

Original Research Article

Stress among doctors doing residency: a cross sectional study at a tertiary care hospital in Vijayapura, Karnataka

Laxmi Tellur*, M. C. Yadavannavar, Vijaya Sorgenvi, Shailaja Patil

Department of Community Medicine, BLDE (DU), Shri. B. M. Patil Medical College, Hospital and Research Centre, Vijayapura, Karnataka, India

Received: 14 January 2022

Accepted: 15 February 2022

***Correspondence:**

Dr. Laxmi Tellur,

E-mail: laxmi.tellur@bldedu.ac.in

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Young budding doctors doing residency is a very stressful period. There is growing concern about stress in doctors working in hospitals. So, this study was carried out to study the proportion of stress and associated factors influencing stress among resident doctors at a tertiary care hospital in Vijayapura, Karnataka.

Methods: A cross-sectional study was conducted in BLDE (Deemed to be University), Shri B. M. Patil medical college, hospital and research centre, Vijayapura from July 2019 to December 2019. The perceived stress scale, 10-item self report questionnaire was used to assess the level of stress. analysis was done using SPSS 16.

Results: A total of 207 post graduate residents were interviewed.90% of postgraduate students responded and all were above the age of 24 years. 52.7% were males and 47.3% were females. Of all postgraduates 91.3% were Hindu, 5.3% were Muslim by religion. Our study has revealed more stress among 2nd year resident doctors.

Conclusions: Fixed duty hours, counselling and social support can help in improving the physical and mental well-being of these young doctors, who are an integral part of the health care system. Stress should be evaluated to get better future health consultants.

Keywords: Stress, Postgraduate residents, Tertiary care hospital, Perceived stress scale

INTRODUCTION

A United Nations report labeled stress as “the 20th century disease”. World health organization called it a “worldwide epidemic”.¹ Stress and burnout are common among healthcare professionals, including doctors and nurses. Work-related stress rates among the general working population averages to 18%, while among doctors the rate is reported to be around 28%.² Work has always been a major part of a person’s life and a common source of stress for many people.³ Stress is subjective phenomenon that results from an event that produces physical or psychological pain and is defined as state of mental or emotional strain or tension resulting from adverse conditions.⁴ Extended periods of stress can cause destructive changes in the body such as depression, heart disease, cancer, stroke, ulcers, back pain, headaches,

raised blood pressure, indigestion, and a variety of other problems. In addition lack of job security, family and personal problems aggravate the stress. These residents have a very little experience, but they are expected to be proficient clinicians, educationists, researchers, and administrators.

Due to the nature of their professions, the mental health of doctors is not only of concern, but also is of concern to the greater society served by them. The growing debate regarding long working hours of postgraduate trainees has been receiving considerable attention recently.⁵ This greater workload contributes to increasing stress and decreases the overall performance and the quality of the life of the affected individuals. The workload of a tertiary care teaching hospital is tremendous.

The beginning of the post graduate (PG) residency is a very stressful period. Young budding doctors begin to confront with the difficulties and responsibility of medical practice. These residents are often invariably assigned duties exceeding 24 hours at a time. In the initial first year of residency, residents sometimes are on call for more than a week at a stretch and are under great stress due to sleep deprivation. Combined with other factors such as less stipend, abuses faced at the workplace often affects their mental health and also has a profound impact while dealing with patients. The last few decades are witnessing an era of increased specialization among doctors along with an increased demand for specialized medical care globally.^{1,6} The post graduate residents play a crucial role in the medical care delivery of the multispecialty hospitals attached to the teaching medical colleges. Hence we conducted this study in tertiary care with following objectives: to study the proportion of stress among resident doctors at a tertiary care hospital in Vijayapura, Karnataka and to study associated factors influencing stress among resident doctors at a tertiary care hospital in Vijayapura, Karnataka.

METHODS

A cross-sectional study was carried out among all postgraduates in BLDE (Deemed to be University), Shri B. M. Patil medical college, hospital & research centre, Vijayapura. The duration of the study was 6 months (1st July 2019 to December 2019). All the post graduates who were willing to participate were included in the study. Those who were not willing to participate were excluded from study. After taking their informed consent a total of 207 postgraduate students out of 218 were interviewed using a pre-designed, pre-tested questionnaire.

Stress assessment

Perceived stress scale (PSS), 10-item self-report questionnaire was used to assess the level of stress. The perceived stress scale (10 points) was used to assess the stress among residents. PSS-10 scores are obtained by reversing the scores on the four positive items, e.g., 0=4, 1=3, 2=2, etc. and then summing across all 10 items. Items 4, 5, 7, and 8 are the positively stated items. Scores can range from 0 to 40, with higher scores indicating greater stress. The PSS is a 10-item self-report questionnaire that measures person’s evaluation of the stressfulness of the situations in the past month of their lives. Information about socio-demographic factors and factors influencing stress were also asked.

Sample size

With prevalence of psychological morbidity of stress among resident doctors 25.7% at 95% level of significance and at 5% absolute error, sample size worked out is 207 using the formula:

$$n = Z^2 pq/d^2$$

Statistical methods

Data was tabulated in Excel sheet and was analyzed using SPSS 16 and results are presented using tables, diagrams and percentages. Chi-Square test is used to find association and difference between the variables.

RESULTS

A total of 207 post graduate residents were interviewed. 90% of postgraduate students responded. All postgraduate residents were above the age of 24 years. There were 52.7% males and 47.3% females (Figure 1). Among all postgraduate residents 91.3% were Hindu, 5.3% were Muslim by religion, 32.4% of residents were married and 67.6% were unmarried (Table 1).

Table 1: Socio-demographic features of postgraduate resident doctors.

Variables	N	%	
Gender	Hindu	189	91.3
	Muslim	11	5.3
	Others	7	3.4
Marital status	Married	67	32.4
	Unmarried	140	67.6

The risk factors like sleep duration, habits, and easy fatigability, dyspepsia & duty hours per day contribute to stress. About 54.1% residents had less than 6 hours of sleep, 71% were having symptom of easy fatigability and 35.7% had dyspepsia. 71.5% residents had 9-16 hours of duty per day (Table 2).

Table 2: Risk factors for stress in resident doctors.

Risk factors for stress	N	%	
Sleep duration (hours)	<6	112	54.1
	>6	94	45.9
Habits	Tobacco	9	4.3
	Smoking	9	4.3
	Alcohol	2	1.0
	No habits	187	90.3
Easy fatigability	Yes	47	71.0
	No	60	29.0
Dyspepsia	Yes	74	35.7
	No	133	64.3
Duty (hours/day)	≤8	56	27.1
	9-16	148	71.5
	≥17	3	1.4

The risk factors like domicile, year of study in PG, sleep duration, fatigue, dyspepsia, habits & duty hours per day play major role in contributing to the stress and associated with stress among resident doctors. (Table 1) shows the

socio-demographic features of postgraduate resident doctors. Among all postgraduate residents 91.3% were Hindu, 5.3% were Muslim by religion, 32.4% of residents were married and 67.6% were unmarried. (Table 2) shows the risk factors associated with stress among resident doctors. The risk factors like sleep duration, habits, and easy fatigability, dyspepsia & duty hours per

day contribute to stress. About 54.1% residents had less than 6 hours of sleep, 71% were having symptom of easy fatigability and 35.7% had dyspepsia. 71.5% residents had 9-16 hours of duty per day. (Table 3) shows the association of stress with the risk factors among resident doctors.

Table 3: Association of stress.

Association of stress		Low stress (≤13) N (%)	Moderate stress (14-26) N (%)	High stress (≥27) N (%)	Total	P value
Domicile	Urban	34 (18)	117 (62)	38 (20)	189	0.005*
	Rural	1 (6.2)	15 (93.8)	Nil	16	
Year of PG	1st	21 (20.1)	69 (66.3)	14 (13.4)	104	0.05*
	2nd	5 (7.9)	40 (63.5)	18 (28.5)	63	
	3rd	9 (22.5)	23 (57.5)	8 (20)	40	
Sleep (hours)	<6	13 (11.6)	72 (64.2)	27 (24.1)	112	0.03
	>6	22 (23.4)	59 (62.7)	13 (13.8)	95	
Fatigue	Yes	18 (12.2)	90 (61.2)	39 (26.5)	147	0.01
	No	17 (28.3)	42 (70)	1 (1.6)	60	
Dyspepsia	Yes	2 (2.7)	51 (68.9)	21 (28.3)	74	0.01
	No	33 (28.4)	81 (60.9)	19 (14.2)	133	
Habits	Tobacco	5 (55.5)	3 (33.3)	1 (11.1)	9	0.01
	Smoking	3 (33.3)	2 (22.2)	4 (44.4)	9	
	Alcohol	Nil	2 (100)	Nil	2	
	No habits	27 (14.4)	125 (66.8)	35 (18.7)	187	
Duty (hour)	<8	7 (12.5)	40 (71.4)	9 (16)	56	0.006*
	9-16	28 (18.9)	92 (62.1)	28 (18.9)	148	
	>17	Nil	Nil	3 (100)	3	

