

Burnout prevalence and its association with determinants among health care workers of rural population in a Ajmer district of Rajasthan

¹Dr. Pragati Bhatnagar, ²Dr. Amit Shrivastava, ³Dr. Deepak Choudhary,
⁴Dr. Ashok Rathore

¹Department of Psychiatry, Medical Officer PDU Medical College and Attached Group of Hospitals, Churu, Rajasthan, India

²Department of Forensic Medicine, Assistant Professor, PDU Medical College and Attached Group of Hospitals, Churu, Rajasthan, India

³Department of Anesthesia, Associate Professor, PDU Medical College and Attached Group of Hospitals, Churu, Rajasthan, India

⁴Department of Medicine, Associate Professor, Jhalawar Medical College, Jhalawar, Rajasthan, India

Corresponding Author:

Dr. Ashok Rathore

(rathoreashok80@gmail.com)

Abstract

Background: Corona virus disease is an ongoing pandemic. COVID-19 had put cumbersome mental and physical pressure on the healthcare staff which may lead to burnout in them. Also there is paucity of Indian literature regarding prevalence of burnout in rural health care staff.

Objectives: To study the prevalence of burnout and its association with the determinants among the healthcare workers in rural population of a Ajmer district, Rajasthan.

Methodology: A Cross Sectional Questionnaire based study was conducted from January 2021 to June 2021 on 173 healthcare staff of rural population in a Ajmer district, Rajasthan after ethical clearance. Copenhagen Burnout Inventory was used to assess the burnout among Health Care Workers and a semi structured Performa was used to evaluate the demographic and clinical determinants of burnout. Prevalence of burnout was determined and the association of determinants with burnout was assessed.

Results: The prevalence of personal burnout, work related burnout and pandemic related burnout in health care workers was 42.5%, 33.75% and 49.37%. Pandemic related burnout was significantly greater than personal burnout and work related burnout in health care workers. Doctors, redeployed healthcare staff and staff having covid positive case in family have significantly greater burnout. Supportive work environment and adequate protective measures at workplace significantly reduces the burnout among health care staff.

Conclusion: Almost half of the rural health care workers are burnout. Protective authoritative and individual measures are needed to prevent burnout in HCWs.

Keywords: Health care workers, rural population, burnout, COVID-19

Introduction

Health care system is the most crucial aspect of the country and Health care workers (HCWs)

are backbone of health care system. HCWs are under immense pressure due to lack of balance between unlimited health needs of the community and limited number of health care staff. In 2020, corona virus disease, emerges in India which further had put unknown prodigious strain on HCWs. Apart from the work stress, Covid 19 disease pose a tremendous and multifactorial stress on HCWs ranging from leave cancellation, residential problems, fear of infection, fear of family got infected, redeployment and lockdown at the inter- Ajmer district and national levels. These all factors cumulate together and lead to multiple adverse effects to mental and physical health of HCWs which may lead to burnout in them.

Freudenberger and Maslach in 1970s, first described Burnout as a state of “emotional exhaustion” among professionals. It is defined as a state of physical, emotional and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding. It is a multidimensional syndrome comprising emotional exhaustion, depersonalization and reduced sense of personal accomplishment ^[1-4]. Prior literature had addressed many negative outcomes of burnout such as lack of job satisfaction ^[5], decrease work passion ^[6], sleep difficulties ^[7], absenteeism, anxiety, depression ^[8], voluntary early retirement ^[9], suicidal ideas ^[10] and death ^[11]. Thus identification of burnout at an early stage may help in curbing some of the above issues and will lead to development of measures to decrease and manage the burnout in HCWs.

To the best of my knowledge, only one Indian study had assessed burnout in HCWs in Nasik Maharashtra in hospital ICU settings ^[4]. None of the study was conducted to assess burnout at ground level, rural areas. HCWs at rural areas apart from Covid-19 had some add-on difficulties like travel and distance problems, lack of essential services, lack of staff, multiple programs running together-their planning, execution, managing and reporting, multiple meetings and training, covid sampling, covid vaccination and false belief and attitudes of people regarding covid-19. Thus we plan our study to assess the prevalence of burnout and its association with demographic and clinical determinants among health care workers in rural population of a Ajmer district, Rajasthan.

Methodology

Aim

To study the prevalence of burnout and its association with the determinants among the healthcare workers in rural population of in a Ajmer District of Rajasthan.

Objective

To assess the prevalence of burnout among healthcare workers in rural population of a Ajmer district, Rajasthan.

To determine the association between burnout and demographic determinants among healthcare workers in rural population of a Ajmer district, Rajasthan.

