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ASSESSMENT & PREDICTION OF BURNOUT SYNDROME AMONG THE EMERGENCY CARE PROFESSIONALS WORKING IN EMERGENCY DEPARTMENTS (ABS-ED) OF MAJOR HOSPITALS, A MULTI-CENTER STUDY.

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ABSTRACT

Burnout syndrome is a psychological condition resulting from chronic occupational stress, particularly prevalent in professions requiring extensive human interaction, such as healthcare. It encompasses emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment. A descriptive cross-sectional study was conducted from March 2024 to June 2024 among 146 emergency medicine professionals using a pre-tested self-administered online questionnaire, including the Maslach Burnout Inventory. Simple random sampling was employed using a list of EMP of the considered hospitals as a sampling frame, and data were analyzed using descriptive statistics and chi-square tests & binary logistic regression with SPSS 23.0. Response rate was 82.9% (n=120). The prevalence of high overall burnout was 43.3% (95% CI-34.32%-52.69%), with 20.8% (95% CI: 13.96%-29.20%) reporting high emotional exhaustion, 37.5% (95% CI: 28.83%-46.80%) high depersonalization, and 3.3% (95% CI: 1.0%-8.31%) high personal inefficacy. Significant associations were found between high burnout levels and factors such as anxiety (OR=5.02, 95% CI-1.81-13.90, p=0.001) and poor coping strategies (OR=4.23, 95% CI-1.15-15.6, p=0.02). No significant associations were found with socio-demographic characteristics or organizational factors. The study found a high prevalence of burnout among emergency medicine professionals, with significant levels of emotional exhaustion and

depersonalization. Burnout was significantly associated with anxiety and poor coping strategies, while no associations were observed with socio-demographic or organizational factors. Interventions should focus on addressing anxiety and enhancing coping strategies among emergency medicine professionals to reduce burnout. Future efforts should prioritize individual-level psychological support.

Keywords: Burnout, professionals, depersonalization

INTRODUCTION

Burnout is a psychological condition that arises in response to chronic interpersonal stressors in the occupation. It's most experienced in professions that involve deep interaction with people, such as healthcare, education, and customer service. The concept of burnout has been studied and defined extensively by psychologists. The key components of burnout are emotional exhaustion, depersonalization, and reduced personal accomplishment or efficacy. Emotional exhaustion means someone's feeling of being emotionally drained and depleted of emotional resources. Most of the time, individuals facing this feeling have nothing left to give at a psychological level due to chronic job-related stress. Depersonalization involves a negative or markedly disconnected response to various aspects of the occupation. As an example, this might manifest as a caregiver feeling frozen or indifferent to the suffering of a patient under his or her care. Reduced personal accomplishment or efficacy includes having the feeling that they are no longer making a meaningful or effective contribution to their work. This is categorized by a reduction in someone's feeling of capability and achievement in someone's work with people (1, 2).

The terms "burnout" and "burnout syndrome" are often used interchangeably in the literature, but there can be subtle differences in their meanings. "Burnout" is a broader term that refers to a state of exhaustion due to stress, and "burnout syndrome" refers more specifically to the psychological condition characterized by distinct dimensions, which include emotional exhaustion, depersonalization, and reduced personal accomplishment. Therefore, a study of burnout syndrome would be scientifically more accurate and more meaningful (3).

Burnout is a complex condition caused by a variety of factors. These factors can be broadly categorized into individual, organizational, and job-related factors (4). Exploration of these factors is important, and identification of modifiable factors will play a pivotal role in the development of strategies to prevent burnout among people. Individual factors such as age, sex, level of education, suffering of psychological conditions such as depression & anxiety, personality traits, stressors of personal life, and coping strategies; organizational factors such as work-life balance, management style, work culture and climate, recognition and

rewards; and employment-related factors such as workload, control over the work process, clarity of the job role and requirements, interaction with the clients, and last but not least, societal factors such as changing of work dynamics and economic pressures can be considered as the factors associated with being burnout or in other words, having burnout syndrome (5-7).

METHODS

This was a descriptive cross-sectional study with an analytical component done in selected Teaching Hospitals; Sri Lanka. Emergency medicine professionals working in above mentioned Emergency Departments were considered as study population. Those who have not worked at an emergency department for the last three months and those who are discharged from their routine duties assigned to emergency medicine due to any reason e.g. complicated pregnancy, medical reasons were excluded from the study. A pre-tested online self-administered questionnaire was used which consists of a socio-demographic section, basic information section and Maslach Burnout Inventory (MBI). The questionnaire was prepared in a manner to capture majority of associated factors of burnout syndrome. None probability convenient sampling technique was applied to recruit study participants.

RESULTS

The response rate was 82.9% (n-120). The summary statistics of the age of the study participants are as follows: Mean-37.7 years (SD=4.5 years), Median-37.00 years (IQR-6.75 years), Mode- 34.0 years (Range-30 years to 52 years). The summary statistics of the rough monthly income of the study participants are as follows: Mean-Rs.472108 (SD=Rs.559,170.00), Median-Rs.300,000.00 (IQR-Rs.250,000.00 to Rs.500,000.00), Mode-Rs.200,000.00 (Range-Rs.200,000 to Rs.3,000,000.00).

The summary statistics of the number of years worked in the field of emergency medicine are as follows: Mean-5.3 years (SD=3.3 years), Median-5.0 years (IQR-3.0 years to 8.0 years), Mode- 5.0 years (Range-0 years to 14 years). The summary statistics of the number of years worked in the current station are as follows: Mean-1.64 years (SD=1.75 years), Median-1.0 years (IQR-1.0 years to 2.0 years), Mode- 1.0 years (Range-0 years to 11 years).

Table 1: Selected general characteristics of the study sample

Characteristic	Frequency(n)	Percentage(%)
Sex		
Female	54	45.0
Male	66	55.0
Marial status		
Married/ living in union	104	86.7
Single	16	13.3
Status of having physical illness		
Yes	06	5.0
No	114	95.0
Types of physical illnesses		
Diabetes	02	1.7
Hypertension	06	5.0
Status of psychological illness		
Yes	02	1.7
No	118	98.3
Type of psychological diseases		
Depression	02	1.7
Personality disorder	01	0.8

Figure1 :The frequency distribution of the burnout subcomponents

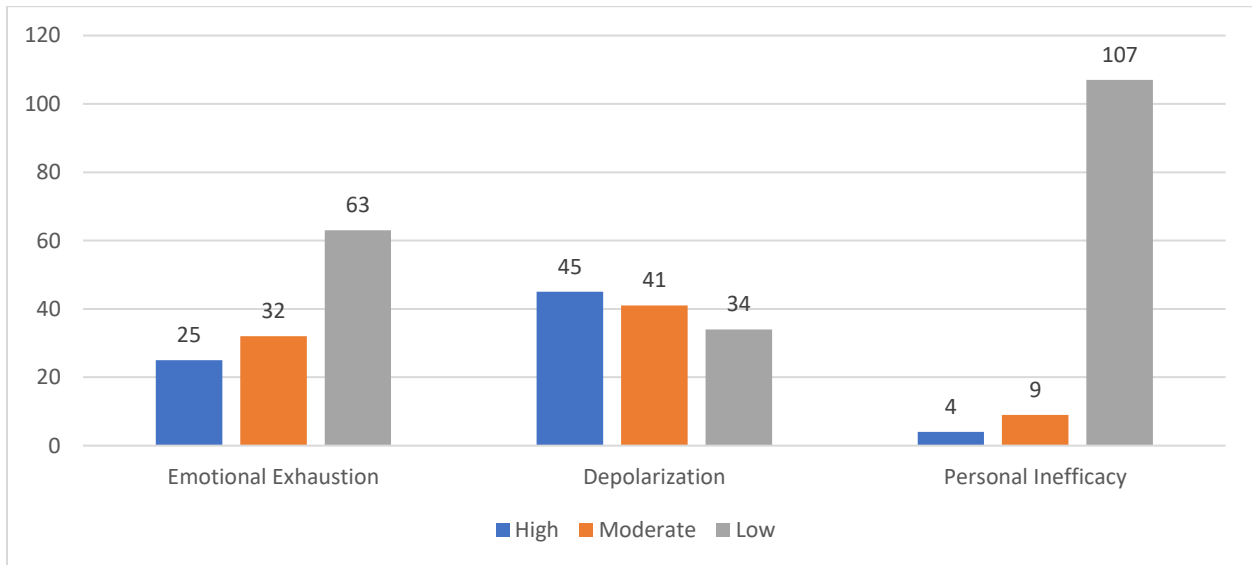


Table 2: Selected Individual characteristics of the study sample

Characteristic	Number(n)	Percentage(%)
Personal Life Stressors		
High	25	20.8
Low	95	79.2
Coping Strategies		
High	17	14.2
Low	103	85.8
Negative Work Environment		
High	34	28.3
Low	86	71.7
Restrictive Management Practices		
High	47	39.2
Low	73	60.8
Poor Work-Life Balance		
High	24	20.0
Low	96	80.0
Lack of Recognition and Reward		
High	27	22.5
Low	93	77.5
Workload		
High	06	5.0
Low	114	95.0
Lack of Autonomy		
High	07	5.8
Low	113	94.2
Depression		
Moderate	07	5.8
Mild	07	5.8
Normal	106	88.3
Stress		
Moderate	01	0.8
Mild	02	1.7
Normal	117	97.5
Anxiety		
Severe	02	1.7
Moderate	15	12.5
Mild	06	5.0
Normal	97	80.8

When each subcomponent was categorized as high versus low to moderate, the high groups comprised 20.8% (95% CI: 13.96%-29.20%) for Emotional Exhaustion, 37.5% (95% CI: 28.83%-46.80%) for Depersonalization, and 3.3% (95% CI: 1.0%-8.31%) for Personal Inefficacy. Out of the study participants, 43.3% (95% CI-34.32%-52.69%) had high overall burn out. Study participants were categorized into two groups: those with burnout and those without burnout. This classification was based on the following criteria: participants were considered to have high overall burnout if they scored high on Emotional Exhaustion and/or Depersonalization, or low on Personal Accomplishment. Therefore, out of the study participants, 43.3% (95% CI-34.32%-52.69%) had high overall burn out.

Table 3: Association with socio-demographic characteristic

Characteristic	Having high level of burnout		Not having high level of burnout		χ^2	p
Age (df=1)						
30-40 years	41	45.6	49	54.4	0.72	0.39
>41 years	11	36.7	19	63.3		
Sex (df=1)						
Female	23	42.6	31	57.4	0.02	0.88
Male	29	43.9	37	56.1		
Ethnicity (df=1)						
Sinhala	44	42.7	59	57.3	0.11	0.73
Non-Sinhala	08	47.1	09	52.9		
Religion (df=1)						
Buddhist	38	40.4	56	59.6	1.49	0.22
Non-Buddhist	14	53.8	12	46.2		
Income (df=1)						
≤Rs. 300,000.00	28	45.2	34	54.8	0.17	0.67
> Rs.300,000.00	24	41.4	34	58.6		
Residing outside the district of working (df=1)						
Yes	27	44.3	34	55.7	0.04	0.84
No	25	42.4	34	57.6		
Board certified consultant (df=1)						
No	40	41.2	57	58.8	0.9	0.34
Yes	12	52.2	11	47.8		
Work experience in the field of emergency medicine (df=1)						
0-5 years	29	39.2	45	60.8	1.35	0.24
> 5 years	23	50.0	23	50.0		

There was a statistically significant association between having anxiety and status of having high level of burnout and also, status of coping strategy and status of having high level of burnout at $p=0.05$ level. The associations between selected personal and societal factors with high level of burnout are as follows.

