International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2019): 7.583

Professional Burnout in Nurses across India: A Cross - Sectional Study

Meenu Jain[1], Maya Patlia[2], Vaishali Thakare[3], Deepak Langade[3]

[1]Assistant Director Nursing, P D Hinduja National Hospital & MRC, Mumbai, Maharashtra, India

Nursing Research Department, Malvanchal University, Index City, Indore, MP, India

Assistant Director Nursing, P D Hinduja National Hospital & MRC, Mumbai, Maharashtra, India

Department of Pharmacology, D Y Patil University School of Medicine, Navi Mumbai, India

Abstract: ***Background and objectives: Excessive and prolonged work-related stress has always been a cause for burnout among healthcare professionals. This has led to emotional, mental, and physical exhaustion. This survey was conducted to assess the burnout among medical practitioners using the abbreviated Maslach Burnout Inventory (aMBI) scale. Materials and methods: A cross-sectional study was conducted as in 1018 (836 female, 180 male, 2 did not specify) nursing professionals across India. A standardized and widely accepted 12-item aMBI scale with three domains of 'emotional exhaustion', 'depersonalization', and 'personal accomplishment' was used to assess the burnout in nursing professionals. The distribution of responses for each variable was examined using frequencies and percentages among the sub-groups to find out the burnout levels of various components of the scales. Results: Professional burnout was observed in at least one domain of the aMBI scale in 62.7% (638) nursing professionals. The burnout was observed in the three domains of aMBI i.e., 'emotional exhaustion', 'depersonalization', and 'personal accomplishment' in 9.1% (93), 9.2% (94), and 31.5% (321)nursing professionals respectively. A total of 16 (1.6%) nurses had burnout in all the three domains of aMBI. There was significantly greater burnout observed in nurses in academics(p<0.0001) and those with longer duration (>5 years) of work experience (p,0.031). However, there was greater but non-significant burnout observed in females (p, 0.163)and younger (<30 years of age) nurses (p, 0.278). Conclusion: The results suggest high level of burnout in nursing professionals and warrant immediate actions to address this issue.***

Keywords: burnout, nursing, aMBI, chronic stress, mental health, India

1. Introduction

Chronic stress in the work environment is one of the leading factors for burnout syndrome and could have a deleterious effect on health [1]. Burnout is defined as a feeling of hopelessness and inability in carrying out one's job effectively [1]. It is a psychological and physical response which may arise when the employees are exposed to a stressful working environment involving high expectations, inadequate resources, and low compensation. This can be seen when an individual fails to control the work-related stress effectively. Professional burnout has three primary components: i) exhaustion (feeling of not being able to give any more of oneself to work); ii) cynicism (distancing behaviour towards work, customers, and co-workers); and iii) inefficiency (feelings of inadequacy and incompetence when performing tasks at work) [2].

Working in healthcare profession especially as a paramedical healthcare professional can be stressful leading to burnout syndrome, which is a problem that can affect all professionals. Burnout can be a serious problem in the healthcare professionals due to its nature and failure to detect it early. Hence, it needs to be addressed promptly, especially in India where the burden of healthcare of the population rests on the shoulders of a small number of healthcare professionals.

Burnout has been studied among healthcare workers in many parts of the world including the USA [3-4], European countries [5-6], and Latin America [7-8], while very few studies are being reported from India [8]. Numerous studies have explored and reported work related stress in healthcare personnel in many countries [9]. Also, a high level of emotional exhaustion, depersonalization, and low personal accomplishments were reported among the nurses and respiratory therapists working in the intensive care unit (ICU) in the US [3].

This cross-sectional study was conducted to assess the degree of burnout among the medical nurses across India and to compare the pattern of burnout amongst the different sub-groups based on the gender, age, and work experience.

2. Materials and Methods

This was a cross-sectional study to assess the level of burnout among nurses across India. This study was conducted in adherence to good clinical practice (GCP) guidelines and Declaration of Helsinki (DoH). The study documents were reviewed and approved by the Institutional Ethics Committee (IEC) of D Y Patil Medical College, Navi Mumbai, Maharashtra, India.

All participating nurses had to complete a 12-item self-administered abbreviated Maslach Burnout Inventory (aMBI). The respondents filled the responses on a print (paper) format, an electronic format (.pdf) or through an online link. The participants who consented for participation in person were requested to complete the printed format and submit them to the researchers. The electronic form was designed as a portable document format (.pdf) and was sent

to the potential respondents by e-mail. The electronic forms were downloaded and filled by the responders and returned via postal or courier service or emailed back as scanned copies. Additionally, an online link (Microsoft 365 forms) to fill the form was also made available to the respondents who wished to submit their forms online. All the electronic and print forms were checked for completeness, and any deficiency or discrepancies were resolved by the respondents via mail, short message service (SMS), or telephonic communication.

Convenient sampling was used for data collection, and participants from different hospitals, healthcare teaching institutions and clinics from various parts of the country were included in the study. Emails were sent to the potential responders explaining the scope and objective of the study. In addition to an invitation to participate, a link to the survey that contained a description of the study was provided. The participation was purely voluntary. The data was collected from August 2019 to December 2020.

