Original Article

Assessing burnout among health care professionals in a tertiary hospital in Kohalpur, Nepal: a cross-sectional study

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ABSTRACT

Background: Burnout is a commonly observed psychological phenomenon that occurs due to prolonged stressors at work, which poses a risk to the health of the working population. Low patient care and safety are due to burnout in healthcare professionals, which could hamper their personal lives and quality. This study aims to find the prevalence of burnout and compare the three components of risk of burnout: emotional exhaustion, depersonalization and personal achievement.

Methods: A cross-sectional study was conducted in a tertiary care hospital in Kohalpur, taking 196 healthcare professionals comprising of doctors and nurses, who met the inclusion criteria. Strata were developed based on the profession (doctors and nurses) and then using the probability sampling technique data was collected via Google Forms using the Maslach Burnout Inventory questionnaire.

Results: This study depicted burnout in 9.7% of the participants (doctors 10.6% and 9.6% nurses), 5.23% higher in the surgery department and younger age group (10.6%). For the establishment of burnout there need to be high levels of emotional exhaustion (14.8%) and/or depersonalization (22.4%) and/or low levels of personal achievement (12.20%). A statistically significant association was found between emotional weariness in females, higher average working hours (> 8 hours), and a particular profession (nurses versus doctors). Personal success was statistically associated with age and years of work experience, while depersonalization was statistically significantly correlated with profession. The average number of hours worked per day was strongly associated with both emotional tiredness and personal achievement.

Conclusion: The prevalence of burnout using the Maslach Burnout Inventory showed low risk of burnout, defined by, low levels of emotional exhaustion and depersonalization and high levels of personal achievement in the healthcare professionals working in a tertiary care hospital. The main sources of burnout included increased average working hours (>8 hours), decreased work experience (1- 5 years) and decreased age (20-30 years).

Keywords: achievement, burnout, depersonalization, exhaustion, Nepal, prevalence, professional

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INTRODUCTION

The term burnout was first discovered in 1974 by Freudenberger who defined burnout as "exhaustion resulting from excess demands of energy, strength or resources" in the place of work, associated with fatigue, malaise, frustration, lack of efficacy and cynicism", he observed that burnout often occurred in relation to requiring excessive amount of empathy and personal involvement [1]. Later, Maslach and Jackson described burnout as a chronic response to interpersonal and prolonged emotional stress at work, with three key dimensions of emotional exhaustion (wearing out, loss of energy, depletion, debilitation, and fatigue by contact with other

people), depersonalization (negative/cynical attitudes towards clients, irritability, loss of idealism, and withdrawal) and reduced personal accomplishment (reduced productivity or capability, low morale, and an inability to cope) [2-4].

Burnout is a psychological syndrome resulting from a chronic response to prolonged stressors at work [5], which is commonly seen among healthcare professionals [6] who represent 12% of the workforce globally [7]. In the past few years Burnout has been viewed as an "epidemic" occupation, including medical doctors and other healthcare professionals [8].

Healthcare workers have a high demanding job, in addition to, working in one of the most hazardous occupational settings, putting enormous pressure on them, thus making them more prone to burnout [9].

The risk factors of burnout include workload, control, reward, community, fairness and values [5]. In addition to poor management, insufficient resources, conflict in workplace and lack of team spirit [10]. Burnout and low engagement in healthcare setting may negatively affect care of patient, undermine the workforce, and rise turnover, as well as, expose the burnout professional to further occupational hazards [11]. Hence, it is imperative to evaluate risk factors for burnout to order to implement preventive measures at the earliest.

Burnout is a neglected health issue in Nepal. The limited studies that have been conducted on occupational health and safety, in which unsatisfactory work conditions have been observed. There is a need for strong intervention, with emphasis on issues related to burnout among healthcare professionals. Attention is mostly directed mainly at the health and safety of the healthcare professionals arising due to various hazards related to work-related activities [12]. This research can provide valuable insights to improve the well-being of healthcare professionals in Nepal and eventually enhance patient care.

