

# Stress and Distress of Surgical Practice: the Trainee's View

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## Abstract

**Background:** Stress is the body's non specific response to any pleasant or unpleasant demand placed upon it. Is surgical practice a stressful profession?

**Method:** It's a prospective study, involving surgical residents in sub specialties of surgery. Information was obtained by administered questionnaire. Resident was expected to have spent three months in the surgical field.

**Results:** There were forty one (41) residents; age range was 25year to 42 year (mean 33.44+4.81). There were 35(85.4%) males and 6 (16.6%) females. Thirty eight, (92.7%) of the residents considered surgery to be a stressful profession. Thirty two, (78.1%) considered pediatrics subspecialty to be the most stressful of all. Lack of professionalism and workload were greatest sources of stress in 18 (43.9%) and 11 (26.8%) cases of the residents. In thirty seven, (90.2%) their academic exposures were not adequate. Despite all these short comings, the progress of the training was satisfactory in 26(63.4%) residents.

Thirty seven, (90.2%) of the residents would not specialize in surgery if given a second chance.

**Conclusion:** Surgery, as a stressful profession is no longer a debatable issue and a surgical trainee perceives it that way. We recommend that coping mechanisms such as putting appropriate backup support, offer of flexible scheduling to allow time off for critical family and social events are absolutely necessary among our surgical trainees.

**Keywords:** Stress, distress, surgery, trainee,

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## Introduction

Stress, is the body's non specific response to any pleasant or unpleasant demand placed upon it. Stress has three components. The first is the physically and emotionally challenging situation; the second is the individual perception or interpretation of this situation and thirdly, the individual physiological and psychological responses to the situation.<sup>1,4</sup> When stress reaches an inappropriate or excessive level, it can wear out the capacity of an individual to respond to demands<sup>1,2</sup>. Thus leads to emotional distress, behavioral disturbances, inconsistency, fatigue, unpredictability and symptoms of

ill health<sup>2-4</sup>. Mankind is constantly being a subject of stressful situations especially at the work place. Surgical practice has long been recognized to be a stressful profession<sup>5,6</sup>. The available studies reviewed identified common sources of stress in surgical practice. However, no available information on the frequency of these problems as encountered by surgical trainees especially in our environment.

Surgical trainees work in different environments with different conditions of service, diverse culture, dissimilar availability and exposure to training facilities. Surgical trainees in developing countries such as Nigeria may experience more stress during training as a result of these dissimilar situations. The peculiarity of the problems routinely encountered by surgical trainees in our environment needs further evaluation. The aim of this study is to identify stressors in our environment and to determine the effect of these stressors on the academic performance of the trainees.

## Methodology

Ahmadu Bello University is a tertiary teaching hospital located in the north central part of Nigeria. This hospital plays a major role in the healthcare delivery in this part of the country. We carried out a study on the local stressors affecting the trainees especially as related to academic performance. This study was conducted by the use of a structured questionnaire to obtain the necessary information. The questionnaire focused on surgical residents in the hospital. These surgical trainees were made up of senior house officers, registrars and senior registrars. The questionnaires were administered by the authors. Newly employed residents who have not spent a minimum period of three (3) months were excluded from the study population. Residents that came for posting/clerkship in any of the surgical careers were allowed to spend a minimum of three (3) months in the environment before they were allowed to participate in the study.

The questionnaire utilized both open and closed ended questions to determine whether respondents considered surgery to be a stressful profession, the subspecialty considered most stressful, and the greatest source of stress. The questionnaire was also designed to determine whether surgical trainee had enough time to rest and read their books, whether

academic activities/facilities were available, accessible and well explored. It also determines the progress of the training, relationship with seniors, time for social engagements and whether the frustration arising from the stress had compelled surgical trainee to contemplate changing profession, or committing suicide at any time. Respondents were further asked whether they will choose surgery if given a second chance, the reason for their choice, alternative profession they would have preferred and also whether they felt they could recommend surgery to their children. If married, expectations from family members were also determined. Statistical data analysis was carried out using (SPSS version 13.0) Soft ware. Simple frequencies were determined for variables. Where multiple responses were required, each response was treated as a separate variable. The chi-square test was used to test for proportions. The critical level was set at 0.05 for all statistical tests.

## Results

There were forty one (41) residents; age range was 25year to 42 year (mean 33.44+4.81). There were 35(85.4%) males and 6 (16.6%) females. There were 11(26.8%) senior house officers, 21(51.2%) registrars and 9(22.0%) senior registrars that were assessed. Thirty eight (92.7%) of the residents considered surgery to be stressful while only 3 (7.3%) residents agreed that surgery as a profession is not stressful. All the senior registrars reported that surgery is stressful (See table I). No association between age and the stress of surgery as a profession among our residents.  $P = 0.499$ . Both married and single all agreed that surgery is stressful. No significant statistical differences between the two.