An attempt was made to reach out to a large number of nurses across India; however, there were more responders from the state of Maharashtra. We were able to reach over 2500 nurses of which a total of 1018 responded. The geographical location of responders is presented in figure 1.

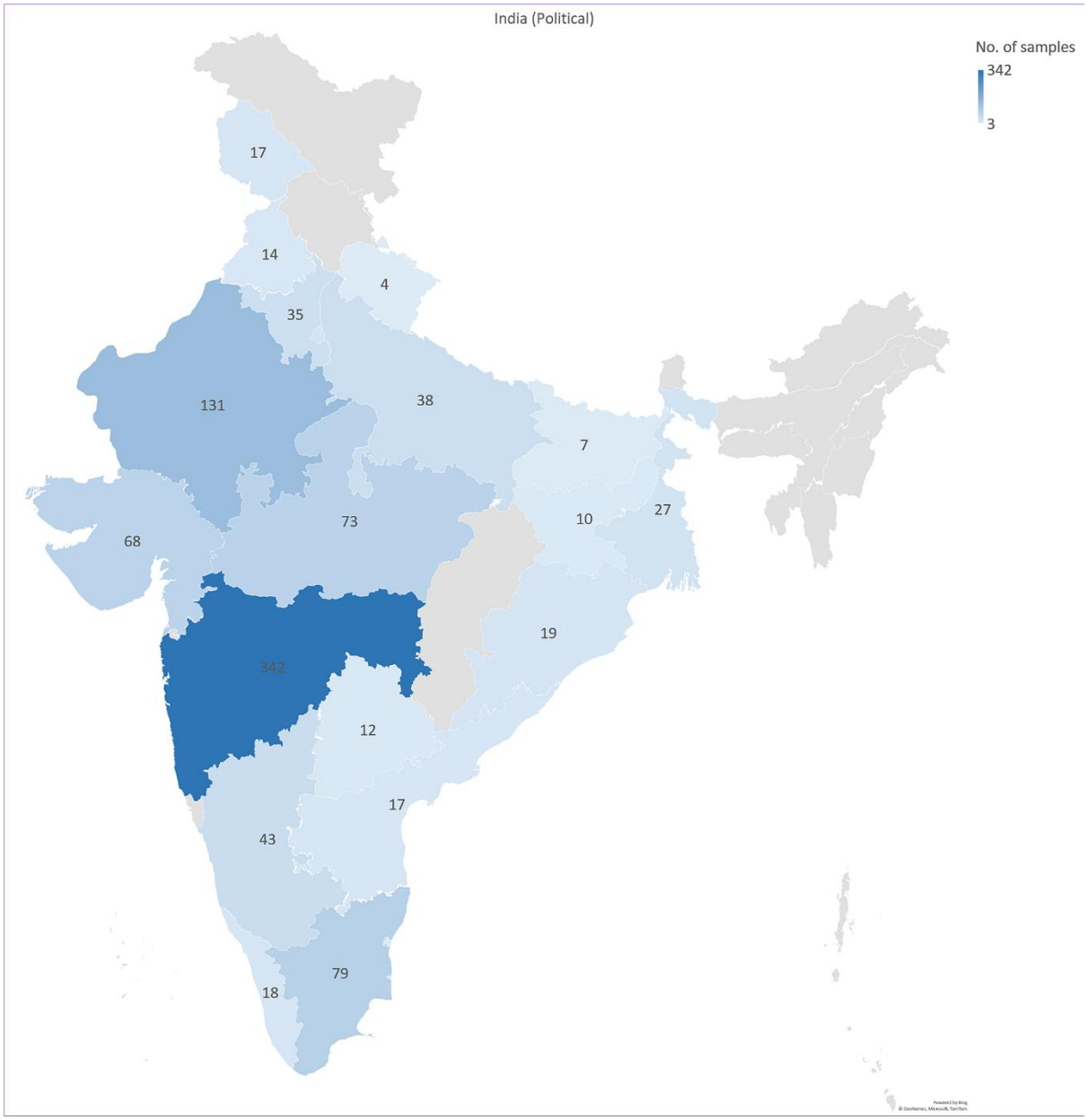

Figure 1: Geographical location of responders (n=1018)

Nurses of either gender, who had a diploma, bachelor's degree, or master's degree in nursing from any state or union territory of India and had registered with their respective nursing councils were contacted for the survey. Duration of experience was not a criterion for exclusion. Nurses working either in academics, private practice, or both were included for the study. Any respondents who did not meet the above criteria were excluded from the analysis.

The demographic profile, academic qualifications, and the work profile of respondents were captured. Burnout was assessed using the abbreviated Maslach Burnout Inventory

(aMBI), which is a validated scale and has been used in earlier studies to assess the burnout among medical practitioners, students, and healthcare workers [10-12].

The aMBI consists of three main domains of burnout. The emotional exhaustion subscale (items 3, 4, and 7) assesses the feelings of being emotionally overextended and exhausted by one's work. The depersonalization subscale (items 2, 5, and 8) measures an unfeeling and impersonal response towards the recipients of one's service, care, or treatment. The personal accomplishment subscale (items 1, 6, and 9) assesses the feelings of competence and successful achievement in one's work with the people. An additional fourth subscale, career satisfaction i.e., satisfaction with work (items 10, 11, and 12) has been added to the original inventory to assess the satisfaction with one's work [13-15]. For this study, the participants had to indicate their degree of agreement with each of the statements presented according to a Likert-type scale with the seven response options scored from zero (totally disagree) to six (totally agree). The burnout scores of zero to six were considered low, seven to 12 were considered moderate, and 13-18 was considered high for each domain as recorded by the earlier studies [16-17].

The data was divided into various sub-groups based on age (≤30 years and >30 years), gender (male, female, prefer not to mention), duration of experience (≤5 years and >5 years), and job profile (academics, hospital/practice and both).

The completed questionnaires were coded, and the data was tabulated prior to analysis. The distribution of the responses for each variable was examined using frequencies and percentages. Descriptive statistics were presented for the scores of questionnaire domains in the different sub-groups. Mean scores were calculated for the individual subscales of aMBI scores. For the aMBI scale, the cut-off values for burnout were >17, >19 and <6 for the emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA) domains, respectively [18]. Prevalence of burnout was estimated using these criteria for each domain and the overall burnout was defined as those having burnout in all three domains of aMBI scale.

3. Results

Profile of responders is presented in table-1. There were more female responders (n=836) compared to males (n=180), whereas two responders preferred not to specify their gender. About 77.0% responders were into hospital practice as against only 11.2% into academicians, and 11.8% occupied with both academics and practice. About 60.3% responders were below 30 years of age and 63.9% had experience of over 5 years.

Table 1: Profile of responders (n=1018)

	No.	%
Gender		
Male	180	17.70%
Female	836	82.10%
Prefer not to mention	2	0.20%
Profession		
Hospital/Practice	784	77.00%
Academics	114	11.20%
Both	120	11.80%
Age group		
<=30 yrs.	614	60.30%
>30 yrs.	404	39.70%
Experience		
<=5 yrs.	367	36.10%
>5 yrs.	651	63.90%

Table-2 presents the total aMBI scores and scores for the four domains, i.e. emotional exhaustion, depersonalization, personal accomplishment and satisfaction. The burnout scores of zero to six were considered low, seven to 12 were considered moderate, and 13-18 was considered high for each domain. The mean (SD) scores for emotional exhaustion were 9.51 (5.06), for depersonalization were 13.17 (4.52), for personal accomplishment were 7.33 (3.68), and for satisfaction domain were 12.24 (3.46) with a mean score of 42.26 (10.55) for total aMBI scale (sum of all four domains). Thus, burnout was observed in all four domains of aMBI with highest burnout observed in the depersonalization domain and satisfaction domain.

Table 2: aMBI scores for the four domains and total score (n=1018)
aMBI: abbreviated Maslach Burnout Inventory

aMBI domains	Mean	Median	SD	Minimum	Maximum
Emotional exhaustion	9.51	9	5.06	0	21
Depersonalization	13.17	13	4.52	0	20
Personal Accomplishment	7.33	7	3.68	0	19
Satisfaction	12.24	12	3.46	1	21
Total score	42.26	43	10.55	1	79

Table-3 shows the descriptives for aMBI scores for EMOTIONAL EXHAUSTION domain in the different sub-groups based on gender, profession type, age and experience. There were no gender differences observed between males and females with respect to the scores for emotional exhaustion (p=0.552). However, significant differences were observed in the scores in different profession types (p<0.0001), age groups (p<0.0001) and duration of experience (p=0.005). Greater emotional exhaustion was observed in those in academics/both, in those with higher age group (>30 years) and those with shorter duration of experience (<=5 years).

Table 3: aMBI scores for EMOTIONAL EXHAUSTION domain in the different sub-groups
aMBI: abbreviated Maslach Burnout Inventory

	N	Mean	95% C.I.	p	Mean difference	95% C.I. for difference
Gender						
Male	180	9.3	(8.58 to 10.02)	0.552	-0.247	(-1.061 to 0.567)
Female	836	9.55	(9.20 to 9.89)	(Male Vs Female)		
Prefer not to mention	2	15	(-61.24 to 91.24)			
Professional type						

Hospital/Practice	784	8.75	(8.41 to 9.09)	<0.0001		
Academics	114	11.98	(11.27 to 12.69)			
Both	120	12.16	(11.12 to 13.20)			
Age group						
<=30 yrs.	614	9.03	(8.63 to 9.43)	<0.0001	-1.225	(-1.856 to -0.593)
>30 yrs.	404	10.25	(9.77 to 10.74)			
Experience						
<=5 yrs.	367	10.1	(9.57 to 10.63)	0.005	0.918	(0.273 to 1.563)
>5 yrs.	651	9.18	(8.80 to 9.57)			

Table-4 shows the descriptives for aMBI scores for DEPERSONALIZATION domain in the different sub-groups based on gender, profession type, age and experience. There were no gender differences observed between males and females with respect to the scores for emotional exhaustion (p=0.479). However, significant differences were observed in the scores in different profession types (p<0.0001) and age groups (p<0.0001). Also, there were no difference with respect to the duration of experience (p=0.215). Greater depersonalization was observed in those in academicians/both and in those with higher age group (>30 years).

