)			
Duration of posting (months)	≥2	32 (29.6)	1.11 (0.85-1.47)	Not included	
	<2	76 (70.4)			
Night shift during last duty	Yes	69 (63.9)	1.37 (0.99-1.89)	Not included	
	No	39 (36.1)			
Number of night shifts	≥7	45 (41.7)	1.18 (0.91-1.54)	Not included	
	<7	63 (58.3)			
Physical activity	Yes	54 (50.0)	1.00 (0.77-1.31)	Not included	
	No	54 (50.0)			
Caffeine intake	No	21 (19.4)	1.38 (1.08-1.75)	1.13 (1.13-1.13)	0.001
	Yes	87 (81.6)			
Current smoker	No	99 (91.7)	3.97 (1.13-13.99)	4.34 (1.26-14.9)	0.02
	Yes	9 (8.3)			
Current alcoholic	Yes	19 (17.6)	1.34 (1.04-1.72)	1.56 (1.35-1.81)	0.001
	No	89 (82.4)			

Surprisingly, burnout was common among current non-smokers. A sense of temporary pseudo-relief provided by smoking might be responsible for this low perception of burnout among current smokers.

Caffeine intake was found to decrease secondary traumatic stress among the HWCs for the same reason. Interestingly smoking had decreased secondary traumatic stress while alcohol consumption had increased it. This may be because people with continued secondary traumatic stress resort to unhealthy coping mechanisms like alcohol consumption to relieve stress. However, caffeine intake, smoking and alcohol consumption can provide only temporary relief. Identifying the causes of compassion fatigue, burnout and secondary traumatic stress and preventing them is the need of the hour. Wellness programs in health care settings to provide continued medical education, regular supervision, ergonomic reforms according to the need and recreational activities can decrease burnout and compassion fatigue.[18]

Indulging in coping mechanisms like physical activity, meditation and other spiritual activities can reduce the impact of burnout and compassion fatigue.[20] Creation of virtual support groups and provision of talk therapy by institutions to improve social support can be effective innovations to combat compassion fatigue, burnout and secondary traumatic stress during this COVID-19 pandemic.[20] Our study was one of the few studies that have explored the level of professional quality of life among resident doctors from south India.

Despite the strengths, our study had a few limitations. Due to the methodological constraints, we were not able to evaluate the effect of independent variables on CS, BO, CTS over time. Due to online data collection methods, the possibility of selection and social desirability bias could not be avoided, though we were unable to collect data in person owing to COVID-19 circumstances. Moreover, the estimates of CS, BO, and CTS could be overestimated taking the huge caseload of the tertiary care institute into consideration. These limitations need to be considered before generalising our study results to other study settings.

CONCLUSION

Thus, our study showed that more than 2 in every 3 residents posted in Covid wards experience burnout and secondary traumatic stress. concluded by emphasizing the importance of protecting the mental health of health care professionals during times of pandemics. It is of prime importance to preserve the mental health of health care workers, by facilitating appropriate support, and by establishing specific strategies to address their mental health issues at an institutional level.

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