

Perceived stress factors among resident doctors in a Nigerian teaching hospital

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Summary

Aim:- The study was aimed at identifying psychological factors that are perceived stressful by resident doctors at the University of Ilorin Teaching Hospital.

Method:- A self-administered questionnaire was given to 84 eligible residents. Only 57 (67.9%) properly completed and returned the questionnaire. The questionnaire sought information on sociodemographic variables, factors perceived as stressful and the degree of perception.

Result:- High patient load, poor work environment, distant accommodation and lack of recreational facilities within the hospital premises were identified as stressors. Age, gender and number of dependants had no correlation with perception of stress.

Conclusion:- It was concluded that stakeholders in post-graduate medical education should, in keeping with their resources and level of development, employ more residents, improve work environment and provide accommodation and recreational facilities. These will go a long way in improving the quality of residents trained and the services rendered.

Keywords: *Perceived stress, Residency training, Nigeria.*

Résumé

But:- L'objet de cette étude est d'identifier des facteurs psychologiques que les médecins résident considèrent stressant au centre hospitalier universitaire d'Ilorin.

Méthode:- Un questionnaire auto-administré était donné aux 84 résidents éligibles. Seulement 57 soit 67,9% ont correctement rempli et rendu le questionnaire. Le questionnaire demande des informations sur des sociodémographiques variables, des facteurs considérés stressants et le degré de cette perception.

Résultats:- Le grand nombre de patients, le mauvais milieu du travail, logement bien loin et pénurie de loisirs dans l'établissement hospitalier ont été identifiés comme des stressors. Âge, genre et nombre des dépendants n'avaient aucune corrélation avec la perception du stress.

Conclusion:- On arrive à la conclusion que les parties prenantes dans l'éducation médicale des études de troisième cycle devront, conformément à leurs ressources et niveau de développement, employer davantage des résidents, améliorer le milieu du travail, et donner le logement et des loisirs. Ils vont beaucoup améliorer la qualité des résidents formés et des services rendus.

Introduction

Stress reactions are physiological or psychological reactions to events or situations.¹ Some degree of stress in itself is not harmful. A little bit of stress is even necessary for

motivation.^{1,2} However, perceived significant level of stress hinders optimal performance as it affects concentration and attention thereby limiting information registration and recall (poor memory). Medical profession is a discipline where adequate concentration and attention is ever necessary. Several researchers have therefore made efforts to identify these stressors so as to get the optimum skill and services needed from medical personnel.^{3,4,5} Some studies have identified higher degree of psychiatric 'caseness' among certain groups of medical practitioners. In a study aimed at assessing the psychological health and job satisfaction of General Practitioners (GPs) and medical house officers, 48% of GPs and 20% of house officers scored as cases of psychiatric illness.⁶ In another study, job stress, job satisfaction and mental well-being of GPs and practice nurses in North West region of England were assessed. GPs were found to have significantly greater pressure at work than practice nurses. The GPs also had significantly higher score on anxiety and depression scales than a British normative population.⁵ The above efforts aimed at understanding or identifying stress related factors among specialists is quite commendable. However, since residency is the speciality training phase in the medical profession, it will also be relevant to identify factors that may hamper optimal assimilation of skills in this important stage of skill acquisition. Ability to identify and ameliorate, if not completely remove these hindrances may go a long way in producing skillful specialists. This study therefore sets out to identify possible stressors that affect postgraduate medical trainees (residents) in a Nigerian Teaching Hospital and identify areas of possible improvement in the residency programme especially as perceived by the residents themselves.

The settings

The study was conducted at the University of Ilorin Teaching Hospital (UITH) Ilorin between May and June 2002. The Hospital is a second generation Teaching Hospital established on 2nd May, 1980. Currently, the hospital has a total bed space of 515 distributed as follows:

- i. General Hospital Wing, Ilorin with 304 beds;
- ii. Maternity Wing, Ilorin with 141 beds;
- iii. The Comprehensive Health Centre, Esie with 35 beds and
- iv. The Comprehensive Health Centre, Ihima with 35 beds.

The hospital trains residents in 15 specialities and sub-specialities. As at the time of the study, there were 138 residents distributed across 14 speciality areas (Table 2a). There were 9 Hospital Consultants and 71 Honorary Consultants.

Method

All consenting residents at the University of Ilorin Teach-

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ing Hospital, (UITH) Ilorin who have been in the programme for 2 years and above were to take part in the study. Each resident was given a questionnaire to complete. The questionnaire sought information in the areas of sociodemographic variables, specialty of training, years spent in residency, work related stress factors, family related stress factors, comments about the residency programme and suggested areas of improvement.

Data analysis

Data collected were fed into personal computer using computer software Epi Info version 6.02. Simple frequency tables were generated as well as cross tabulations (where necessary) to check for levels of significance. The level of significance was set at 5%.

Result

Of the 138 residents in UITH, Ilorin, 84 (60.9%) met the inclusion criteria, that is, were on ground during the study period, consented to participate in the study and have been in the programme for more than 2 years. Of those eligible to

Table 1 Sociodemographic characteristics of the respondents

| Variable | No of respondents | Percentages |
|------------------------------|-------------------|-------------|
| Age n = 57 | | |
| Range | 28 - 43 | |
| Mean | 33 | |
| S. D. | 3.1 | |
| Age group n = 57 | | |
| <35 | 47 | 82.5 |
| 35 - 50 | 10 | 17.5 |
| >50 | 0 | 0 |
| Gender n = 57 | | |
| Male | 52 | 91.2 |
| Female | 5 | 8.8 |
| Marital status n = 57 | | |
| Single | 15 | 26.3 |
| Married & living together | 41 | 71.9 |
| Living apart | 1 | 1.8 |
| Number of dependants | | |
| Range | 0-8 | |
| Mean | 3.7 | |
| S.D | 2.3 | |

Table 2a Distribution of residents by state of origin

| Variable | No of respondents | Percentages |
|------------------------|-------------------|-------------|
| N= 57 | | |
| State of origin | | |
| Kwara | 24 | 42.1 |
| Kogi | 3 | 5.3 |
| Ekiti | 3 | 5.3 |
| Ondo | 3 | 5.3 |
| Oyo | 3 | 5.3 |
| Ogun | 4 | 7.0 |
| Niger | 1 | 1.8 |
| Benue | 1 | 1.8 |
| Anambra | 2 | 3.5 |
| Osun | 8 | 14.0 |
| Imo | 1 | 1.8 |
| Edo | 2 | 3.5 |
| Akwa Ibom | 2 | 3.5 |
| Total | 57 | 100.2% |

Table 2b Distribution of residents by specialty and sub-specialty

| Specialty/sub-specialty | No of respondents | Percentages |
|----------------------------------|-------------------|-------------|
| N= 57 | | |
| Anaesthesia | 5 | 8.8 |
| Behavioural science (psychiatry) | 4 | 7.0 |
| Chemical pathology | 3 | 5.3 |
| Haematology | 2 | 3.5 |
| Microbiology | 3 | 5.3 |
| Pathology | 1 | 1.8 |
| Medicine | 5 | 8.8 |
| Surgery | 9 | 15.8 |
| Paediatrics | 7 | 12.3 |
| Epidemiology | 3 | 5.3 |
| General medical practice | 4 | 7.0 |
| Obstetrics & gynaecology | 6 | 10.5 |
| Ophthalmology | 1 | 1.8 |
| Otorhinolaryngology | 4 | 7.0 |
| Total | 57 | 100.2% |

Table 3 Perception of stress factors by residents

| Variable | Stressful | Not stressful | Don't know |
|-------------------------------------|-----------|---------------|------------|
| Work related factors | | | |
| Patient load n = 54 | 42(75) | 13(23.2) | 1(1.8) |
| Demand of job on social life n = 57 | 34(59.6) | 17(29.8) | 6(10.5) |
| Demand of job on family n = 38 | 7(17.5) | 30(75) | 1(2.4) |
| Environment related factors | | | |
| Ethnic factors n = 57 | 7(12.3) | 50(87.7) | |
| Work environment n = 57 | 50(87.7) | 7(12.3) | |
| Accommodation n = 55 | 40(72.7) | 15(27.3) | |
| Recreational facilities n = 57 | 17(29.8) | 34(59.6) | 6(10.5) |
| Overall perception n = 57 | 48(84.2) | 9(15.8) | |

% in row brackets

take part in the study, only 57(67.9%) completed and returned the questionnaire.

Sociodemographic variables

Fifty-seven resident doctors participated in the study. Their ages ranged from 28 to 43 years with a mean of 33 years and a standard deviation (S. D) of 3.1. Fifty-two (91.2%) residents were males, while 5(8.8%) were females. Forty-one (71.9%) were married and living together, one (1.8%) was married but living apart from the spouse, while 15(26.3%) were single (Table 1). The mean years spent in residency as at the time of study was 3.0 with a S. D. of 1.2.

Table 2a shows that more than half (56%) of the residents were from Kwara and the neighbouring States. Table 2b shows that a large percent of residents were in Surgery (15.8%), Paediatrics (12.3%), Obstetrics and Gynaecology (10.5%) and Medicine (8.8%). Microbiology and Pathology had the least number of residents with one (1.8%) each. Other specialties constitute the remaining 49%.

Stress factors in residency training

Table 3 shows some factors that were identified to constitute stressors among residents in this study. These include:

Table 4 Perception of stress by speciality

| Specialty | No of residents N = 57 | Not stressful n = 9 | Stressful n = 48 | X ^{2a} | P-value ^b |
|---------------|---------------------------|------------------------|---------------------|-----------------|----------------------|
| Anaesthesia | 5 | 0 | 5 | 6.4 | 0.0008* |
| Paediatrics | 7 | 0 | 7 | 10.3 | 0.0006* |
| Comm. med | 3 | 1 | 2 | 0.00 | 1.0000 |
| GMP | 4 | 1 | 3 | 0.5 | 0.5000 |
| O & G | 6 | 2 | 4 | 0.3 | 0.5700 |
| Ophthalmology | 1 | 0 | 1 | 0.0 | 1.0000 |
| ENT | 4 | 0 | 4 | 4.5 | 0.0300* |
| Chem. path. | 3 | 0 | 3 | 2.7 | 0.1000 |
| Haematology | 2 | 1 | 1 | 1.0 | 1.0000 |
| Microbiology | 3 | 1 | 2 | 0.0 | 1.0000 |
| Pathology | 1 | 1 | 0 | 0.0 | 1.0000 |
| Medicine | 5 | 0 | 5 | 6.4 | 0.0080 |
| Surgery | 9 | 0 | 9 | 14.2 | 0.0000* |
| Psychiatry | 4 | 2 | 2 | 0.5 | 0.4800 |

^aP-value (Fisher's 2-tailed)^bX² (Yates corrected X²)

* Statistical significance at 5%

Table 5 Correlates of stress with age, gender and number of dependants

| Variable | Stressful | Not stressful | Yates corrected x ^{2a} | p-value (Fisher's 2 tailed) |
|-----------------------------|-----------|---------------|---------------------------------|-----------------------------|
| Age | | | | |
| <35 years (n = 47) | 39(83) | 8(17) | 0.01 | 1.1 |
| 35-50years (n = 10) | 9(90) | 1(10) | | |
| Gender | | | | |
| Male (n= 52) | 44(85) | 8(15) | 0.14 | 1.0 |
| Female (n = 5) | 4(80) | 1(20) | | |
| Number of dependants | | | | |
| 0-4 (n = 34) | 28(82.4) | 6(17.6) | 0.01 | 0.7 |
| 5-8 (n = 23) | 20(87) | 3(13) | | |

% in row brackets

Patient load

Forty-two (75%) residents considered high patient load to be a major source of stress during residency training, 13 (23.2%) did not (Yates corrected $\chi^2 = 28.1$; $p < 0.001$), while 1 (1.8%) responded 'don't know.'

Social engagements

Significant proportion of residents, 59.9% as opposed to 29.8%, considered the programme stressful because they could not have sufficient time to attend social engagements e.g. wedding, birthday ceremonies. The remaining 6 (10.3%) residents responded 'don't know' to the same question ($\chi^2 = 31.42$; $df = 2$; $p < 0.001$).

Work environment

Poor work environment as typified by shared consulting room, non-functioning cooling system (air conditioners), lack of well stocked library and absence of affordable internet facilities was considered a major source of stress by 50 (87.7%) residents while the remaining 7 (12.3%) did not consider it a source of stress (Yates corrected $\chi^2 = 61.9$; $P < 0.001$).

Accommodation

Forty (72.7%) residents considered the location of their distant accommodation from the hospital a major source of stress while 15 (27.3%), did not (Yates corrected $\chi^2 = 21.0$; $P < 0.001$).

Recreational related factors

The absence of relaxation facilities e.g. staff club, sports and games facilities e.g. lawn tennis courts and basket ball courts, etc., within the hospital environment, were considered a source of stress by 34 (84.2%) as opposed to 17 (29.8%) residents who did not consider it a major source of stress (Yates corrected $\chi^2 = 31.4$; $P < 0.001$). The remaining six residents responded 'don't know.'

Demand of job on family members, conflict with colleagues and supervising consultants, remuneration and ethnic factors were not considered as major sources of stress in this study.

