

## Original Article

# Assessing Satisfaction of Resident Doctors with Training in Northwestern Nigeria

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### Article Metrics

Date submitted: 1/11/2020

Date Accepted: 14/12/2020

Date Published: Jan. 2021



[www.jmbsr.com.ng](http://www.jmbsr.com.ng)

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## ABSTRACT

**Background:** Residency training is a postgraduate medical education where graduate doctors are mentored by qualified specialists in specific fields in hospital settings. Satisfaction in residency training is found to be interrelated with performance and quality of life of resident doctors. Numerous literatures have assessed satisfaction using various parameters with significant proportion of doctors not satisfied with their jobs. The literatures reviewed mostly measured satisfaction as a consequence associated with factors, thus difficult to generalize findings. This study therefore aims to assess satisfaction of resident doctors in training in Northwestern Nigeria using multiple parameters

**Objectives:** To assess intrinsic, extrinsic and overall satisfaction of resident doctors in training as well as associated factors.

**Methods:** Electronic questionnaire was distributed to respondents using online links to respondents' emails or personal contacts. Data was collected within a span of two weeks.

**Results:** A total of 304 respondents filled and submitted the questionnaire. The mean age was  $34.70 \pm 4.50$  years, with Male: Female ratio of 2.54: 1.00, 244 (80.3%) married and 216 (71.1%) Junior registrars. Only 39 (12.8%) of respondents were satisfied overall with residency training. On bivariate Chi square analysis, there was no significant association between overall satisfaction and sociodemographic and residency training characteristics of respondents. However, significant variables that were associated with overall satisfaction include: life in residency training being more stressful than life before; written/considered writing international licensing exams; residency training meeting expectations of respondents; and desire to quit residency training for practice in Europe or United States. There was also significant association between faculty of respondents and overall satisfaction. On multivariate logistic regression, only; written/considered writing international licensing exam; residency training meeting expectations of respondents; and faculty of respondents were significantly associated with overall satisfaction.

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doi: <https://doi.org/10.46912/jmbsr.xx>

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#### How to cite this article:

SS. Umar, ZS Babandi, AG Suleiman, UM Umar, AA Olorukooba, AJ Ahmad et al. Assessing Satisfaction of Resident Doctors with Training in Northwestern Nigeria. *J Med Bas Sci Res* 2020;1(1):93-102.

**Conclusion:** The level of satisfaction amongst resident doctors in training was very poor.

**Keywords:** Residency Training, Resident Doctors, Satisfaction, Nigeria.

## INTRODUCTION

Residency training is a postgraduate medical education that involves teaching and mentoring graduate doctors to acquire knowledge, skills and competence in specific disciplines in accredited hospitals towards becoming specialists.<sup>1-3</sup> In Nigeria, the aim of establishing residency training include provision of high standard manpower and halting brain drain of doctors in search of better opportunities abroad.<sup>4,5</sup> The National Postgraduate Medical College of Nigeria (NPMCN), along with the West African Colleges of Surgeons and Physician (WACS, WACP) are responsible for developing and reviewing syllabuses for the various specialties in residency training as well as organizing update courses. They also conduct Part I and Part II examinations for junior and senior resident doctors who have completed their trainings, respectively.<sup>6,7</sup> The Part I examination is attempted by junior residents who have completed their junior residency training and success at the examination would qualify them to commence senior residency training immediately. The Part II examination is done on completion of senior residency training, success at which qualifies the senior registrar as specialist. In addition to acquiring skills, competence and knowledge, senior residency training requires completion of a dissertation research.<sup>7</sup> The Northwest region in Nigeria comprises of Kaduna, Kano, Sokoto, