



Original Article

Assessment of stress and burnout among nurses – A descriptive study

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ABSTRACT

Objectives: To assess the level of stress and burnout among nurses and its association with demographic variables among nurses.

Material and Methods: A non-experimental descriptive research design was undertaken to conduct the study among 110 nurses working in Aarupadai Veedu Medical College and Hospital at Puducherry using a convenient sampling technique. Data was collected using the Perceived stress scale and Maslach Burnout Inventory (MBI).

Results: The study findings revealed that demographic variables like age ($p = 0.0001$) had a statistically significant association with the level of stress among nurses.

Conclusion: The study concluded that the majority of the nurses had moderate levels of stress and low levels of burnout.

Keywords: Stress, Burnout, Staff Nurse

INTRODUCTION

Stress is the sensation of emotional or physical strain, which can arise from various situations or thoughts that provoke feelings of frustration, anger or nervousness.^[1] It manifests as your body's response to challenges or demands placed upon it.^[2] Brief periods of stress can have positive effects, aiding in situations like avoiding danger or meeting deadlines.^[3] However, prolonged stress can negatively impact your health.^[4,5] The concept of burnout was first coined by Freudenberg in 1974, noting a decline in motivation and commitment among volunteers.^[6] Burnout has since been recognised as a medical condition in the 11th revision of the International Classification of Diseases (ICD-11). As per the ICD-11, burnout is defined as a syndrome stemming from prolonged workplace stress that hasn't been effectively addressed or managed.^[7,8]

In India, approximately 48.4% of nurses experience work-related stress, indicating a significant level of stress within this profession.^[9,10] Among respondents, burnout was found to be prevalent in 9.1% across the domains of emotional exhaustion, depersonalisation, and personal accomplishment, indicating varying levels of strain in each area.^[11] The levels of stress among nurses ranged from 34.7% to 93% in various other countries, indicating significant variability in the experiences of nurses worldwide.^[12,13] Therefore, the researcher initiated this study to evaluate the extent of stress and burnout among nurses, as well as to investigate the correlation between stress levels and demographic variables.

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MATERIAL AND METHODS

A descriptive research design without experimentation was employed to conduct a study involving 110 nurses employed at Aarupadai Veedu Medical College and Hospital in Puducherry, utilising a convenient sampling method. Data collection was carried out using the Perceived Stress Scale and the Maslach Burnout Inventory (MBI).

The sample size was determined through a combination of previous study findings and Power Analysis. According to calculations, 96 participants were initially deemed necessary. Factoring in a 5% dropout rate, the final sample was rounded to 101, then further rounded up to 110. Alternatively, it could have been rounded to a maximum of 105 or 110. The questionnaire consisted of two sections: one addressing demographic variables and the other focusing on stress measurement.

The demographic variables encompassed in the study comprised the following: name, age, gender, address, residential area, educational attainment, religion, marital status, family type, socio-economic status, workplace, monthly income, total work experience, recreational activities and health status.

The Perceived Stress Scale comprises 10 items aimed at evaluating the degree of stress experienced. Meanwhile, the Maslach Burnout Inventory (MBI) was utilised to assess the risk of burnout, examining three key components: exhaustion, depersonalisation, and personal achievement.

The study received approval from the Institutional Ethical Committee (VMCNPDY/IEC2023/109). Data collection spanned a period of 7 days. The investigators introduced themselves and provided a detailed explanation of the study's purpose. Following consent from each participant, data was gathered using the Perceived Stress Scale and MBI.

DATA ANALYSIS

The collected data were analysed employing both descriptive and inferential statistical methods. The socio-demographic profile of the nurses was examined through frequency and percentage distributions. The evaluation of stress and burnout levels among nurses involved analysing frequency, percentage, mean, median and standard deviation. Associations between socio-demographic profiles and stress/burnout levels were explored using the Chi-square test.

RESULTS

Demographic Variables

In the demographic profile, the majority of nurses, 61 (55.5%), fell within the age range of 22–30 years. Female nurses constituted the majority, with 89 (80.9%) participants. Regarding residential location, 54 (49.1%) nurses resided in rural areas. The religious affiliation predominantly consisted

of Hindus, with 101 (91.8%) respondents identifying as such. Among the participants, 67 (60.9%) were married, while 80 (72.7%) belonged to nuclear families. Additionally, 82 (74.5%) nurses were categorised as above the poverty line. Engaging in music as a recreational activity was prevalent among 81 (73.6%) participants. Finally, the vast majority reported good health, with 109 (99.1%) nurses indicating so [Table 1].

In assessing the stress level among nurses, the majority, 96 (87.2%), reported a moderate level of stress, while 11 (10%) indicated a low level, and 3 (2.73%) experienced a high level of stress [Table 2]. With regard the burnout domain, 47 (42.83%) nurses experienced low burnout, while 38 (34.55%) reported moderate burnout and 25 (22.73%) exhibited high burnout levels. Concerning depersonalisation, the majority, 83 (75.46%) nurses, displayed high burnout, followed by 19 (17.27%) with moderate burnout and 8 (7.27%) with low

Table 1: Frequency and percentage distribution of demographic variables of the nurses.