Table 4: aMBI scores for DEPERSONALIZATION domain in the different sub-groups
aMBI: abbreviated Maslach Burnout Inventory

	N	Mean	95% C.I.	p	Mean difference	95% C.I. for difference
Gender						
Male	180	13.39	(12.74 to 14.03)	0.479	0.263	(-0.466 to 0.992)
Female	836	13.13	(12.82 to 13.43)	(Male Vs Female)		
Prefer not to mention	2	13	(-12.41 to 38.41)			
Professional type						
Hospital/Practice	784	12.69	(12.37 to 13.01)	<0.0001		
Academics	114	16.14	(15.57 to 16.71)			
Both	120	13.49	(12.70 to 14.29)			
Age group						
<=30 yrs.	614	12.51	(12.15 to 12.87)	<0.0001	-1.673	(-2.231 to -1.114)
>30 yrs.	404	14.18	(13.76 to 14.60)			
Experience						
<=5 yrs.	367	13.41	(12.94 to 13.87)	0.215	0.366	(-0.212 to 0.944)
>5 yrs.	651	13.04	(12.69 to 13.39)			

Table-5 shows the descriptives for aMBI scores for the PERSONAL ACCOMPLISHMENT domain in the different sub-groups based on gender, profession type, age and experience. There were no gender differences observed between males and females with respect to the scores for emotional exhaustion (p=0.454). However, significant differences were observed in the scores in different profession types (p=0.003) and age groups (p=0.019). Also, there were no difference with respect to the duration of experience (p=0.943). Greater dissatisfaction in terms of personal accomplishment was observed in those in hospital practice and in lower age group (<=30 years).

Table 5: aMBI scores for PERSONAL ACCOMPLISHMENT domain in the different sub-groups
aMBI: abbreviated Maslach Burnout Inventory

	N	Mean	95% C.I.	p	Mean difference	95% C.I. for difference
Gender						
Male	180	7.14	(6.63 to 7.66)	0.454	-0.226	(-0.820 to 0.367)
Female	836	7.37	(7.12 to 7.62)	(Male Vs Female)		
Prefer not to mention	2	5.5	(-26.27 to 37.27)			
Professional type						
Hospital/Practice	784	7.49	(7.23 to 7.76)	0.003		
Academics	114	7.31	(6.75 to 7.87)			
Both	120	6.26	(5.59 to 6.93)			
Age group						
<=30 yrs.	614	7.55	(7.26 to 7.83)	0.019	0.551	(0.089 to 1.012)
>30 yrs.	404	7	(6.62 to 7.37)			
Experience						
<=5 yrs.	367	7.32	(6.94 to 7.69)	0.943	-0.017	(-0.489 to 0.454)
>5 yrs.	651	7.33	(7.05 to 7.62)			

Table-6 shows the descriptives for aMBI scores for the SATISFACTION domain in the different sub-groups based on gender, profession type, age and experience. There were no gender differences observed between males and females with respect to the scores for emotional exhaustion (p=0.732). However, significant differences were observed in the scores in different profession types (p<0.0001) and age groups (p=0.012). Also, there were no difference with

respect to the duration of experience (p=0.141). Greater dissatisfaction was observed in those in academicians/both and in higher age group (>30 years).

Table 6: aMBI scores for SATISFACTION domain in the different sub-groups
aMBI: abbreviated Maslach Burnout Inventory

	N	Mean	95% C.I.	p	Mean difference	95% C.I. for difference
Gender						
Male	180	12.33	(11.88 to 12.78)	0.732	0.097	(-0.459 to 0.653)
Female	836	12.23	(11.99 to 12.47)	(Male Vs Female)		
Prefer not to mention	2	9.5	(-73.09 to 92.09)			
Professional type						
Hospital/Practice	784	11.86	(11.61 to 12.10)	<0.0001		
Academics	114	13.89	(13.52 to 14.25)			
Both	120	13.2	(12.55 to 13.85)			
Age group						
<=30 yrs.	614	12.02	(11.74 to 12.30)	0.012	-0.558	(-0.991 to -0.125)
>30 yrs.	404	12.58	(12.26 to 12.90)			
Experience						
<=5 yrs.	367	12.46	(12.09 to 12.82)	0.141	0.332	(-0.110 to 0.775)
>5 yrs.	651	12.12	(11.86 to 12.38)			

Table-7 shows the number (proportion) of responders with burnout in different sub-groups for the three domains (emotional exhaustion, depersonalization and personal accomplishment) and also in all the three domains of aMBI scale. Overall, burnout was observed in 9.1% (n=93), 9.2% (n=94), 31.5% (n=321) responders for emotional exhaustion, depersonalization and personal accomplishment domains respectively. Significant differences in the prevalence (proportion of responders) of burnout was seen in those with shorter duration of experience only for depersonalization domain (p<0.0001). Also, higher prevalence of burnout was observed in those with academicians for emotional exhaustion (p<0.0001), depersonalization (p=0.001) and personal accomplishment (p=0.006). For all other domains, there were no difference observed in different sub-groups (p>0.05).