METHODOLOGY

This hospital-based descriptive cross-sectional study was conducted in May 2023 among healthcare workers working in a tertiary hospital in Kohalpur, Nepal. Sample size was calculated using the Cochrane's prevalence formula [$n = Z^2P(1-p)/d^2$] taking Z = 1.96 at 95% confidence level, prevalence of burnout = 9.90% = 0.099 (Burnout among Healthcare Professionals) [13], tolerant margin of error 4%.

Adding the non-response rate to be 10% the required sample size will be 237**.** The sample was then divided into two strata based on the profession of doctors and nurses by using their respective proportions in the population (28% doctors and 72% nurses). Therefore, sample of doctors is 28% of 237 = 66.3 = 66 and sample of nurses is 72% of 237 = 170.64 = 171**.** Those doctors with registered medical license numbers and nurses working in the tertiary hospital were included and those who did not consent were excluded.

Data was collected online via Google form. Pretesting of the questionnaire was done on 24 interns randomly selected to assess the reliability (Cronbach's alpha = 0.86). The emails and phone numbers were obtained and a questionnaire survey distributed to the eligible participants. All the participants were contacted through email, viber group, WhatsApp group and invited to fill in the information. Two consecutives follow up reminders were sent to the non-responders at the interval of 5 days. Informed consent was taken online before filling out the questionnaire.

The data was collected using a self-administered questionnaire consisting of two parts, the first part included questions to get information about the socio-demographic (age, gender, religion, marital status, ethnicity, marital status, profession, work experience, average working hours, department) and the second part consists of the Maslach Burnout inventory [2] for assessing burnout. The Maslach Burnout inventory consists of 3 subscales [2]. A total of 22 items from the MBI-HSS scale were used: the emotional exhaustion (EE) component included nine items with a score range of 0–54 (a score of <16 was considered low burnout, 17–26 reflected moderate burnout, and>27 reflected high burnout). Depersonalization (DP) component included five items with a score range of 0–30 points (<6 reflected low burnout, 7-12 reflected moderate burnout, and>13 indicated high burnout). The personal accomplishment (PA) component included eight items with a score range of 0–48 points (>39 reflected low burnout, 32–38 indicated moderate burnout, and<31 reflected high burnout). All items were scored on a seven-point scale, ranging from 0 (never) to 6 (every day). The total score of each dimension was classified as low, moderate, or high. In terms of emotional exhaustion and depersonalization, persons with high

scores were defined as having burnout; the higher the score, the stronger degree of burnout [14, 15]. A high degree of burnout is seen in high scores on EE and DP subscales, and low scores on PA subscale, an average degree is seen in average scores on the three subscales and a low degree is reflected in low scores on EE and DP subscales and high scores on PA subscale [16].

The study was conducted after receiving the ethical approval from the Institutional Review Committee of Nepalgunj Medical College Teaching Hospital (reference number: 74/079-080) on 8th June, 2023.

The data entry was done using excel and analysis in SPSS 25. Descriptive analysis was performed for all demographic information. Means and standard deviations (SD) were calculated for continuous variables, whereas counts and percentages were produced for categorical variables. Analysis of variance (ANOVA), and independent t-test was done for comparison of score means and comparison of the MBI-HSS scores using different variables (age, gender, occupation, marital status, years of practice, working hours per day, and education level) to determine whether there were any significant differences. The chi-square test and Fisher's exact test were applied to investigate associations between independent variables (age, gender, ethnicity, working hours, work experience etc.) and the presence of burnout and in the MBI-HSS dimensions. All statistical tests were two-sided and considered statistically significant at $p<0.05$.