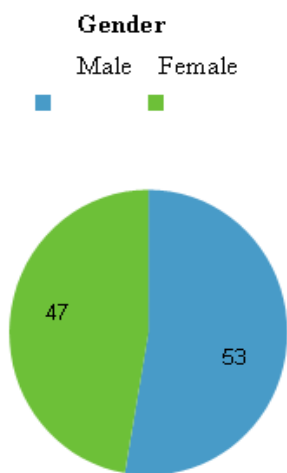


Figure 1: Distribution of postgraduate residents according to gender.

The risk factors like domicile, year of study in PG, sleep duration, fatigue, dyspepsia, habits & duty hours per day play major role in contributing to the stress. (Figure 1) shows distribution of postgraduate residents according to gender. 52.7% were males and 47.3% were females. (Figure 2) shows the division of perceived stress scale, where low stress is 14.4%, moderate stress is 73.4% &

high stress is 12.2% among the residents. Our study has revealed stress among 2nd year resident doctors at a tertiary care hospital.

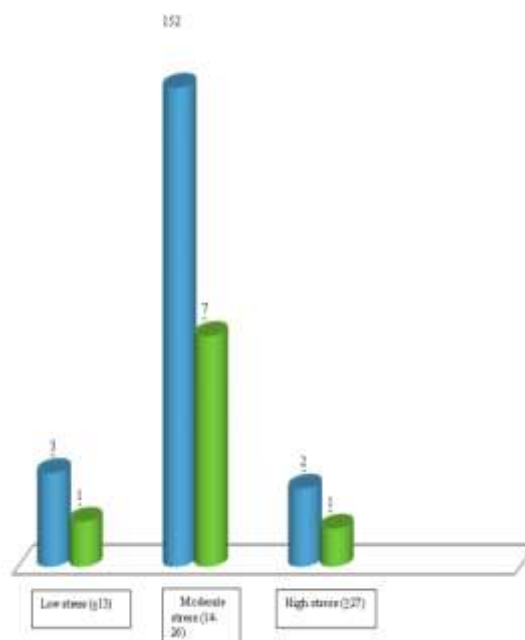


Figure 2: Perceived stress scale division.

DISCUSSION

In our study out of 207 study subjects majority (80%) were in 24-30 age groups and more stress levels seen in them which might be due to adjustment to the new environment, work stress, which is similar to the study by Saini et al where it was 69% of residents were in 26-30 years of age group.⁵ In our study high stress was found in 12.2% and moderate stress in 73.4% of resident doctors. In a similar study by Sahasrabuddhi et al in tertiary care hospital Mumbai the overall prevalence rate of stress among resident doctors was found to be 37.3%, Saini et al used DASS scale, in a tertiary care hospital, Delhi found that 32.8% resident were having stress. Pinto in their study reported 80% prevalence of stress among residents and consultants in Goa Medical College.⁵⁻⁷ Cohen et al reported a stress prevalence of 34% in their study among resident doctors in Canada.⁸ In our study stress is significantly associated with second year of post graduation than first and third year, because of burden of ward work and the responsibility of investigations of all patients. In our study high stress of 13.4% and 28.5% in 1st year and 2nd year residents was found respectively. Moderate stress of 66.3% and 63.5% in 1st year and 2nd year residents was found respectively and is statistically significant. A study by Bansal et al showed that maximum stress was reported by the first year residents 77.3% followed by 52.1% among the second year and 58.31% among the third year students respectively.⁹ In our study when compared to others, there is difference in the tools used to assess the stress, which is the reason for varied prevalence of stress. Also, the subjective responses obtained from residents vary when the questionnaire was given. Also the geographical settings and the working atmosphere of the resident doctors were totally different in all these studies. In our study 32.4% (67) were married whereas 67.68% (140) were unmarried. In study by Gobbur et al, 66.42% (163) were unmarried whereas 33.58% (83) were married which is similar to our study.¹ In our study moderate stress was found among residents from rural place when compared to residents from urban. In our study postgraduate residents had high stress of 24.1% and moderate amount of stress 64.2%, who sleep less than 6 hours and it's found statistically not significant whereas Sahasrabuddhi et al in their study resident doctors who were sleeping for more than 6 hours per day as compared to resident doctors who were sleeping less than 6 hours per day stress was 29.4% and it's found statistically highly significant.⁶