Table 7: Presence of burnout (aMBI scale) in different sub-groups
aMBI: abbreviated Maslach Burnout Inventory

		Emotional exhaustion			Depersonalization			Personal accomplishment			All domains		
	N	No.	%	p	No.	%	p	No.	%	p	No.	%	p
Gender													
Male	180	10	5.60%		20	11.10%		62	34.40%		1	0.60%	
Female	836	82	9.80%	0.027	74	8.90%	0.575	258	30.90%	0.856	15	1.80%	0.472
Prefer not to mention	2	1	50.00%		0	0.00%		1	50.00%		0	0.00%	
Professional type													
Hospital/Practice	784	53	6.80%		61	7.80%		232	29.60%		8	1.00%	
Academics	114	12	10.50%	<0.0001	21	18.40%	0.001	38	33.30%	0.006	3	2.60%	0.022
Both	120	28	23.30%		12	10.00%		51	42.50%		5	4.20%	
Age (yrs.)													
<=30 yrs.	614	48	7.80%	0.072	63	10.30%	0.163	191	31.10%	0.719	14	2.30%	0.025
>30 yrs.	404	45	11.10%		31	7.70%		130	32.20%		2	0.50%	
Experience (yrs.)													
<=5 yrs.	367	38	10.40%	0.311	50	13.60%	<0.0001	128	34.90%	0.085	11	3.00%	0.006
>5 yrs.	651	55	8.40%		44	6.80%		193	29.60%		5	0.80%	
All responders													
Total	1018	93	9.10%		94	9.20%		321	31.50%		16	1.60%	

4. Discussion

Various scales in the past have been used to identify burnout such as Oldenburg Burnout Inventory (OLBI), Copenhagen Burnout Inventory (CBI), aMBI, and the Burnout Clinical Subtype Questionnaire (BCSQ). Out of these inventories, we decided to use the MBI for its high validity and the short time needed to complete the questionnaire [16]. The aMBI scale with different domains helped us to record the different components of burnout providing a wider picture.

This study was conducted to estimate the degree of professional burnout in nurses across Indian setting. The degree of burnout was surprisingly high with high scores for the emotional exhaustion and depersonalization components and low scores on the personal accomplishment and satisfaction components of the aMBI scale. Thus, all the four components of the aMBI scale indicated high levels of burnout across nurses in India.

Although many studies report findings of professional burnout in nurses across the globe, not much data is reported from India. Also, although many of these studies focused on nurses, but the studies were not always clear regarding which types of nursing personnel participated. Registered nurses (RNs) were the dominant focus [17-19]. Other

investigations considered licensed practical nurses (LPNs) and nursing aides [20, 21]; licensed nurses (e.g., RNs and LPNs) [22, 23]; RNs, aides, and clerical staff [24]; and generic assessments of nursing staff [25-27, 28]. Only few of these investigations considered the effect of stress and burnout among nurses on patient outcomes [29]. These studies examined burnout in relation to increased mortality, failure to rescue, and patient dissatisfaction. Staff working in long-term care (LTC) [30] and nursing homes were the focus of few studies. Interestingly, it is reported that in nursing homes staff experienced more stress when caring for patients with dementia. In addition, possible differences among types of nursing personnel were illustrated in various studies.

We observed burnout amongst nurses in all four domains of aMBI with highest burnout observed in the depersonalization domain and satisfaction domain. Also, we observed greater emotional exhaustion was observed in those in academicians / both academics and practice, in those with higher age group (>30 years) and those with shorter duration of experience (<=5 years). Other studies also report similar findings and our results are in agreement with them [24-17]. Surprisingly, we observed greater depersonalization was observed in those in academicians and in those with higher age group (>30 years). This could probably be due to emotional blunting associated with longer duration of service. There was greater dissatisfaction in terms of personal accomplishment observed in those nurses who were in hospital practice than those in academics. Also, the dissatisfaction in terms of personal accomplishment was higher in younger nurses (<=30 years). Although the prevalence of burnout is higher in other studies, we observed a higher prevalence of burnout for personal accomplishment domain as compared to other domains.

Our study had some limitations which include: i) skewed data collection since more responders were from western India as compared to other parts; ii) a larger sample with appropriate representation from states Chhattisgarh, Jammu, Kashmir and north eastern states could have provided further insights; and iii) more representation from practice setup cold have strengthened the study findings.

5. Conclusions

This study found a high prevalence of burnout among nurses. Burnout among nurses can be dealt with support from official bodies and organizations, by maintaining a good work-life balance, and obtaining an understanding from the patients of their problems.

6. Disclosures

Human subjects: Institutional Ethics Committee of D Y Patil Medical College, Navi Mumbai, Maharashtra, India issued approval dated 08th August 2019 (IEC Ref. 150/2019).

Animal subjects: This study did not involve animal subjects or tissue.