RESULTS

A total of 237 questionnaires were distributed, and 196 responded (82.7% response rate). The participants were mostly of the female gender (77%) as compared with males (23%). The majority of the participants were Hindu (97.4%), between the age group of 20-30 years (62.2%), married (55.6%) and of Chettri ethnicity (36.2%), Most of the participants were nurses (66.2%). The departments of work were divided into medicine and surgery (44.9%, 55.1%). Maximum participants worked for an average of more than eight hours per day (52.6%) and with work experience of 1-5 years (51%). The distribution of the participant's demographic information is shown below: **[Table 1]**

Table 1: Distribution of the participant's demographic information

Variables	Frequency	Percentage
Age (years)		
20-30	122	62.2
31-40	52	26.5
> 41	22	11.2
Gender		
Male	45	23
Female	151	77
Religion		
Hinduism	191	97.4
Buddhism	5	2.6
Ethnicity		
Brahmin	59	30.1
Chettri	71	36.2
Janjati	43	21.9
Madeshi	23	11.7
Marital status		
Married	109	55.6
Unmarried	87	44.4
Profession		
Doctor	66	33.7
Nurse	130	66.3
Department		
Medicine	88	44.9
Surgery	108	55.1
Work experience (years)		
1-5	100	51
6-10	59	30.1
11-15	13	6.6
16-20	10	5.1
> 21	14	7.1
Average working hours per day		
<8 hours	93	47.4
>8 hours	103	52.6

The estimated prevalence and level of burnout:

[Figure 1] shows that 19 participants (9.7%) showed burnout based on the Maslach Burnout Inventory (burnout was defined by high level of emotional exhaustion and depersonalization and or low personal achievement) [17]. 90% of the participants showed no burnout.

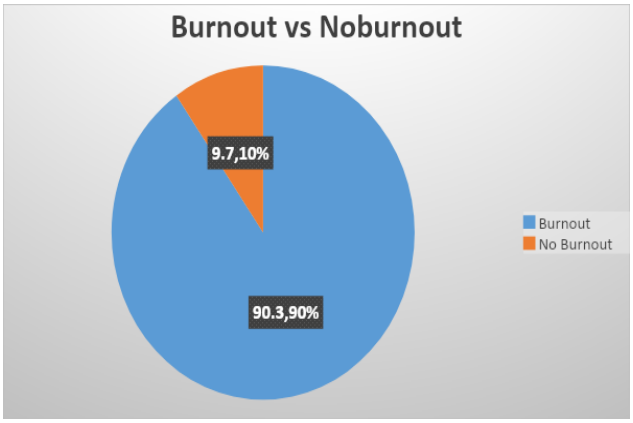

Figure 1: Prevalence of Burnout Vs No Burnout

The prevalence of burnout among males was 15.5% and females (7.9%). Burnout in the younger age group (10.6%) compared to the older age group (9%) was slightly higher. Burnout amongst doctors (10.6%) was slightly higher than nurses (9.2%) and 5.23% higher in the surgery department and amongst those with higher average working hours. Burnout seems to be higher in unmarried professionals (19.5%) compared to married (11%) and with lesser work experience (14%). There appears to be no statistically significant association between total burnout amongst health professionals and demographic characteristics. **[Table 2]**

Among the 3 dimensions of burnout Emotional exhaustion is high in 14.8% of the health professionals, depersonalization in 13.8% and low personal achievement in 12.2%. (Figure 2). 25% of the participants scored "high" on only one dimension of Maslach Burnout Inventory (MBI), 9.18% scored "high" on any two of the dimensions of MBI, and 0.5% scored "high" on all the dimensions of burnout. Therefore, 9.69% of participants met criteria for burnout (a "high" score on at least 2 of the three dimensions of MBI) [14]. **[Figure 2]** Overall, there was high levels of low emotional exhaustion and depersonalization at 58.2% with a score of 16.26 ± 10.53 and at 69.40% with a score of 5.80 ± 5.49 respectively. High levels of personal achievement levels were 68.9% with a score of 38.87 ± 7.24, as seen in Figure 2.