Our study showed the more about of moderate stress levels 40 (71.42%) in post graduates who worked for 8 hours per day as compared to others who worked for 9-16 hours per day 92(62.1%) and it's statistically significant. Kashi PM et al showed that as the duration of work increases the stress level.¹⁰ Our results also demonstrated moderate values for depressive symptoms like fatigue, easy fatigability, dyspepsia among the residents, which are similar to study done by Bernburg M where the study revealed symptoms like depression, perceived

occupational distress and work ability among the residents.¹¹

CONCLUSION

Stress is one of the major growing mental problems among highly educated health professional and it should not be ignored as it can cause many other health issues. Fixed duty hours, counselling and social support can help in improving the physical and mental well-being of these young doctors, who are an integral part of the health care system. Stress should be evaluated to get better future health consultants.

ACKNOWLEDGEMENTS

The authors are very grateful to all the post graduates who participated in the study

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

- Gobbur SB, Nigudgi SR, Reddy S. Prevalence of stress among post graduate doctors at Mahadevappa Rampure medical college Kalaburagi, Karnataka. *Int J Community Med Public Health*. 2016;3:576-80.
- Govender I, Mutunzi E, Okonta HI. Stress among medical doctors working in public hospitals of the Ngaka Modiri Molema district (Mafikeng health region), North West province, South Africa. *South Afr J Psychiat*. 2012;18(2):42-6.
- Hussein OM, Zainal NZ, Latif MA. Prevalence of Stress among International Post- graduate Doctors at the University Malaya Medical Centre (UMMC), Kuala Lumpur. *J Clin Diagn Res*. 2012;6(5):859-62.
- Monsef NA, Al Hajaj KE, Al Basti AK, Al Marzouqi EA, Al Faisal W, Hussein H, et al. Perceived Depression, Anxiety and Stress Among Dubai Health Authority Residents, Dubai, UAE. *Am J Psychol Cog Sci*. 2015;1(3):75-82.
- Saini NK, Agarwal S, Bhasin KS, Bhatia SM, Sharma KA. Prevalence of Stress Among Resident Doctors Working in Medical Colleges of Delhi. *Indian J Public Health*. 2010;54(4):199-223.
- Sahasrabuddhe GA, Suryawanshi RS, Bhandari S. Stress among doctors doing residency: A cross-sectional study at a tertiary care hospital in the city of Mumbai. *Nat J Commu Med*. 2015;6(1):21-4.
- Nair P. Most young GMC doctors are stressed. Available at: <http://www.timesofindia.indiatimes.com/articles/show/4412126.cms>. Accessed on 20 September 2021.
- Cohen JS, Patten S. Well-being in residency training: A survey examining resident physician satisfaction both within and outside of residency

- training and mental health in Alberta. *BMC Med Edu*. 2005;5:21.
9. Bansal RK, Bharodiya P, Jain K, Godhania K, Hirapara P, Pawar AB, et al. Stress Profile of Post Graduate Medical Residents in Western India. *Nat J Commu Med*. 2010;1(1):55-6.
 10. Kasi PM, Khawar T, Khan FH, Kiani JG, Khan UZ, Khan HM, et al. Studying the association between postgraduate Trainees' work hours, stress and the use of maladaptive coping strategies. *J Ayub Med Coll Abbottabad*. 2007;19(3):37-41.
 11. Bernburg M, Vitzthum K, Groneberg DA. Physicians' occupational stress, depressive

symptoms and work ability in relation to their working environment: a cross-sectional study of differences among medical residents with various specialties working in German hospitals. *BMJ*. 2016;6:e011369.

Cite this article as: Tellur L, Yadavannavar MC, Sorganvi V, Patil S. Stress among doctors doing residency: a cross sectional study at a tertiary care hospital in Vijayapura, Karnataka. *Int J Community Med Public Health* 2022;9:1505-9.