To determine the association between burnout and clinical determinants among healthcare workers in rural population of a Ajmer district, Rajasthan.

Subjects

A cross sectional questionnaire based study was carried out at Block level of Ajmer district of Rajasthan. All the HCWs of the block i.e. One hundred and seventy-three HCWs, either gender and literate enough to understand questionnaire were enrolled using simple random sampling for the study consecutively from January 2021 to June 2021. Informed consent to participate was obtained from all subjects before beginning the survey. The study follows all the ethical norms.

Study design

Demographic and clinical data were obtained from the HCWs through interview using a semi-structured questionnaire. The burnout was assessed in them using Copenhagen burnout inventory rating scale. [13] The assessment was done during HCWs vaccination camps when they were stayed for observation at Centre for 30 minutes, prior and after block meetings and visiting different PHC and CHC multiple times. Incomplete forms are checked then and there and the participants are requested to duly complete the questionnaire to decrease the non-response rate. I had chosen the offline in presence filling of questionnaire to reduce the nonresponse rate while most of the study were done online.

Instruments of study

Semi-structured questionnaire: The questionnaire was divided into two categories.

Demographic data: It includes age, type of health care workers, gender, marital status.

Clinical data: It comprises of redeployment, covid symptoms, covid positive in family, living with family, support at work place, protective gears at workplace.

Copenhagen burnout inventory (CBI) [12]: The Copenhagen burnout inventory is a subjective scale consisting of 3 subscales. The first scale assesses the personal burnout and had five items. The second subscale had six items and measures the work-related burnout. The third scale was based on client-related burnout and had 6 items. In the client related workout domain, I will assess the burnout due to corona virus disease and named it as pandemic related burnout. All the items had five response categories. Each options mentioned in the questionnaire were in two formats: five response categories in Likert scale (for intensity) “a very high degree” to “a very low degree”; other for frequency from “always” to “never or almost never”. Each scale ranged from 0 to 100 points, with higher the score suggesting higher level of burnout. The average of the scores was taken as total score and burnout was stated as CBI score >50.

Statistical analysis: The qualitative data were expressed in proportion and percentages. The difference in proportion of the three groups was analyzed by using kruskal wallis test. Significance level for tests were determined as 95% ($p < 0.05$).

Observation and Results

Out of 173 HCWs, I had received 13 unfilled or incompletely filled questionnaire forms. Thus the study population emerges to 160 HCWs.

Table 1: Prevalence of personal burnout, work related burnout and pandemic related burnout

Prevalence	Personal burnout (n=68)	Work related burnout (n=54)	Pandemic related burnout (n =86)	Significance
	42.5%	33.75	53.75	<0.05

Almost half of the HCWs were having burnout. Pandemic based burnout was significantly greater than personal and work related burnout.

Table 2: Distribution of Sociodemographic and Clinical determinants of burnout in health care workers

Determinants	Number	Percentage
Age		
18-45	98	61.25
45-60	62	38.75
Gender		
Males	92	57.5
Females	68	42.5
Marital status		
Unmarried	30	18.75
Married	130	81.25
Type of HCWs		
Doctor	29	18.13
other staff	131	81.87
Redeployment		
Yes	18	11.25
No	142	88.75
Presence of covid symptoms		
Symptomatic	28	17.5
Asymptomatic	132	82.5
Covid positive in family		
Yes	71	44.38
No	89	55.62
Living with family		
Yes	105	65.60
No	55	34.40
Support at workplace		
No	58	36.45
Yes	102	63.75
Satisfied with protective gears at work place		
Yes	24	20
No	136	80

Most of HCWs studied were young, male, married and living with the family. Eighty percent HCWs were not doctors and belong to nursing and administrative staff. Approximately ten percent staff was deployed to new workplace. Almost Twenty percent HCWs were symptomatic and twice of them were having covid positive family members during the study. Majority of HCWs found their workplace supportive but were not satisfied with the protective measures provided at workplace.