ANOVA test and independent t tests revealed that there is a significant difference in personal achievement of religion and years of work experience with a statistically significant association seen in personal achievement with age and years of work experience (p value <0.01). In the category of emotional exhaustion there is a significant difference seen in emotional exhaustion and working hours with an association seen with the number of working hours (p value <0.01), gender (p value =0.03) and profession (p value = 0.04). Depersonalization is statistically significantly associated with profession (p value =0.02). **[Table 3]**

Table 3 shows a statistically significant association between gender (p value = 0.03), profession (p value = 0.04), and working hours (p value <0.01) with emotional exhaustion and between marital status and personal achievement. There is a statistically significant association between profession and depersonalization (p value <0.01) and between years of age and years of work experience (p value <0.01) with personal achievement.

DISCUSSION

Burnout in health caregivers could affect the quality of health care services [18]. The primary goal of this study was to know the prevalence of burnout among health care professionals which was (9.7%) in our study with the majority of emotional exhaustion and depersonalization component being low, and personal achievement component was moderate. However, burnout levels were 89.5% and between 27.6% - 72.4%) in other studies conducted in Nepal [14, 19]. This corroborated the variations of burnout amongst health care workers in this country. However, Wang et al. also showed the prevalence of burnout to be 65.6% which is more than four times the prevalence of our study [20]. Whereas, a study in Ghana depicted burnout at 9.90% [13] which is similar to our study.

In this study burnout was seen mostly in doctors, younger age group and lesser work experience which was similar to the study conducted by Wang J et. al. [17] In addition, the subscale for MBI was High Emotional Exhaustion (14.8%) Depersonalization (22.4%), Low Personal Achievement (12.8-%) which had similar results compared to another study by Shahi et. al. high emotional exhaustion (16.7%), high depersonalization in (15.9%) and low personal achievement (9.8) [21]. The subscales were associated with age, gender, years of work experience, number of working hours and profession, which is similar to the study conducted by Wang et al. [17].

Table 2: Univariate analysis of Burnout Vs No Burnout in demographic characteristics					
Variables	Total n(%)	Burnout n(%)†	No Burnout n(%)	χ2	P value
Gender				0.15 (χ*)	0.20
Male	45(23)	7(3.6)	38(19.4)		
Female	151(77)	12(6.1)	139(70.9)		
Age				0.93(χ*)	0.83
20-30 yrs	122(62.2)	13(6.6)	109(55.6)		
31-40 yrs	52(26.5)	4(2)	48(24.5)		
>41yrs	22(11.2)	2(1)	20(10.2)		
Religion				0.40 (χ*)	0.43
Hindu	191(97.4)	18(9.2)	173(88.3)		
Buddhist	5(2.6)	1(0.5)	4(2)		
Ethnicity				0.69(χ*)	0.62
Brahmin	59(30.1)	6(3.1)	53(27)		
Chettri	71(36.2)	8(4.1)	63(32.1)		
Janjati	43(21.9)	2(1)	41(20.9)		
Madeshi	23(11.7)	3(1.5)	20(10.2)		
Marital status				0.48	0.62
Married	109(55.6)	12(6.1)	97(49.5)		
Unmarried	87(44.4)	17(3.6)	80(40.8)		
Average working hrs				0.14	0.14
<8 hrs	93(47.4)	6(3.1)	87(44.4)		
>8 hrs	103(52.6)	13(6.6)	90(45.9)		
Years of work experience				0.29(χ*)	0.28
1-5 yrs	100(5.1)	14(7.1)	86(43.9)		
6-10 yrs	59(30.1)	3(1.5)	56(28.6)		
11-15 yrs	13(6.6)	0	13(6.6)		
16-20yrs	10(5.1)	1(0.5)	9(4.6)		
>21 yrs	14(7.1)	1(0.5)	13(6.6)		
Profession				0.75	0.76
Doctor	66(33.7)	7(3.6)	59(30.1)		
Nurse	130(66.3)	12(6.1)	118(60.2)		
Department				0.21	0.21
Medicine	88(44.9)	6(3.1)	82(41.8)		
Surgery	108(55.1)	13(6.6)	95(48.5)		