Table 4 : Association between selected personal and societal factors with high level of burnout:

Characteristic	High level of burnout		χ^2	p
	Yes	No		
Personality category (df=1)				
Imaginative and sensitive	08	09	0.11	0.74
Agreeable and diligent	44	59		
Having depression(df=1)				
Yes	09	05	2.83	0.092
No	43	63		
Having stress(df=1)				
Yes	02	01	4.32	0.58
No	50	67		
Having anxiety(df=1)				
Yes	17	06	10.84	<0.001
No	35	62		
Coping strategy(df=1)				
Poor	49	54	5.32	0.02
Good	03	14		
Changing of work dynamics(df=1)				
Good	00	1	0.77	0.38
Poor	52	67		
Economic pressure(df=1)				
Good	11	12	0.24	0.63
Poor	41	56		

There were no statistically significant association between the selected organizational and employment related factors with the status of having high level of burnout among the study participants.

Table 5 : Association between organizational and employment related factors with having high level of burnout

	High level of burnout		χ^2	p
	Yes	No		
Work life balance(df=1)				
Good	09	15	0.42	0.52
Poor	43	53		
Management style(df=1)				
Good	19	28	0.27	0.61
Poor	33	40		
Recognition and rewards(df=1)				
Good	08	19	2.66	0.1
Poor	44	49		
Workload(df=1)				
High	03	03	0.11	0.74
Low	49	65		
Control over work(df=1)				
Good	04	03	0.28	0.46
Poor	48	65		

DISCUSSION

Out of study participants, 20.8% and 37.5% of the participants were having Emotional exhaustion and depersonalization, respectively. Personal inefficacy was only 3.3%. Notably, the high level of burnout was associated with having a high-level anxiety and having poor coping strategies. The study was conducted as descriptive cross-sectional study with an analytical component on emergency medicine professionals in multiple tertiary care centers in Sri Lanka. This was beneficial in obtaining a snapshot of the prevalence of burnout and its associated factors at a point in time which provide a valuable input for immediate interventions. The issue with this study design is the inability to infer causal relationships between the burnout and the identified factors.

The study applied a pre-tested online self-administered questionnaire, which included the Maslach Burnout Inventory (MBI). Especially given the busy schedules of emergency medicine professionals, the use of an online survey enabled extensive reach and convenience for respondents. Nevertheless, this was subjected to certain biases that includes non-response bias and variability in digital literacy among participants.

The sample size was calculated to be 146, respecting a non-response rate of 10%. However, the final response rate was 82.9% (n=120), which is relatively good for online surveys but still leaves room for non-response bias. A small sample size can restrain the generalizability of the findings and the vigor of statistical analyses, particularly multivariable analyses, which require larger sample sizes to identify complex interactions between variables. The use of simple random sampling enhanced the representativeness of the sample within the defined study population, reducing selection bias. However, the relatively small sample size, coupled with the inability to perform multivariable analyses due to inadequate data, underscores the need for larger studies to confirm these findings and explore additional factors.

The data collection process involved obtaining informed consent electronically and distributing the survey via email or online platforms. This method potentially increased response rates since the participants could respond at their convenience. However, self-reported data were collected, the participants might underreport or overreport their experiences which may lead to biases such as social desirability bias. The analysis was conducted using SPSS 23.0, with data presented using descriptive statistics and associations determined through bivariate analysis with chi square test with odds ratios with their 95% confidence intervals. Even though this approach is sufficient for detecting relationships between burnout and its associated factors, the failure to conduct multivariable analysis due to the small sample size limits the depth of the analysis.

There are several strengths and weaknesses of this method. The cross-sectional design specifies a clear snapshot of burnout prevalence and associated factors. The use of the Maslach Burnout Inventory (MBI) made sure the validity and the reliability of the assessment of burnout. The response rate reflects broad and convenient contribution from busy professionals for the online survey method. However, the size of the sample limits the extrapolate the findings and the ability to perform more complex statistical analyses. Finally, need for longitudinal studies is reflected by the cross-sectional design's inability to establish causal relationship between burnout and identified factors.

