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A Cross Sectional Study of Burnout Syndrome at A Tertiary Care Teaching Institute in Central India Using Maslach Burnout Inventory Score

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Abstract

Context:- *Burnout is prevalent among many health professionals, though not much studied, and is one of the significant factor for decreased performances and mental exhaustion among them. Doctor and nurses are high expectation job so is their working condition and pattern exhaustive. To increase the performance of medical institutions in patient care and high output training, burnout needs to be dealt with utmost care.*

Methodology:- *To determine the prevalence of burnout syndrome using Maslach Burnout Inventory score among the medical staff of a tertiary care teaching institute using a cross sectional study design.*

Results:-*Total participating members were 316. Mean score for depersonalization and loss of personal accomplishments were in the range of moderate level burnout in the campus. Being unmarried, female participants, PG residents and nurseareassociated with statistically significant high level of burnout.*

Conclusions:- *There is high level burnout among doctors. Globally burnout is prevalent among doctors and nursing professionals due to irregular duty hours, poor job satisfactions, high expectations, inadequate resources, and low compensation.*

Key-words:- *burnout, maslach, doctor, nurse, emotional exhaustion, depersonalization, loss of personal accomplishment.*

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I. Introduction

Various departments work together meticulously in a goal-oriented effort directed for patient better health outcome, and this interaction is not just limited to themselves but with patient and their relatives too. This psychological, physical and mental involvement of medical professionals during long working hours, with lack of proper rest, inadequate resources, and insufficient compensationare often charged with feelings of anger, fear, embarrassment and despair. Since the medical professionals work continuously under such circumstances, the chronic stress becomes much more emotionally draining and leads to burnout.[1]Burnout is "an experience of physical, emotional, and mental exhaustion, caused by long-term involvement in situations that are emotionally demanding".[2]The term "burnout" was coined in the 1970s by the American psychologist Herbert Freudenberger.[3]The term burnout was used to describe, the stressful situations on a long run and its consequential effect on the high ideals of helping professions i:e. Doctors and Nurses. [4]

Burnout reflects a lack of harmony between the employee and his/her workplace, and develops progressively.[5] Burnout is a psychological syndrome of emotional exhaustion, depersonalization, and loss of personal accomplishment.[1] A key aspect of **emotional exhaustion** in burnout is increased feeling of emotional resources being depleted; doctors/nurses feel that they no longer are able to give of themselves at a psychological level.[1]**Depersonalization** (i:e negative, cynical attitudes about ones patients). This callous or even dehumanized perception of others can lead doctors/staff members to view their patients/clients as somehow deserving of their troubles.[1]The development of depersonalization appears to be related to the experience of emotional exhaustion, and so these two aspects are correlated. A third aspect of the burnout syndrome, **Loss of personal accomplishment**, refers to the tendency to evaluate oneself negatively, particularly with regards to one's own work. Doctors/staff members may feel unhappy about themselves and dissatisfied with their accomplishment in job.[6]People with burnout are very negative about their tasks. Cynicism is expected to

increase with increasing feelings of exhaustion (positive relationship), and professional efficacy is expected to decrease with increasing cynicism (negative relationship).[7]The burnout is a dynamic process and a sequence of events that lead to the occurrence of burnout is depicted in a Figure 1.[8]

The present study aims to determine the prevalence of burnout syndrome using the MBI (Maslach Burnout Inventory) score, exploring three components: Emotional Exhaustion, Depersonalization and Loss of Personal Accomplishments among the medical staff of a tertiary care teaching institute in central India.

II. Subjects and Methods:-

Study Subjects –to conduct this study we invited interns posted in various departments during their rotatory postings to participate in the study. Post graduate (PG) students enrolled in various academic streams along with non - academic residents i:e.Junior resident (JR) and senior resident (SR) were requested to give consent and fill the questionnaire. Nursing professionals were requested to participate in the study too.

Study Methods & Design –The requisite permissions were taken prior to conducting the study. The present one was an Analytical Cross Sectional Study, conducted on the medical staff of a tertiary care teaching institute in central India. The data collection was started in November 2017 and completed by May 2018. A pre designed, pre-tested and validated questionnaire was given to all the study participants one by one personally and get it filled. The confidentiality of the study participants was fully maintained throughout the study. Participants who gave written informed consent and were Interns, PGs, JR/SRs and Nurse were included in the study. Those who did not want to participate in the study, did not give consent or returned incompletely filled questionnaires were excluded from the study.

Sample size and Technique-We used convenience sampling technique for which we distributed study questionnaire to the members of all the departments one by one. Those who gave consent and returned it completely filled were included in the study.