MBI-HSS Maslach Burnout Inventory-Human Services Survey, n number, y year, h hour, χ^2 Chi-square test

†High score on emotional exhaustion and/or depersonalization and/or personal achievement subscale of the MBI-HSS

*$p<0.05$

Table 3: Univariate analysis of MBI- subscale score in relation to demographic characteristics						
Variables	MBI subscale score					
	Emotional Exhaustion		Depersonalization		Personal Achievement	
	Mean ± SD	P value	Mean ± SD	P value	Mean ± SD	P value
Gender		0.12		0.48		0.39
Male	1.98±1.01		2.33±0.95		1.13±0.50	
Female	2.11±0.99		2.11±0.99		1.26±0.68	
Age		0.24		0.24		0.16
20-30 yrs	2.02±1.00		2.02±1.00		1.28±0.69	
31-40	2.12±1.00		2.38±0.91		1.12±0.47	
>41	2.36±0.95		2.45±0.91		1.27±0.73	
Religion		0.61		0.08		**<0.01****
Hindu	2.08±1.00		2.17±0.98		1.24±0.65	
Buddhist	2.20±1.09		1.80±1.09		1.00±0.00	
Ethnicity		0.36		0.99		0.71
Brahmin	2.05±1.00		2.15±0.99		1.17±0.56	
Chettri	1.99±1.00		2.13±0.99		1.28±0.70	
Janjati	2.16±0.99		2.26±0.97		1.14±0.51	
Madeshi	2.30±0.97		2.13±1.01		1.43±0.84	
Marital Status		0.94		0.58		0.16
Married	2.03±1.00		2.17±0.98		1.17±0.55	
Unmarried	2.15±0.99		2.15±0.99		1.32±0.73	
Profession		0.28		**0.02***		0.57
Doctor	2.06±1.00		2.48±0.88		1.21±0.62	
Nurse	2.09±1.00		2.00±1.00		1.25±0.66	
Working hrs		**<0.01***		0.89		0.66
Work hours <8 hours	2.29±0.96		2.16±0.99		1.30±0.71	
Work hour >8 hours	1.89±0.99		2.17±0.99		1.17±0.56	
Years of work experience		0.64		0.48		**0.03***
1-5 yrs	1.64±0.82		1.72±0.85		2.51±0.77	
6-10 yrs	1.44±0.67		1.58±0.77		2.49±0.72	
11-15 yrs	1.31±0.48		1.46±0.87		2.77±0.43	
16- 20 yrs	1.20±0.42		1.60±0.84		2.20±0.91	
>21 yrs	1.29±0.61		1.57±0.85		2.14±0.53	
Department		0.18		0.54		0.69
Medicine	1.26±0.59		1.26±0.59		2.67±0.55	
Surgery	1.53±0.78		1.68±0.76		2.53±0.66	

Fisher's Exact Test (χ*), MBI-HSS Maslach Burnout Inventory-Human Services Survey, n number, y year, h hour, χ^2 Chi-square test