Demographic variables	No. (110)	%
Age		
22–30	61	55.5
30–40	47	42.7
40–50	2	1.8
Gender		
Male	21	19.1
Female	89	80.9
Area of living		
Rural	54	49.1
Urban	42	38.2
Semi-urban	14	12.7
Religion		
Hindu	101	91.8
Muslim	-	-
Christian	9	8.2
Others	-	-
Marital status		
Married	67	60.9
Unmarried	43	39.1
Type of family		
Nuclear	80	72.7
Joint	30	27.3
Socio-economic status		
Above poverty line	82	74.5
Below poverty line	28	25.5
Recreational activity		
Reading books	17	15.5
Playing games	12	10.9
Listening music	81	73.6
Health status		
Healthy	109	99.1
Unhealthy	1	0.9

Table 2: Frequency and percentage distribution of level of stress among the nurses.

Level of stress	No (110)	%
Low (1–13)	11	10.0
Moderate (14–26)	96	87.27
High (27–40)	3	2.73

burnout. However, in terms of personal achievement, all 110 (100%) nurses reported moderate burnout levels. Overall, the analysis revealed that 101 (91.8%) nurses experienced low burnout, while 9 (8.2%) exhibited high burnout levels [Table 3].

The participant's age displayed a notable relationship with nurses' stress levels ($\chi^2 = 23.824$, $p = 0.0001$) at a significance level of $p < 0.05$. However, no similar significant associations were observed for other demographic variables regarding stress levels among nurses. Additionally, none of the demographic variables influenced nurses' levels of burnout.

DISCUSSION

The mean stress level was 19.37 ± 4.10 , as depicted in Table 4. In our study we found only 2.37% of nurses experienced a high level of stress. These findings align with those of the study conducted previously.^[14–16]

Table 3: Frequency and percentage distribution of domain-wise level of burnout among the nurses.

N = 110

Domain wise	Level of burnout	F	%
Burnout	Low (≤ 17)	47	42.73
	Moderate (18–29)	38	34.55
	High (≥ 30)	25	22.73
Depersonalisation	Low (≤ 5)	8	7.27
	Moderate (6–11)	19	17.27
	High (≥ 12)	83	75.46
Personal achievement	Low (≤ 33)	0	0
	Moderate (34–39)	110	100.0
	High (≥ 40)	0	0
Overall burnout	Low	101	91.8
	High	9	8.2

Table 4: Assessment of mean and standards deviation of stress and domain-wise burnout among the nurses.

N = 110

Variables	Maximum score	Mean	SD
Stress	40	19.37	4.10
Burnout	42	20.17	10.69
Depersonalisation	42	17.08	8.44
Personal achievement	48	30.27	11.27

SD: Standard deviation.

The mean score for the level of burnout was 20.17 ± 10.69 . In evaluating burnout among nurses, 47 (42.7%) exhibited low burnout, 38 (34.6%) had moderate burnout and 25 (22.7%) experienced high burnout. Specifically concerning depersonalisation, a majority of 83 (75.4%) reported high burnout, while 19 (17.2%) had moderate burnout and 8 (7.2%) had low burnout. However, in terms of personal achievement, all 110 (100%) nurses reported moderate burnout. The overall burnout assessment indicated that 101 (91.8%) nurses had low burnout, with 9 (8.2%) experiencing high burnout levels. The mean scores for depersonalisation and personal achievement were 17.08 ± 8.44 and 30.27 ± 11.27 , respectively. Comparable results were reported by various researchers.^[16–18]

The study's findings indicated that the age of the participants had a statistically significant association with the level of stress among nurses at a significance level of $p < 0.05$. However, other demographic characteristics were not significantly associated with the stress levels among nurses. Likewise, concerning the level of burnout, the study found that demographic variables did not show any statistically significant association with burnout among nurses, which was similar to previous study findings.^[19–22] Descriptive and inferential statistics were utilised in the study, with IBM SPSS Statistics 20.0 employed for analysis. Furthermore, linear regression analysis revealed that job-related factors and interpersonal relations significantly influenced stress levels among nursing staff.

IMPLICATIONS OF THE STUDY

The study unveiled heightened stress levels among nurses, indicating a pressing need for proactive measures. Nurse educators and administrators can play a pivotal role by arranging numerous awareness programs tailored for nurses. Implementation of stress management techniques and the development of an informative guide sheet aimed at alleviating stress levels are imperative for nurses working within the hospital environment.

LIMITATIONS

The study was conducted exclusively within the confines of Aarupadai Veedu Medical College and Hospital in Puducherry, thereby limiting the generalisability of its findings to this specific setting. Furthermore, the study was conducted with a restricted study cohort of 110 participants.

CONCLUSION

The research results revealed a statistically notable link between nurses' age and their stress levels, whereas no similar

correlation was observed for other demographic factors. Additionally, most nurses encountered a moderate stress level and a minimal level of burnout.

Ethical approval

Ethical Approval was obtained from Institutional Ethical Committee (Human Studies) – Vinayaka Mission's College of Nursing, Puducherry (VMCNPDY/IEC2023/109).

Declaration of patient consent

The authors certify that they have obtained all appropriate participants consent.

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Nil.

Conflicts of interest

Dr. Sharadha Ramesh is on the Editorial Board of the Journal

Use of artificial intelligence (AI)-assisted technology for manuscript preparation:

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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