Only two (9.5%) and one (9.1%) of the senior house officers and registrars respectively agreed that surgery is not stressful.

Thirty two, (78.1%) considered pediatric surgery subspecialty to be the most stressful of all the surgical fields. Lack of professionalism and workload were reported to be the greatest sources of stress in 18 (43.9%) and 11 (26.8%) cases of the residents (see table II). 28 (68.3%) of the residents reported that the volume of workload is very high. Average number of clinic per week is once for all the residents. Thirty five, (85.4%) residents have no time at all for social engagement and the remaining agreed to have insufficient time for social engagement. Thirty four, (82.9%) of the residents have cordial relationship with their consultants despite insufficient time for relaxation. Majority of the residents, 32 (78.1%), rest for only 1- 3 hours in twenty four hours

apart from period of sleep. Thirty seven, (90.2%) reported that their academic exposures were not adequate. The residents have good working relationships with the consultants. Only four, (9.8%) residents were satisfied with the academic activities and training facilities that are made available unto them. Despite all these shortcomings, the progress of the training is satisfactory in 26(63.4%) residents.

Thirty seven, (90.2%) of the residents would not specialize in surgery if given a second chance, most of the residents would have love to take up non medical professions, with majority of them preferring politics( see table II). All the married residents agreed that family pressure is another important source of stress.

Table I: Status of resident \*stressful profession Cross tabulation

status of resident	stressful profession		Total
	yes	no	
SHO	9	2	11
Registrar	20	1	21
Senior registrar	9		9
Total	38	3	41

Table II: Sources of stress

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Workload	11	26.8	26.8	26.8
	Lack of facilities	8	19.5	19.5	46.3
	Mental & physical strain	3	7.3	7.3	53.7
	Government's disregard	1	2.4	2.4	56.1
	Lack of professionalism	18	43.9	43.9	100.0
	Total	41	100.0	100.0	

Table III: Status of resident \* offered a 2 chance Cross tabulation

status of resident		offered a 2 chance		Total
		yes	no	
resident	SHO	2	9	11
	Registrar	1	20	21
	Senior registrar		9	9
Total		3	38	41

## Discussion

Surgery has long been recognized as a stressful profession<sup>5,6</sup>. The result of this survey demonstrated that 38(92.7%) of the respondents considered surgery as stressful profession. This is quite in agreement with previous studies<sup>3,6</sup>. Physicians are frequently been overloaded with demands of caring for sick patients<sup>7</sup>. Thus deterioration of physicians well being from excessive stress has been described as the 'silent anguish of the healers'<sup>8</sup>. Excessive job stress has been associated with impaired job performance and poor health, including headaches, sleep deprivation, irritability, marital dysfunction, fatigue, anxiety, depression, ineffectiveness and a sense of depersonalization<sup>9-13</sup>.

Burnout syndrome has been found to be common among surgeons particularly the orthopaedics and paediatric surgeons<sup>14, 15</sup>. These are subspecialties that put great demand on practitioner because of high expectations and exactitude of patient care and management. This is not surprising; in this study, paediatric surgery was considered the most stressful specialty. Thirty two (78%) respondents considered paediatric surgery subspecialty to be the most stressful of all the surgical fields. The mental and physical fragility of children coupled with their general inability to be cooperative have been considered to be the main sources of stress in this subspecialty. However, orthopaedic surgery which is a full fledged department of its own is not included in this study.

Surgical trainee (resident) faced both academic responsibilities and those required by the career itself<sup>16</sup>, thus strike a balance between training and career demands. Therefore, he is expected to be exposed to more stressors. In fact, the seeds of burnout syndrome among surgeons have been known to be sown during residency training programme where fatigue and emotional exhaustion are often the norm<sup>17</sup>. It has been found that the magnitude of stress experienced usually decrease with age and length of service<sup>15,17</sup>. This study did not show any association between age and stress of surgery as a profession among our residents. However, the status of the resident has significant impact on the magnitude of the stress experienced. The higher the status the more stress experienced. This is probably due

putting appropriate backup support, close observation of residents for signs of fatigue and undue stress, offer of flexible scheduling to allow time off for critical family and social events are absolutely necessary among our surgical trainees<sup>20-23</sup>. If surgeons hope to heal the distresses in the 21<sup>st</sup> century and lead their patients to enjoy healthy, sustainable lives<sup>24</sup>, they must show that it is possible by their own lives of sustainable service that emanates from the depths of spirit that are continuously renewed.