Study Tool- Burnout was measured with the Maslach Burnout Inventory (MBI) score, which is a reliable and validated 22-item questionnaire with a 7-point scale (from never = 0 to every day = 6). The three subscales of burnout include seven items for Emotional Exhaustion and Depersonalization, while eight opposite items for Loss of Personal Accomplishment with a subscale score of 48.[1]For Emotional Exhaustion 1-17 score was low score, 18-29 was moderate and more than 29 was high level burnout. For Depersonalization score 0-5 was low, 6-11 was moderate and more than 11 was high score. Loss of personal accomplishment domain, score more than 39 was low level, 34-39 was moderate and less than 34 was high score burnout. [1]For study purpose and analysis we have divided people into the category of either Burnout absent (low score) or burnout present (moderate to high score).

Statistical Analysis:-Statistical analysis was performed with SPSS software, version 16.0. Simple frequency format was used for Categorical variables. Standard deviation was applied to percentages and quantitative and numerical variables. Logistic regression analysis was used to describe the possible association between independent variables and the outcome as burnout in all the three domains of MBI. At start all the variables were included in the regression model, later less significant variables were excluded one by one. The adjusted ODDs Ratio and p values were calculated for the significant independent variables.

III. Results

A total of 316 participants were included in the study, among them 61(19.3%) participants were burn out in the domains of emotional exhaustion, while 210(66.5%) and 180(57.0%) in the Depersonalization and Loss of personal accomplishment domains of MBI respectively. The mean score of participants in all the three domains of MBI with standard deviation and 95% confidence intervals are depicted in Table 1.

Mean age of the participants in the study was 28.6±4.7 years. Socio-demographic variables of the participants with Proportions, Pearson Chi Square and P values are shown in Table 2.

Gender wise analysis shows that males had a mean score of 12.4(SD8.6) in the depersonalization domain as compared to females with mean score of 8.7(SD8.3). Residence status shows that 75 (53.2%) male and 72(41.1%) female participants were living in hostel accommodation while 43(30.5%) and 56(32.0%) respectively in rented accommodation outside campus. 53(37.6%) male and 72(42.3%) female participants were married. Our study had 40(22.9%) female participants working as PG residents while 94(53.7%) were from nursing department, and among male 54(38.3%) were PG residents. Alcohol consumption was accepted by 78(65.3%) male as compared to 155(88.6%) of female counterpart who denied taking it. Tobacco consumption was present in 55(39.0%) male while 98.3% female denied taking it which was not significant statistically.

In all the three caste categories i:e. General with mean score of 10.4(SD8.6), OBC participants with 9.3(SD7.2) and SC/ST with mean score of 10.9(SD9.7) respectively were burn out in the depersonalization domains of MBI while respective participants had a mean score of 34.4(SD10.9), 36.9(SD9.9) and33.9(SD11.1) in the domains of loss of personal accomplishments though statistically not significant.

Division of participants in pre-clinical, para-clinical, minor and major subjects with respect to burnout are shown in Table 3, while Department wise distribution of participants with respect to Burnout in all the three domains of MBI are shown in Table 4.

The logistic regression analysis (Table 5) reveals that we have statistically significant association between different variables.

IV. Discussion

Burnout is a triad of emotional exhaustion, depersonalization, and a loss of personal accomplishments. Burnout has contributory impact on multiple physical, social and psychological symptoms including substance abuse, which deleteriously affects the quality of life of medical professionals.

We had burnout (moderate to high) among 19.3% participants in the domains of emotional exhaustion, 66.5% and 57.0% in the Depersonalization and Loss of personal accomplishment respectively. Study in Riyadh by Altannir Y et al[9]has shown 50% of medical students to be with moderate to high burnout in emotional exhaustion, 80.1% and 35.2% in depersonalization and loss of personal accomplishment domains of burnout while it was 90.3%, 91.3% and 51.3% respectively among medical students at the Barretos School of Health Sciences by Boni RADS et al[10]in Brazil. Study by Lee KP et al[11] in Hong Kong had high level burnout among 49.3% of the participants in emotional exhaustion while it was 53.8% and 5.1% in depersonalization and loss of personal accomplishment domains respectively. These variations may be due to regional differences in, study subjects taken, their lifestyle behaviour, perceptions, coping strength, medical workload pattern among others.

The mean age of the participants was 28.6±4.7 years. All age groups were with mod-high score burnout in the depersonalization domains. As age advanced the proportions of depersonalization and loss of personal accomplishment score decreased in the study conducted by Woodside et al [12].Similar was for Sarma PG et al[13] in his study with majority being less than 30 years age. While Shreelatha P et al[14] in their study has shown 23-28 years age group with high-level burnout. Central India being with few tertiary care institutes might be the reason for all age group to be engaged in hectic duty schedule in turn stressed out.