References

[1] Maslach C, Schaufeli WB, Leiter MP: Job burnout. Annual Review of Psychology. 2001, 52:397-422.
[2] Bera T, Mandal A, Bhattacharya S, Biswas NM, Ghosh A, Bera S: Burn out among medical students-a study across three medical colleges in eastern India. Ind Med Gaz. 2013, 2013:359.
[3] Guntupalli KK, Wachtel S, Mallampalli A, Surani S: Burnout in the intensive care unit professionals. Indian J Crit Care Med. 2014, 18:139-143.
[4] Shanafelt TD, Boone S, Tan L, et al.: Burnout and satisfaction with work-life balance among US physicians relative to the general US population. Arch Intern Med. 2012, 172:1377-1385. 10.1001/archinternmed.2012.3199
[5] Lee YY, Medford AR, Halim AS: Burnout in physicians. J R Coll Physicians Edinb. 2015, 45:104-107. 10.4997/JRCPE.2015.203
[6] Soler JK, Yaman H, Esteva M, et al.: Burnout in European family doctors: the EGPRN study. Fam Pract. 2008, 25:245-265. 10.1093/fampra/cmn038
[7] Suñer-Soler R, Grau-Martín A, Flichtentrei D, et al.: The consequences of burnout syndrome among healthcare professionals in Spain and Spanish speaking Latin American countries. Burnout Research. 2014, 1:82-89. 10.1016/j.burn.2014.07.004
[8] Amte R, Munta K, Gopal PB: Stress levels of critical care doctors in India: a national survey. Indian J Crit Care Med. 2015, 19:257-264. 10.4103/0972-5229.156464
[9] Abdallah T: Prevalence and predictors of burnout among palestinian social workers. Int Soc Work. 2009, 52:223-233. 10.1177/0020872808099732
[10] Clark HK, Murdock NL, Koetting K: Predicting burnout and career choice satisfaction in counseling psychology graduate students. Couns Psychol. 2009, 37:580-606. 10.1177/0011000008319985
[11] McManus IC, Keeling A, Paice E: Stress, burnout and doctors' attitudes to work are determined by personality and learning style: a twelve year longitudinal study of UK medical graduates. BMC Med. 2004, 2:29. 10.1186/1741-7015-2-29
[12] McManus IC, Jonvik H, Richards P, et al.: Vocation and avocation: leisure activities correlate with professional engagement, but not burnout, in a cross-sectional survey of UK doctors. BMC Med. 2011, 9:100. 10.1186/1741-7015-9-100
[13] McManus IC, Smithers E, Partridge P: Keeling A, Fleming: A levels and intelligence as predictors of medical careers in UK doctors: 20 year prospective study. BMJ. 2003, 327:139-42. 10.1136/bmj.327.7407.139
[14] McManus IC, Winder BC, Gordon D: The causal links between stress and burnout in a longitudinal study of UK doctors. Lancet. 2002, 359:2089-90. 10.1016/S0140-6736(02)08915-8
[15] Maslach C, Leiter MP: Early predictors of job burnout and engagement. J Appl Psychol. 2008, 93:498-512. 10.1037/0021-9010.93.3.498
[16] Koeske GF, Koeske RD: Construct validity of the Maslach Burnout Inventory: a critical review and reconceptualization. J Appl Behav Sci. 1989, 25:131-144. 10.1177/0021886389252004

[17] AbuAlRub RF: Job stress, job performance, and social support among hospital nurses. J NursScholarsh. 2004, 36:73-78.
[18] Allen J, Mellor D: Work context, personal control, and burnout amongst nurses. West J Nurs Res. 2002, 24:905-17.
[19] Aiken LH, Clarke SP, Sloane DM, et al.: Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. J Am Med Assoc. 2002, 288:1987-23. 10.1001/jama.288.16.1987
[20] Brodaty H, Draper B, Low LF: Nursing home staff attitudes towards residents with dementia: strain and satisfaction with work. J Adv Nurs. 2003, 44:583-90.
[21] Cohen M, Village J, Ostry AS, et al.: Workload as a determinant of staff injury in intermediate care. Internatl J Occ Env Health. 2004, 10:375-82.
[22] LeSergent CM, Haney CJ: Rural hospital nurse's stressors and coping strategies: a survey. Internatl J Nurs Studies. 2005, 42:315-24.
[23] Rowe MM, Sherlock H: Stress and verbal abuse in nursing: do burned out nurses eat their young?. J Nurs Manage. 2005, 13:242-8.
[24] Vahey DC, Aiken LH, Sloane DM, et al.: Nurse burnout and patient satisfaction. Med Care. 2004, 42(Suppl 2): II-57-66.
[25] Seago JA, Faucett J.: Job strain among registered nurses and other hospital workers. J Nurs Adm. 1997, 27:19-25.
[26] Demir A, Ulusoy M, Ulusoy MF: Investigation of factors influencing burnout levels in the professional and private lives of nurses. Internatl J Nurs Studies. 2003, 40:807-27.
[27] Gottlieb BH, Kelloway EK, Martin-Matthews A: Predictors of work-family conflict, stress, and job satisfaction among nurses. Can J Nurs Res. 1996, 28:99-117.
[28] Iskra-Golec I, Folkard S, Marek T, et al.: Health, well-being and burnout of ICU nurses on 12- and 8-h shifts. Work Stress. 1996, 10:99-117. 10.1080/02678379608256804
[29] Leiter MP, Harvie P, Frizzell C: The correspondence of patient satisfaction and nurse burnout. Soc Sci Med. 1998, 47:1611-7.
[30] Schaefer JA, Moos RH: Effects of work stressors and work climate on long-term care staff's job morale and functioning. Res Nurs Health. 1996, 19:152-61.