The prevalence of high level of burnout among emergency medicine professionals in this study aligns with regional and global findings. Studies conducted in the Asian countries as well as in United States and Europe have revealed similar burnout levels among emergency department staff, emphasizing the universal nature of this issue across different healthcare systems and cultural contexts (9, 26). In Sri Lanka, the prevalence of burnout among emergency department staff in Colombo was comparable with this study (11). A 20.8% and 37.5% of the participants were affected in the areas of Emotional exhaustion and depersonalization respectively in this study. These findings are consistent with the local,

regional and global literature (5). The chronic fatigue experienced by professionals due to prolonged exposure to stressful work environments is shown by Emotional exhaustion, and cynical or detached attitude towards patients and colleagues is shown by depersonalization. The high levels of these subscales among study participants advocate needs for interventions targeting at reduction of workload and improving work conditions to ease emotional strain. By having only 3.3% of the participants with personal inefficacy, indicating that most still felt a sense of accomplishment in their jobs despite experiencing high levels of depersonalization and emotional exhaustion.

This finding may suggest that they are resilient and capable of maintaining their sense of efficacy even under significant stress. But it also underlines the importance of reinforcing this sense of personal accomplishment through reward and recognition systems to prevent burnout from worsening. The significant association between the high level of anxiety and high level of burnout elicited in this study tallies with the findings from previous research. High level of anxiety has been consistently linked to higher burnout levels among healthcare workers, likely due to the high-stress nature of their work environment and culture (11). Likewise, ineffective coping strategies were significantly associated with higher burnout levels, indicating the importance of arming healthcare professionals with effective stress management techniques to address burnout (20).

Even though this study did not find significant associations between organizational factors that include work culture and management style and burnout, other research indicates that these factors are serious factors of burnout. Positive work environments with helpful management practices have been shown to reduce burnout, indicating the need for organizational interventions to create a more supportive and collaborative work environment (24). These associations have not been elicited due to sample size limitations or the specific context of healthcare settings in Sri Lanka. Immediate attention from healthcare administrators and policymakers need to be drawn for the presence of high prevalence of burnout among emergency medicine professionals. Reducing workload, improving work-life balance, and providing mental health support need to be considered when interventions are being designed. High stress demands of work needs to be addressed by arranging training programs focusing on effective coping strategies and stress management. Furthermore, organizational changes such as recognizing and rewarding staff contributions, encouraging a positive work culture and ensuring adequate staffing levels can substantially ease burnout. Implementing policies that promote clear role definitions and job autonomy can also help to improve job satisfaction and reduce stress among the study participants (26, 27).

CONCLUSIONS

Mental health support programs focusing on anxiety and coping strategies should be implemented. Access to professional counseling and regular mental health check-ups can help alleviate burnout levels. Furthermore, training sessions and workshops aimed at improving coping mechanisms should be conducted. These should include stress management techniques, resilience building, and mindfulness practices. Although no significant association was found with organizational factors, improving work environment conditions such as providing adequate resources, nurturing a supportive work culture, and ensuring fair recognition and rewards may indirectly reduce burnout. Policy development is also crucial. Policies to ensure better work-life balance and manage workload effectively should be developed. Flexible working hours and sufficient rest periods should be considered. Further research is recommended to explore the complex interplay of various factors contributing to burnout. Conducting larger-scale studies with increased sample sizes could provide deeper insights through multivariable analysis. Regular assessments of burnout levels among emergency medicine professionals should be implemented to identify trends and intervene promptly. By addressing the personal and organizational factors contributing to burnout, healthcare institutions can enhance the well-being of emergency medicine professionals, leading to better patient care and improved overall healthcare outcomes.

REFERENCES

1. Weber A, Jaekel-Reinhard A. Burnout syndrome: a disease of modern societies? *Occup Med (Lond)*. 2000;50(7):512-7.
2. Brill PL. The need for an operational definition of burnout. *Fam Community Health*. 1984;6(4):12-24.
3. Maslach C, Jackson SE, Leiter MP. *Maslach Burnout Inventory*. 3rd ed. Palo Alto, CA: Consulting Psychologists Press; 1996.
4. Shirom A, Toker S, Berliner S, Shapira I, Melamed S. The effects of physical fitness and feeling vigorous on self-rated health. *Health Psychol*. 2005;24(6):493-501.
5. Maslach C, Leiter MP. Early predictors of job burnout and engagement. *J Appl Psychol*. 2000;85(2):268-78.
6. Bährer-Köhler S. *Burnout for experts: prevention in the context of living and working*. Springer Science & Business Media; 2013.