Table 3: Relationship between determinants and personal burnout, work related burnout and Pandemic related burnout

	Personal burnout	Work related burnout	Pandemic related burnout	Significance
Age				
18-45	42(42.86)	38(38.78)	53(54.08)	>0.05
45-60	24(38.71)	18(29.03)	30(48.38)	
Gender				
Males	31(33.70)	18(19.56)	35(38.04)	>0.05.
Females	29(42.64)	22(32.35)	32(47.05)	
Marital status				
Unmarried	9(30)	7(23.33)	10(33.33)	>0.05
Married	23(17.70)	32(24.61)	40(34.77)	

Type of HCWs				
Doctor	12(41.37)	14(48.27)	18(62.07)	<0.05
other staff	54(41.22)	48(36.64)	67(51.14)	
Redeployment				
Yes	7(38..88)	5(27.78)	10(55.56)	<0.05
No	39(27.46)	35(24.67)	49(34.50)	
Presence of covid symptoms				
Symptomatic	11(39.28)	13(46.42)	15(53.57)	>0.05
Asymptomatic	42(31.8)	40(30.30)	59(44.96)	
Covid positive in family				
Yes	43(54.43)	39(49.36)	47(59.49)	<0.05
No	25(31.64)	22(27.85)	37(46.84)	
Living with family				
Yes	29(27.62)	36(34.28)	43(40.95)	>0.05
No	17(37.78)	19(42.22)	22(48.89)	
Support at workplace				
Yes	25(24.50)	20(19.06)	36(35.39)	<0.05
No	18(31.03)	28(48.37)	30(51.72)	
Satisfied with protective gears at work place				
Yes	6(25)	5(20.83)	8(33.33)	<0.05
No	43(31.61)	54(39.71)	67(49.26)	

Burnout was significantly higher in doctors, redeployed HCWs and HCWs having covid positive member in family. HCWs working in unsupported workplace and not satisfied with the protected measures at work place have significantly greater burnout.

Discussion

This is the first Indian study conducted on burnout in rural HCWs using Copenhagen burnout inventory (CBI). The study showed that almost half of our HCWs was having burnout. The finding was in concordance with outcome of study conducted by khasane *et al.* in Nashik, Maharashtra at ICU settings^[4]. This denotes that burnout prevalence is equivalent in HCWs of urban and rural areas of India. Similar prevalence of burnout using CBI was also seen in Malaysian^[13] and Singapore^[14] studies while United Kingdom^[15] studies had greater burnout in HCWs. Burnout prevalence studies using Maslach burnout inventory also reflects similar result in Italian, Spanish, Chinese HCWs^[16-18]. Japanese study showed lower burnout prevalence in HCWs as compared to our study findings^[19]. Multiple instrument for measuring burnout are available such as Maslach burnout inventory (MBI), MBI-General Survey (MBI-GS), Shirom-Melamed Burnout Measure (SMBM) and Oldenburg burnout scale^[20]. Most commonly used burnout scale is Maslach burnout inventory^[21, 22]. I had used Copenhagen burnout inventory as it is easy to use, simple to understand, had good reliability and internal validity. It also differentiates the burnout independently in personal, work related and client based^[12]. Therefore, in the current scenario, burnout due to covid can better be assessed using it.

Study also depicts Pandemic related burnout was significantly greater than work related and personal burnout in HCWs. The findings were in line with prior literature. During current times corona virus infection had dramatically increase the strain on HCWs apart from the work pressure^[4, 23], but some studies have contradictory findings^[24].

Burnout had multifactorial causation ranging from personal, professional to environmental factors. More the negative factors present in the individual more the risk of burnout in him. This study had explored some of the factors and their relationship with burnout. The study depicts greater burnout in doctors than other medical staff. Our study finding were alike to other prior literature on burnout in HCWs^[4, 14]. Doctors in rural medical services are

performing dual duties, treating patients as well the managing administration at their centers. Increase burnout lead to more medical errors which further reduces patient satisfaction. It also leads to personal breakdown causing interpersonal relationship issues, substance abuse and give on to voluntary retirement in some of them.

Higher burnout was also exhibited in young age, females and unmarried HCWs, but there was no significant difference found in the study. Prior studies found significant difference in burnout with age, ^[17,19] gender ^[4] and marital status. ^[14,25] They had stated inexperience in young HCWs, more liabilities in females HCWs and lack of support in unmarried staff as the reason for higher burnout in them.

Redeployed HCWs have significant more burnout and staff living with the family have significantly low burnout in them. The findings were supported with some of the previous studies ^[26] redeployment lead to stress in form of adjusting with new environment, city and workplace, whereas living with the family relaxes the HCWs by greater adjustment in environment and workplace. Moreover, family also acts as a support system in the state of crisis which further reduces the chances of burnout in HCWs living with family. ^[25]

Burnout was detected significantly higher in HCWs having covid positive family members in the study. Detection, treatment, taking care of them in quarantine, sometimes hospitalization of family member, these additional duties make HCWs more prone for burnout. Many of HCWs assumed themselves as a source of corona virus infection in the family leading to guilt and resentment in them which further make them at risk for the burnout. There was no significant difference in burnout among HCWs having presence or absence of covid symptoms in them. This may be due to greater awareness in HCWs about treatment of covid and precautions to be taken during corona disease. The study is the pioneer study which also evaluates effects of corona disease individually and in family.