76.6% male and 58.3% female counterpart in our study were burn out in the domains of depersonalization while there was no gender variation in emotional exhaustion and loss of personal accomplishment domains. When we did the logistic regression analysis, female participants had Adjusted Odds Ratio of 2.34 in the Depersonalization domains with p value 0.0009 which suggests the high prevalence of burnout among them. Similar was the findings from the study by Embriaco N et al[15], Langade D et al[16], Dhusia AH et al[17]with higher rates of burnout among female participants. No significant association of gender and burnout was found by Ratnakaran B et al[18] in their study, also at Hong kong by Lee KP et al[11].

70.9% of unmarried participants were significantly associated with burnout in the depersonalization domainswhile 59.8% were in the loss of personal accomplishment domains. Similar findings were shown by Martini S et al[19], Sreelatha P et al[14], Jugale PV et al[20]in their study. Martini S et al[19] showed that 65.2% of single, divorced, or unmarried residents met the criteria for burnout compared with 40.0% of married individuals. while Lee KP et al[11] in Hong Kong had burnout among 100% of divorced and 28.1% of the unmarried participants.

As per accommodation, 73.5% of those living in hostel were burnout in depersonalization domain while 61.9% in loss of personal accomplishment. In logistic regression analysis residents living in rented accommodation had Adjusted Odds Ratio (AOR) of 13.1 with p value 0.000001 and those living in their home(day-scholars) had adjusted odds ratio of 15.6 with p value 0.000001. which suggests the high prevalence among residents living in accommodation outside the campus. That might be due to mutual cooperation at work among campus residing residents and better help and support during stressful situations. Study in Hong Kong by Lee KP et al[11] (2020) has shown that34.3% participant were residing in campus and among them 25.7% had burnout while 53% were living in their homes and 26.1% developed burnout.

Those who were taking tobacco/ consuming alcohol for more than 5 years, among them 74.1%/73.1% were burnout in depersonalization while 46.6%/57.7% in the loss of personal accomplishment domains respectively. As per study by Lee KP et al[11] 33.3% were burnout who were smoking while 62.5% of those taking alcohol were burnout. Substance abuse was high among people with burnout.

PG residents work for long hours to carry out their duties along with regular academic activityare susceptible for burnout. We have found that 79.8% PG residents and 50% nursing professionals wereburn out in depersonalization domain while 61.7% and 44.8% in the domains of loss of personal accomplishments. 77.1% of JRs/SRs were burn out too in depersonalization domains. In logistic regression analysis the AOR for nursing professionals were 1.96/1.99 and 2.66 in the emotional exhaustion, depersonalization and loss pf personal accomplishment domains of MBI with significant p value in last two. Dhusia AH et al[17] in his study has also shown the high prevalence of burnout among PG residents which may be due to added academic stress apart from routine hospital work. Siddiqui AA et al[21] in their study has shown that 73% of the PG residents were burn

out. While study in Pune by Chanu J Net al[22]has shown 96% and 99% of the nurse were burnout in emotional exhaustion and depersonalization domain, which is a very high score.

Burnout among residents has been associated with depression, anxiety, drug and alcohol abuse, and subsequent deterioration in health.[23]

Altannir Y et al[9] in Riyadh has shown high proportion of burnout among female medical residents. AlsoAmoafo et al[24], in a review of 47 studies, have shown that female sex, younger age, and unmarried status working in medical profession are predictors of burnout.

World Health Organisation has included the Burnout in the 11th revision of International Classification of Disease as an occupational condition on 28th may 2019.[25] It's no more a medical condition.

V. Conclusion

The fact that burnout prevalence is so high among medical staff mainly PG, Nurse, female gender and unmarried participants, the need for intentional, targeted prevention programs with learning skills at their respective departments that they can use to feel supported and less stressed. Incorporating reflection, practising coping skills to be used during times of stress. Time management, preventative emotional self-care, and developing and maintaining social connections in and outside of medicine/routine work to support resident well-being is needed.[26, 27]

Programs which encourage relaxation skills, mindful meditation, and on-duty napping to reduce burnout risk can be included as part of PG training.[28, 29]

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Flowcharts, Tables and graphs in the study.