7. Leiter MP. Burnout as a developmental process: Consideration of models. In: Schaufeli WB, Maslach C, Marek T, editors. Professional Burnout: Recent Developments in Theory and Research. Washington, DC: Taylor & Francis; 1992. p. 237-50.
8. Bridgeman PJ, Bridgeman MB, Barone J. Burnout syndrome among healthcare professionals. *Am J Health Syst Pharm*. 2018;75(3):147-52.
9. Rotenstein LS, Torre M, Ramos MA, Rosales RC, Guille C, Sen S, et al. Prevalence of burnout among physicians: a systematic review. *JAMA*. 2023;320(11):1131-50.
10. Healthforce Center at UCSF. 2022 National Health Care Retention & RN Staffing Report. [Internet]. 2022 [cited 2023 May 21]. Available from: <https://www.healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/2022%20National%20Health%20Care%20Retention%20%26%20RN%20Staffing%20Report.pdf>
11. Fernando C, Samaranayake S. Prevalence of burnout among postgraduate doctors in Sri Lanka: A descriptive cross-sectional study. *BMC*
12. Nwosu E, Collins L, McGeown D, Clark B. Burnout and resilience in emergency department healthcare professionals: A systematic review. *Eur J Emerg Med*. 2021;28(4):234-41.
13. Maslach C, Jackson SE, Leiter MP. Maslach Burnout Inventory Manual. 4th ed. Menlo Park, CA: Mind Garden, Inc; 2018.
14. 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.
15. Demerouti E, Bakker AB, Nachreiner F, Schaufeli WB. The job demands-resources model of burnout. *J Appl Psychol*. 2001;86(3):499-512.
16. Pines AM, Aronson E. Career Burnout: Causes and Cures. New York: Free Press; 1988.
17. Li J, Yang W, Cho SI. Gender differences in job strain, effort-reward imbalance, and health functioning among Chinese physicians. *Soc Sci Med*. 2006;62(5):1066-77.
18. Lin Q, Jin Z, Zhang Y, Wu X, Wang C, Xu Y. Reliability and validity of the Maslach Burnout Inventory for healthcare professionals in China. *J Occup Health*. 2022;64(1)
19. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. *Acad Med*. 2006;81(4):354-73.
20. Lee RT, Ashforth BE. A meta-analytic examination of the correlates of the three dimensions of job burnout. *J Appl Psychol*. 1996;81(2):123-33.
21. Swider BW, Zimmerman RD. Born to burnout: A meta-analytic path model of personality, job burnout, and work outcomes. *J Vocat Behav*. 2010;76(3):487-506.
22. Folkman S, Moskowitz JT. Coping: Pitfalls and promise. *Annu Rev Psychol*. 2004;55:745-74.

23. Carver CS, Scheier MF, Weintraub JK. Assessing coping strategies: A theoretically based approach. *J Pers Soc Psychol.* 1989;56(2):267-83.
24. Hofmann DA, Morgeson FP. Safety-related behavior as a social exchange: The role of perceived organizational support and leader-member exchange. *J Appl Psychol.* 1999;84(2):286-96.
25. Golembiewski RT, Munzenrider RF. *Phases of Burnout: Developments in Concepts and Applications.* New York: Praeger; 1988.
26. Aiken LH, Clarke SP, Sloane DM, Sochalski J, Silber JH. Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *JAMA.* 2002;288(16):1987-93.
27. Leiter MP, Maslach C. Nurse turnover: The mediating role of burnout. *J Nurs Manag.* 2009;17(3):331-9.
28. Lwanga SK, Lemeshow S. *Sample size determination in health studies: a practical manual.* World Health Organization; 1991.
29. Israel GD. *Determining sample size.* 1992