Furthermore, HCWs working in unsupportive work environment make them vulnerable for burnout as it strains the atmosphere and make it difficult for HCWs to work comfortably and efficiently. There was shortage of protective gears such as mask, PPE Kits and sanitizers at rural health care centers in covid era. Thus most of the staff were not satisfied with the protective measures provided by the government. Decrease in protective measures increase the chance of covid spread in them and their family members which also affect the functioning of HCWs in field. Significantly greater burnout was seen in HCWs unsatisfied with protective measures. The fear of getting infected and spreading infection make them susceptible for burnout. Earlier studies had shown equivalent results while assessing burnout. ^[15, 25]

Assessment of these factors showed us the grey areas in the healthcare system of our country. Multidirectional approach should be used by the health care system and HCWs individually to curb the chances of burnout in them. Staff recruitment, timely leaves, residential quarters at workplace, timely and adequate supply of protective measures and appreciation of HCWs at block levels are some of the ways which act as protective measures against burnout.

At individual levels, practicing relaxation exercises and meditation reduces the risk of burnout. Meditation exercises camps and training should be incorporated in training schedule for HCWs. The study recommends Everyday 15min relaxation exercises must be practiced in health care centers to reduces the risk of burnout in HCWs working in it.

Spirituality also emerges as a protective measure against burnout. Previous studies had shown spiritual practices reduces the generation of burnout ^[27-29]. HCWs should be promoted to practice spiritual services and some of the spiritual practices can be followed in health care centers. This will create a positive environment which will further reduces the risk of development of burnout in HCWs.

The study is subject to few limitations firstly it had a small sample size so that our results can't be generalize to whole HCWs, secondly our study is expose to regional bias as performed only in one block of a Ajmer district in Rajasthan, thirdly self-recording bias

cannot be ruled out as questionnaire filling depends upon the mindset and interest of HCWs at that time filling of questionnaire form, lastly this was a cross-sectional study which might not allow definitive conclusions about the causal link between determinants and burnout.

Conclusion

The study concluded that high risk of burnout is prevalent in rural HCWs. Rural areas HCWs have similar burnout as in urban HCWs. Measures should be taken at authoritative and individual levels to provide better resources and environment to HCWs to reduce the risk of burnout in them. HCWs should perform some relaxation and spiritual practices as they act as protective shields against burnout.

References

1. Freudenberger HJ. Staff burnout. *J Soc. Issues.* 1974;30(1):159-165.
2. Maslach C. Burned-out. *Hum Behav.* 1976;9:16-22.
3. Maslach C, Jackson SE. The measurement of experienced burnout. *J Occup. Behav.* 1981;2(2):99-113.
4. Khasne RW, Dhakulkar BS, Mahajan HC, Kulkarni AP. Burnout among Healthcare Workers during COVID-19 Pandemic in India: Results of a Questionnaire-based Survey. *Indian J Crit. Care Med.* 2020;24(8):664-671.
5. Khamisa N, Oldenburg BF, Peltzer K, Ilic D. Work related stress, burnout, job satisfaction and general health of nurses. *Int. J Environ. Res. Public Health.* 2015;12:652-666.
6. Christian LA. A passion deficit: occupational burnout and the new librarian: a recommendation report. *Southeast. Libr.* 2015;62:2.
7. Salvagioni DAJ, Melanda FN, Mesas AE, González AD, Gabani FL, Andrade SM. Physical, psychological and occupational consequences of job burnout: a systematic review of prospective studies. *PLoS One.* 2017;12:e018-5781.
8. Lu W, Wang H, Lin Y, Li L. Psychological status of medical workforce during the COVID-19 pandemic: a cross-sectional study. *Psychiatry Res.* 2020;288:112-936.
9. Khan A, Teoh KR, Islam S, Hassard J. Psychosocial work characteristics, burnout, psychological morbidity symptoms and early retirement intentions: a cross-sectional study of NHS consultants in the UK. *BMJ Open.* 2018;8:e018-720.
10. Johnson J, Hall LH, Berzins K, Baker J, Melling K, Thompson C. Mental healthcare staff well-being and burnout: a narrative review of trends, causes, implications and recommendations for future interventions. *Int. J Ment. Health Nurs.* 2018;27:20-32.
11. Yang C, Chen ZL, Chen LY, Jiang JX. Burnout in healthcare: a sign of death by overwork for doctors in China. *BMJ.* 2019;366:155-82.
12. Kristensen TS, Borritz M, Villadsen E, Christensen KB. The Copenhagen burnout inventory: a new tool for the assessment of burnout. *Work Stress.* 2005;19(3):192-207.
13. Chor WPD, Ng WM, Cheng L, Situ W, Chong JW, Ng LYA, *et al.* Burnout amongst emergency healthcare workers during the COVID-19 pandemic: A multi-center study. *Am. J Emerg. Med.*, 2020, 3-5.
14. Roslan NS, Yusoff MSB, Asrenee AR, Morgan K. Burnout Prevalence and Its Associated Factors among Malaysian Healthcare Workers during COVID-19 Pandemic: An Embedded Mixed-Method Study. *Healthcare.* 2021;9:90.
15. Ferry AV, Wereski R, Strachan FE, Mills NL, Ferry A. Predictors of healthcare worker burnout during the COVID-19 pandemic. *medRxiv*, 2020.
16. Barello S, Palamenghi L, Graffigna G. Burnout and somatic symptoms among frontline healthcare professionals at the peak of the Italian COVID-19 pandemic. *Psychiatry Res.*