Speciality

When all the respondents (57) were considered, a significant number 48 (84.2%) perceived residency programme to be stressful as against 9 (15.8%) (Yates corrected $\chi^2 = 50.7$; $p < 0.001$). However, when respondents were considered within departments, significantly more residents in Surgery, Paediatrics, Anaesthesia and Medicine, had higher degree of perceived stress than their counterparts within the same departments. Also among

these four specialties, Surgery had the highest level of significance, followed by Paediatrics, Anaesthesia and lastly, Medicine (Table 4).

Analysis of factors that constitute stress in each specialty revealed that high patient load was considered a source of perceived stress in Anaesthesia by 5 residents as against none (Yates corrected $\chi^2 = 6.4$; Fisher's 2 tailed exact test = 0.008), in Surgery by 8 as against 1 (Yates corrected $\chi^2 = 8.0$; Fisher's 2 tailed exact test = 0.003) and in Paediatrics by 7 as against 0 (Yates corrected $\chi^2 = 10.3$; Fisher's 2 tailed exact test = 0.0006). Among residents in Medicine department, poorly equipped environment was found to be stressful (Yates corrected $\chi^2 = 6.4$; Fisher's 2 tailed exact test = 0.008) rather than high workload.

Correlates

An attempt was made to determine the relationship of age, gender and number of dependants with presence of stress. The ages of respondents were re-coded into three: <35 years, 35 - 50 years and >50 years. Number of dependants were also re-coded into two (0-4 and >4) while, perception of stress was recorded into two (not stressful, slightly stressful = 1; moderately and very stressful = 2). When proportions were compared using chi-square, there was no statistical difference in the perception of stress with respect to one, gender (Yates corrected $\chi^2 = 0.14$; Fisher's exact 2-tailed p value = 1.0), two, number of dependants (Yates corrected χ^2

= 0.01; Fisher's exact 2-tailed p value = 0.7) and three, age (Yates corrected $\chi^2 = 0.01$; Fisher's exact 2-tailed p value = 1.0) (Table 5).

Discussion

Residency training in UITH, Ilorin, like in similar institutions, is time bound. On the average, it is expected that a resident doctor would complete the programme within 5-7 years depending on the speciality. Inability to complete the programme within the expected period may lead to its termination by the hospital management. The perception of having to leave the programme without completing it varies with each resident, but obviously not the way most, if not all, would want to end it. Any factor that has direct or indirect effect of prolonging the stipulated period is therefore likely to be perceived as a stressful factor. This might explain, in part, why high patient load, poor work environment and distant accommodation would constitute stress factors among these resident doctors.

A high patient load in the clinics would imply a greater time spent in rendering services (clerking, examining, investigating and treating patients) and less time in training activities e.g. bedside teachings, tutorials and acquisition of research skills. Even though this view was expressed by 75% of residents, we consider it an error as there is no strict dividing line between service and training activities in the training of a doctor. Both spheres of activities are expected to be taken with all seriousness as the more the number of patients seen, the more likely the residents will have quality of experience. Having expressed this opinion, we must quickly add that if too few residents are attending to a large number of patients, there is bound to be overworking and thereby decrease productivity. A ratio of one consultant to three residents is suggested as a guide.

A significant number of respondents claimed that their working environment was poor as evidenced by inadequate facilities and non-conducive consulting rooms.

These they claimed constitute stress factors as efficiency is reduced through sharing of diagnostic tools and a fatigue-inducing (hot and humid without cooling facilities) environment. The critical factor here again, seems to be longer than necessary hours spent in attending to patients. This often tends to deplete the available time spent in other areas of training.

About 73% claimed their residences were far away from the hospital and therefore constitute a stressful factor. Only 37% claimed they were residing close to the hospital.

A significant number of residents identified lack of recreational facilities within the hospital premises as stressful. This is important, as exercise not only improves the physiological state of the body,⁷ but could also improve the psychological state through relaxation, group interaction,

teamwork and friendship.

In studies among General Practitioners, the importance of age as a determinant of stress score has not been consistent. While Sulaiman et al⁸ found a positive correlation, O'Dowd⁹ found none. In this study, increase in age was not found to increase stress perception. This might be due to the fact that the respondents' ages were close (28 - 43 years) with 91% of them falling between 28 and 36 years.

Also, there was no correlation between degree of perceived stress and gender. Though this will suggest that both males and females will equally do well in residency training programme, a larger sample size might reveal a different finding.

In conclusion, this study seemed to have provided postgraduate medical education providers and trainers the opportunity to understand what constitutes psychological stressors to residents (especially as claimed by them) during the course of their training.

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