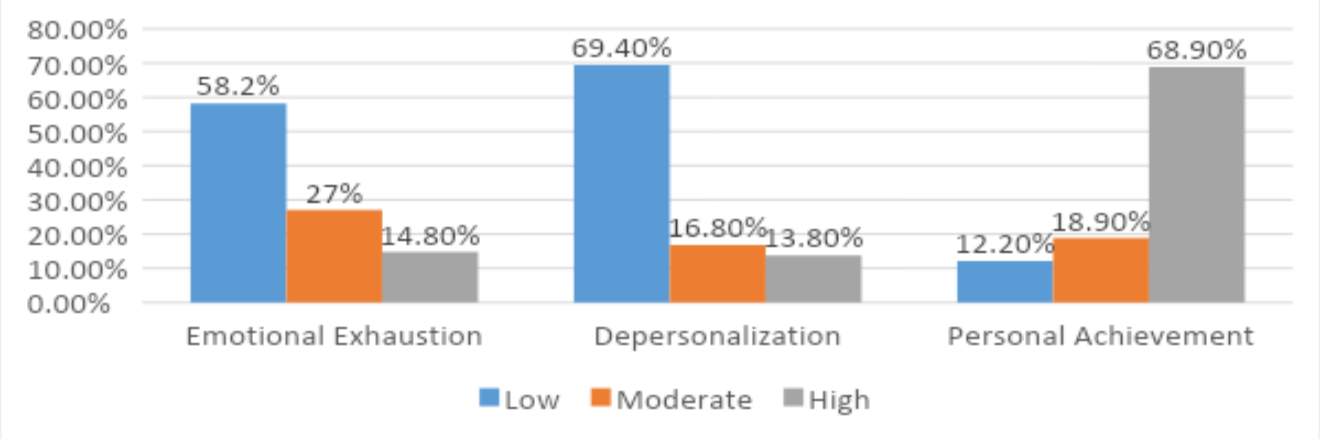

Figure 2: Dimension of MBI subscale of burnout in health care professionals

The lesser the work experience the higher lower the personal achievement was evident in our study; the lowest personal achievement was in 1-5 years' work experience (66.7%) and younger age group (60%) which is similar to the study conducted by Khodadoost M et. al. [22], which could be attributed to lower coping strategies and high expectation at work in younger and lesser experienced professionals.

In our study doctors showed twice as high levels of emotional exhaustion as compared to nurses (22.7%, 10.76%) respectively, this is similar to the study emergency medical and nursing staff in Spain, found that the prevalence of emotional exhaustion and reduced professional accomplishment was higher among doctors than nurses [23]. On the other hand, study conducted by Gosseries et. al, who reported that nurses were more emotionally exhausted than physicians [24]. However, nurses showed higher levels of depersonalization as compared to doctors (16%, 9%) respectively, which is similar to the study conducted by Abdo et. al. [15]. This could be due to the close contact and increased time spent with the patient and their family members, increasing the emotional demand of work [25].

Limitations: Burnout studies are limited in Nepal and this study will help add to the research and lead the way for further research in terms of what solutions could be introduced into policy and implemented in the hospitals to alleviate this issue. However, this study cannot be generalized to all the health care professionals in Nepal as this study was conducted in a single study site. This study will hopefully also raise further questions on factors affecting burnout, which will aid in the prioritization of the issue and will aid in prevention programs and policies.

CONCLUSION

Burnout among healthcare professionals in our setting is relatively low, however, factors like gender, profession, work experience, increased working hours and age contributed to it. To mitigate burnout, hospital administrations should develop and implement comprehensive initiatives, regularly monitor burnout in addition to addressing contributing factors. Improving mental health and working conditions can be accomplished by decreasing working hours through more rotations or additional staff, offering essential training and ongoing medical education to alleviate anxiety and implementing recreational activities to build camaraderie. These measures are crucial for better patient care and enhancing healthcare professionals' personal lives.

Author contributions: GJS and PSS conceptualized and designed the research and reviewed the literature; PSS did data collection; GJS and PSS did analysis, prepare result and drafted the manuscript; GJS reviewed the manuscript and all authors approved the final version of the manuscript. All authors agreed to be accountable for all aspects of the research work. Note: GJS and PSS are abbreviated names of the authors.

Ethics approval: This study was approved by the Institutional Review Committee of Nepalgunj Medical College Teaching Hospital (reference number: 74/079-080) on 8th June, 2023.

Consent and/or assent: Written informed consent was obtained from all the participants.

Data availability: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of interest: The authors declare that there is no competing interest.

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