- 2020;290:113-129.
17. Luceño-Moreno L, Talavera-Velasco B, García-Albuerne Y, Martín-García J. Symptoms of Posttraumatic Stress, Anxiety, Depression, Levels of Resilience and Burnout in Spanish Health Personnel during the COVID-19 Pandemic. *Int. J Environ. Res. Public Health*. 2020;17:55-14.
 18. Wu Y, Wang J, Luo C, Hu S, Lin X, Anderson AE, *et al.* A Comparison of Burnout Frequency among Oncology Physicians and Nurses Working on the Frontline and Usual Wards during the COVID-19 Epidemic in Wuhan, China. *J Pain Symptom Manag.* 2020;60:e60-e65.
 19. Matsuo T, Kobayashi D, Taki F, Sakamoto F, Uehara Y, Mori N, *et al.* Prevalence of Health Care Worker Burnout During the Coronavirus Disease 2019 (COVID-19) Pandemic in Japan. *JAMA Net. Open.* 2020;3:1-4.
 20. Bianchi R. What is “severe burnout” and can its prevalence be assessed? *Intensive Care Med.* 2015;41(1):166.
 21. Kesarwani V, Husaain ZG, George J. Prevalence and factors associated with burnout among healthcare professionals in India: a systematic review and meta-analysis. *Indian J Psychol. Med.* 2020;42(2):108-115. Doi: 10.4103/IJPSYM.IJPSYM_387.
 22. Dubale BW, Friedman LE, Chemali Z, Denninger JW, Mehta DH, Alem A, *et al.* Systematic review of burnout among healthcare providers in sub-Saharan Africa. *BMC Public Health.* 2019;19(1):12-47.
 23. Ratnakaran B, Prabhakaran A, Karunakaran V. Prevalence of burnout and its correlates among residents in a tertiary medical center in Kerala, India: a cross-sectional study. *J Postgrad Med.* 2016;62(3):157-161.
 24. Dhusia AH, Dhaimade PA, Jain AA, Shemna SS, Dubey PN. Prevalence of occupational burnout among resident doctors working in public sector hospitals in Mumbai. *Indian J Community Med.* 2019;44(4):352-356.
 25. Elbay RY, Kurtulmuş A, Arpacıoğlu S, Karadere E. Depression, anxiety, stress levels of physicians and associated factors in Covid-19 pandemics. *Psychiatry Res.* 2020;290:1-5.
 26. Algunmeeyn A, El-Dahiyat F, Altakhineh MM, Azab M, Babar ZU. Understanding the factors influencing healthcare providers’ burnout during the outbreak of COVID-19 in Jordanian hospitals. *J Pharm. Policy Pract.* 2020;13:53.
 27. Doolittle BR, Windish DM, Seelig CB. Burnout, Coping and Spirituality among Internal Medicine Resident Physicians. *J Grad. Med. Educ.* 2013;5:257-261.
 28. Malik S, Riaz N, Nazir S. Personal Spirituality and Work Attitudes among Doctors. *J Behav. Sci.* 2015;25:136-14.
 29. Shechter A, Diaz F, Moise N, Anstey DE, Ye S, Agarwal S, *et al.* Psychological distress, coping behaviors and preferences for support among New York healthcare workers during the COVID-19 pandemic. *Gen. Hosp. Psychiatry.* 2020;66:1-8.