Table 1. Central tendencies and dispersions in all the three domains of Maslach Burnout Inventory (MBI) score. (N = 316)

Central Tendencies and Dispersions	Emotional Exhaustion	Depersonalization	Loss of Personal Accomplishment
Mean	10.79	10.35	34.75
Std. Deviation	8.494	8.656	10.793
Confidence Interval (95%)	9.85 – 11.73	9.4 – 11.31	33.56 – 35.94

Table 2. Proportions, Pearson Chi Square and P values in all the three domains of Maslach Burnout Inventory (MBI) Score. (N = 316)

Independent variables		Emotional Exhaustion		Depersonalization		Loss of Personal Accomplishment	
		Burnout Present N (%)	χ^2 (P value)	Burnout Present N (%)	χ^2 (P value)	Burnout Present N (%)	χ^2 (P value)
Age (years)	≤ 25 (n = 79)	19 (24.1%)	χ^2 - 0.7 P value = 0.5	53 (67.1%)	χ^2 - 2.3 P value = 0.5	55 (69.6%)	**χ^2 - 7.8 P value = 0.05**
	26 to 30 (n = 167)	28 (16.8%)		113 (67.7%)		90 (53.9%)	
	31 to 35 (n = 47)	8 (17.0%)		32 (68.1%)		25 (53.2%)	
	> 35 (n = 23)	6 (26.1%)		12 (52.2%)		10 (43.5%)	
Gender	Male (n = 141)	27 (19.1%)	χ^2 - 0.004 P value = 0.9	108 (76.6%)	**χ^2 - 11.7 P value = 0.001**	80 (56.7%)	χ^2 - 0.005 P value = 0.9
	Female (n = 175)	34 (19.4%)		102 (58.3%)		100 (57.1%)	
Marital Status	Married (n = 127)	23 (18.1%)	χ^2 - 0.2 P value = 0.6	76 (59.8%)	**χ^2 - 4.2 P value = 0.04**	67 (52.8%)	χ^2 - 1.5 P value = 0.2
	Unmarried (n = 189)	38 (20.1%)		134 (70.9%)		113 (59.8%)	
Residence	Hostel (n = 147)	32 (21.8%)	χ^2 - 1.2 P value = 0.5	108 (73.5%)	**χ^2 - 7.6 P value = 0.02**	91 (61.9%)	**χ^2 - 6.5 P value = 0.03**
	Rented (n = 99)	18 (18.2%)		56 (56.6%)		46 (46.5%)	
	Day scholar (n = 70)	11 (15.7%)		46 (65.7%)		43 (61.4%)	
Designation	Intern (n = 82)	19 (23.2%)	χ^2 - 3.7 P value = 0.3	55 (67.1%)	**χ^2 - 21.3 P value = 0.0001**	56 (68.3%)	**χ^2 - 11.6 P value = 0.009**
	PG * (n = 94)	21 (22.3%)		75 (79.8%)		58 (61.7%)	
	JR/SR † (n = 35)	7 (20.0%)		27 (77.1%)		19 (54.3%)	
	Nurse (n = 105)	14 (13.3%)		53 (50.5%)		47 (44.8%)	
Alcohol intake (durations)	No alcohol (n = 218)	43 (19.7%)	**χ^2 - 6.1 P value = 0.04**	139 (63.8%)	χ^2 - 2.3 P value = 0.3	130 (59.6%)	χ^2 - 2.6 P value = 0.2
	< 5 yrs (n = 72)	9 (12.5%)		52 (72.2%)		35 (48.6%)	
	≥ 5 yrs (n = 26)	9 (34.6%)		19 (73.1%)		15 (57.7%)	

* Post graduate student, † Junior Resident/Senior Resident

Table 3. Department wise distribution of participants with respect to proportions (%), Mean score and Standard Deviation in all the three domains of Maslach Burnout Inventory (MBI) score.(N = 316)

Students stream	N (%)	Emotional exhaustion Mean (SD)*	Depersonalization Mean (SD)*	Loss of Personal Accomplishment Mean (SD)*
Pre-clinical subjects	1(0.3)	8	10	33.3
Para-clinical subjects	9(2.8)	8.3(9.4)	8.1(9.7)	33.3(9.6)
Minor subjects	57(18.0)	11.7(8.5)	9.7(8.6)	31.6(10.8)
Major subjects	249(78.8)	10.6(8.5)	10.6(8.7)	35.6(10.8)
SD- standard deviation				

Table 4. Department wise distribution of participants with respect to Prevalence of Burnout in all the three domains of Maslach Burnout Inventory (MBI) Score. (N = 316)