## Reference

1. Botseas D S. The occupational stress of hospital surgeons. *Eleftherotypia* 2001; 100.
2. McCue JD. The effect of stress on physicians and their medical practice. *N Engl J. Med.* 1982; 306: 458-463
3. Pothmann M, Kaluza K, Mann F. Burnout syndrome in women in surgery. *Largenbecks Arch chir suppl kongressbd* 1997; 114:734-6
4. Johns M M 3<sup>rd</sup>, Ossoff R H. Burnout in academic chairs of otolaryngology: head and neck surgery. *Laryngoscope*. 2005 Nov; 115(11):2056-61
5. Campell D A Jr, Sonnad SS, Eckhauser F E et al. Burnout among American Surgeons. *Surgery* 2001; 130:696-705
6. Jonnas T, Johnson MD, Robin L et al. Professional burnout among head and neck surgeons: Results of a survey. *Head and Neck* 2006; 15(6):557-560

to the fact that more responsibilities and crucial decision making in patient management are expected from senior registrars.

Intense work demand, limited control and a high degree of work-home interference abound in residency training programme<sup>15, 17</sup>. The risk of burnout increases in individual who consistently experience high workload and perceived lack of control over the extent to which the load exceed their capacity<sup>15-17</sup>. In this study, 28(68%) of the respondent reported that workload for a surgical trainee is quite high.

Majority of the resident 32(87.1%) rest for 1 to 3hours only in a day and virtually all do not have adequate time for reading. Availability and exposure to training facilities were also considered not sufficient. Despite all these short comings, the progress of the training was satisfactory in 26(63.4%) of the residents.

Thirty eight (92.7%) of the residents considered surgery a stressful profession; and 37(90.3%) of these same surgical trainees would not opt for surgery if given a second chance. In determining the professions that they would prefer as an alternative to their own, non medical professions were chosen with majority preferring politics. It goes to say, therefore, that in the nearest future there would be fewer surgeons practicing surgery if this trend is allowed to continue. Another source of stress is family demands. The married residents agreed that the impact of family pressure is quite significant. No wonder Michael Meyers urged surgeons not to let the practice of medicine kill their marriages<sup>18,19</sup>.

## Conclusion

Excessive sleep loss, fatigue and resident stress are serious matters. Dissatisfaction and distress have significant costs not only for the surgeons and their families but patients and health care organizations as well<sup>17</sup>. The fact that surgery is a stressful profession is no longer a debatable issue and a surgical trainee perceives it that way. Coping mechanisms such as

7. Ferguson CM, Kellogg KC, Hutter MM et al. Effect of work-hour reforms on the operative case volume of surgical residents *Curr Surg* 2005; 62:535-538
8. Neuwirth ZE, The silent anguish of the healer *Newsweek* 1999; 79
9. Williams S, Dale J, Glucksman E, et al. Senior house officers' work related stressors, psychological distress and confidence in performing clinical tasks in accident and emergency: A questionnaire study *Br med J* 1997; 314:713-8
10. Wilkinson RT, Tyler PD, Varey CA. Duty hours of young Doctors: Effect on the quality of work. *J Occu psychol* 1975; 48: 219-29
11. Martini et al. Comparison of burnout among medical residents before and after implementation of work hours limits. *Acad Psychiatry* 2006; 30: 352-355
12. Stamp T, Termuhlen P, Miller S et al. Before and after resident work hour limitation; an objective assessment of the well being of surgical residents *Curr Surg* 2005; 62: 117-121
13. Whang EE, Perez A, Ito H et al. Work hour's reform: perception and desires of contemporary surgical residents *J Am Coll Surg* 2003; 179:624-630
14. Jimenez AC, Morales Torres JL, Martinez Martinez C. Study of 'burnout' syndrome in Spanish paediatric surgeons. *Cir pediatri*. 2002Apr; 15(2): 73-8
15. Niku K, Thomas MD. Resident burnout. *JAMA* 2004; 292:2880-2889
16. Dudley H A, Stress in junior Doctors 1: stress and support. *Br med J* 1990; 301:75-6
17. Spickard A, Gabbard G, Christensen JF. Mid-career burnout in generalist and specialist physicians: Definitions, risk factors and prevention. *JAMA* 2002; 288(12): 1447-50
18. Meyers M. Medical marriages: A look at the problems and solutions. New York; Plenum medical book company 1994.
19. Gabbard GB, Menninges MD, Coyne L. Sources of conflict in the medical marriage. *Am J Psychiatry* 1987; 144: 5672-7
20. Athanassiates S, The training of junior Doctors in surgery: suggestion for improvement. *Greek Surgery* 1985; 57(4): 209-22
21. Yamey G, Promoting well being among Doctors *Br J Med* Feb.3, 2001; 322: 252-253
22. Barden CB, Specht MC, McCarter MD et al. Effect of limited work hours on surgical training *J Am Coll Surg* 2002;195:531-538
23. Fletcher KE, Underwood Will, Davis SQ, et al. Effect of work-hour reduction on residents' lives: a systematic review. *JAMA* 2005; 294:1088-1100
24. Gardner JW. Personal renewal. *West J med* 1992; 157:457-59