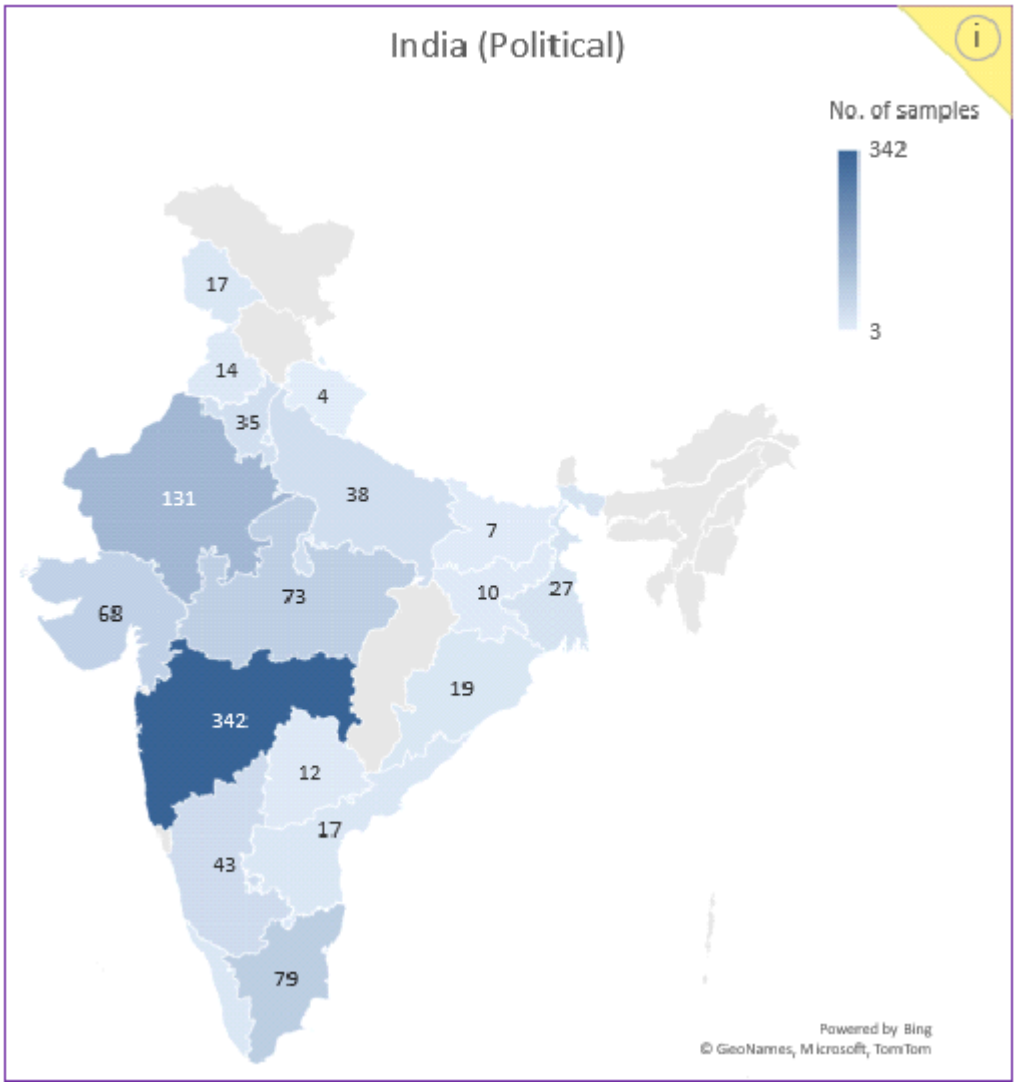

Figure 1: Geographical location of responders

Table 1: Profile of responders (n=1018)

	No.	*%*
Gender		
• Male	180	17.7%
• Female	836	82.1%
• Prefer not to mention	2	0.2%
Profession		
• Academics	784	77.0%
• Hospital/Practice	114	11.2%
• Both	120	11.8%
Age group		
• <=30 yrs.	614	60.3%
• >30 yrs.	404	39.7%
Experience		
• <=5 yrs.	367	36.1%
• >5 yrs.	651	63.9%

Table-2: aMBI scores (n=1018)

aMBI domains	Mean	Median	SD	Minimum	Maximum
Emotional exhaustion	9.51	9.00	5.06	0	21
Depersonalization	13.17	13.00	4.52	0	20
Personal Accomplishment	7.33	7.00	3.68	0	19
Satisfaction	12.24	12.00	3.46	1	21
Total score	42.26	43.00	10.55	1	79