Departments	Emotional Exhaustion	Depersonalization	Loss of Personal Accomplishments
Anaesthesia (n = 16)	2 (12.5%)	11 (68.8%)	4 (25.0%)
Cardiology (n = 4)	0 (0.0%)	0 (0.0%)	2 (50.0%)
Dental (n = 1)	0 (0.0%)	1 (100%)	1 (100%)
Dermatology (n = 4)	1 (25.0%)	4 (100%)	3 (75.0%)
Ear Nose & Throat (n = 12)	2 (16.7%)	9 (75.0%)	9 (75.0%)
Medicine (n = 43)	10 (23.3%)	26 (60.5%)	25 (58.1%)
Neurology (n = 7)	0 (0.0%)	1 (14.3%)	3 (42.9%)
Neurosurgery (n = 11)	1 (9.1%)	7 (63.6%)	6 (54.5%)
Obstetrics and Gynaecology (n = 32)	6 (18.8%)	22 (68.8%)	20 (62.5%)
Ophthalmology (n = 11)	4 (36.4%)	10 (90.9%)	11 (100%)
Orthopaedics (n = 24)	2 (8.3%)	16 (66.7%)	9 (37.5%)
Paediatric Surgery (n = 2)	1 (50.0%)	2 (100%)	1 (50.0%)
Pathology (n = 6)	0 (0.0%)	5 (83.3%)	3 (50.0%)
Paediatrics (n = 37)	9 (24.3%)	26 (70.3%)	28 (75.7%)
Pharmacology (n = 3)	1 (33.3%)	2 (66.7%)	2 (66.7%)
Physiology (n = 1)	0 (0.0%)	1 (100%)	1 (100%)
Community Medicine (n = 34)	9 (26.5%)	22 (64.7%)	21 (61.8%)
Psychiatry (n = 6)	2 (33.3%)	4 (66.7%)	1 (16.7%)
Radiology (n = 5)	2 (40.0%)	4 (80.0%)	2 (40.0%)
Radiotherapy (n = 1)	0 (0.0%)	0 (0.0%)	1 (100%)
Surgery (n = 36)	5 (13.9%)	25 (69.4%)	17 (47.2%)
Trauma Centre (n = 20)	4 (20.0%)	12 (60.0%)	10 (50.0%)

Table 5. Logistic Regression Analysis in all the three domains of Maslach Burnout Inventory (MBI) Score.(N = 316)

Independent variables		Emotional Exhaustion			Depersonalization			Loss of Personal Accomplishments		
		AOR*	P value	CI† (95%)	AOR*	P value	CI † (95%)	AOR*	P value	CI† (95%)
Age (years)	≤ 25 (n = 79)	Reference = 1								

	26 to 30 (n = 167)	1.6	0.2	0.8 – 3.0	0.9	0.9	0.5 – 1.7	1.9	**0.02**	1.1 – 3.5
	31 to 35 (n = 47)	1.5	0.5	0.6 – 3.8	0.9	0.9	0.4 – 2.1	2.0	0.09	0.9 – 4.2
	> 35 (n = 23)	0.9	0.9	0.3 – 2.6	1.8	0.2	0.7 – 4.7	2.9	**0.04**	1.1 – 7.7
Gender	Male (n = 141)	Reference = 1								
	Female (n = 175)	0.9	0.9	0.6 – 1.7	2.3	**0.0009**	1.4 – 3.8	0.9	0.9	0.6 – 1.5
Marital Status	Unmarried (n = 189)	Reference = 1								
	Married (n = 127)	0.8	0.7	0.5 – 1.6	0.6	**0.05**	0.4 – 0.9	0.9	0.7	0.6 – 1.4
Residence	Hostel (n = 147)	Reference = 1								
	Rented (n = 99)	13.1	**0.000001**	5.5 – 30.7	2.1	**0.008**	1.2 – 3.6	1.8	**0.02**	1.1 – 3.1
	Day scholar (n = 70)	15.6	**0.000001**	6.1 – 39.9	1.4	0.3	0.8 – 2.6	1.1	0.9	0.6 – 1.8
Designations	Interns (n = 82)	Reference = 1								
	PG‡ (n = 94)	1.1	0.9	0.5 – 2.1	0.5	0.08	0.3 – 1.0	1.3	0.4	0.7 – 2.5
	JR/SR§ (n = 35)	1.2	0.9	0.4 – 3.2	0.6	0.4	0.2 – 1.5	1.8	0.2	0.8 – 4.1
	Nurse (n = 105)	1.9	0.1	0.9 – 4.2	1.9	**0.03**	1.1 – 3.6	2.6	**0.002**	1.5 – 4.8
* Adjusted odds ratio, † 95% confidence interval, ‡ Post graduate student, § Junior resident/Senior resident										