Table 3: aMBI sub-scale scores in different sub-groups

		N	*Mean*	*95% C.I.*	*p*	*Mean difference*	*95% C.I. for difference*
Emotional exhaustion	**Gender**						
	• Male	180	9.30	(8.58 to 10.02)	0.552	-0.247	(-1.061 to 0.567)
	• Female	836	9.55	(9.20 to 9.89)	*(Male Vs Female)*		
	• Prefer not to mention	2	15.00	(-61.24 to 91.24)			
	Professional type						
	• Academics	784	8.75	(8.41 to 9.09)	<0.0001		
	• Hospital/Practice	114	11.98	(11.27 to 12.69)			
	• Both	120	12.16	(11.12 to 13.20)			
	Age group						
	• <=30 yrs.	614	9.03	(8.63 to 9.43)	<0.0001	-1.225	(-1.856 to -0.593)
	• >30 yrs.	404	10.25	(9.77 to 10.74)			
	Experience						
	• <=5 yrs.	367	10.10	(9.57 to 10.63)	0.005	0.918	(0.273 to 1.563)
	• >5 yrs.	651	9.18	(8.80 to 9.57)			
Depersonalization	**Gender**		Mean				
	• Male	180	13.39	(12.74 to 14.03)	0.479	0.263	(-0.466 to 0.992)
	• Female	836	13.13	(12.82 to 13.43)	*(Male Vs Female)*		
	• Prefer not to mention	2	13.00	(-12.41 to 38.41)			
	Professional type						
	• Academics	784	12.69	(12.37 to 13.01)	<0.0001		
	• Hospital/Practice	114	16.14	(15.57 to 16.71)			
	• Both	120	13.49	(12.70 to 14.29)			
	Age group						
	• <=30 yrs.	614	12.51	(12.15 to 12.87)	<0.0001	-1.673	(-2.231 to -1.114)
	• >30 yrs.	404	14.18	(13.76 to 14.60)			
	Experience						
	• <=5 yrs.	367	13.41	(12.94 to 13.87)	0.215	0.366	(-0.212 to 0.944)
	• >5 yrs.	651	13.04	(12.69 to 13.39)			
		N	***Mean***	***95% C.I.***	***p***	***Mean difference***	***95% C.I. for difference***
Personal Accomplishment	**Gender**						
	• Male	180	7.14	(6.63 to 7.66)	0.454	-0.226	(-0.820 to 0.367)
	• Female	836	7.37	(7.12 to 7.62)	*(Male Vs Female)*		
	• Prefer not to mention	2	5.50	(-26.27 to 37.27)			
	Professional type						
	• Academics	784	7.49	(7.23 to 7.76)	0.003		

	• Hospital/Practice	114	7.31	(6.75 to 7.87)			
	• Both	120	6.26	(5.59 to 6.93)			
	Age group						
	• <=30 yrs.	614	7.55	(7.26 to 7.83)	0.019	0.551	(0.089 to 1.012)
	• >30 yrs.	404	7.00	(6.62 to 7.37)			
	Experience						
	• <=5 yrs.	367	7.32	(6.94 to 7.69)	0.943	-0.017	(-0.489 to 0.454)
	• >5 yrs.	651	7.33	(7.05 to 7.62)			
		N	***Mean***	***95% C.I.***	***p***	***Mean difference***	***95% C.I. for difference***
Satisfaction	**Gender**						
	• Male	180	12.33	(11.88 to 12.78)	0.732	0.097	(-0.459 to 0.653)
	• Female	836	12.23	(11.99 to 12.47)	*(Male Vs Female)*		
	• Prefer not to mention	2	9.50	(-73.09 to 92.09)			
	Professional type						
	• Academics	784	11.86	(11.61 to 12.10)	<0.0001		
	• Hospital/Practice	114	13.89	(13.52 to 14.25)			
	• Both	120	13.20	(12.55 to 13.85)			
	Age group						
	• <=30 yrs.	614	12.02	(11.74 to 12.30)	0.012	-0.558	(-0.991 to -0.125)
	• >30 yrs.	404	12.58	(12.26 to 12.90)			
	Experience						
	• <=5 yrs.	367	12.46	(12.09 to 12.82)	0.141	0.332	(-0.110 to 0.775)
	• >5 yrs.	651	12.12	(11.86 to 12.38)			

Table 4: Presence of burnout (aMBI scale) in different sub-groups

		Emotional exhaustion			Depersonalization			Personal accomplishment			All domains		
	N	No.	%	p	No.	%	p	No.	%	p	No.	%	p
Gender													
Male	180	10	5.6%	0.027	20	11.1%	0.575	62	34.4%	0.856	1	0.6%	0.472
Female	836	82	9.8%		74	8.9%		258	30.9%		15	1.8%	
Prefer not to mention	2	1	50.0%		0	0.0%		1	50.0%		0	0.0%	
Professional type													
Academics	784	53	6.8%	<0.0001	61	7.8%	0.001	232	29.6%	0.006	8	1.0%	0.022
Hospital/Practice	114	12	10.5%		21	18.4%		38	33.3%		3	2.6%	
Both	120	28	23.3%		12	10.0%		51	42.5%		5	4.2%	
Age (yrs.)													
<=30 yrs.	614	48	7.8%	0.072	63	10.3%	0.163	191	31.1%	0.719	14	2.3%	0.025
>30 yrs.	404	45	11.1%		31	7.7%		130	32.2%		2	0.5%	
Experience (yrs.)													
<=5 yrs.	367	38	10.4%	0.311	50	13.6%	<0.0001	128	34.9%	0.085	11	3.0%	0.006
>5 yrs.	651	55	8.4%		44	6.8%		193	29.6%		5	0.8%	
All responders													
Total	**1018**	**93**	**9.1%**		**94**	**9.2%**		**321**	**31.5%**		**16**	**1.6%**	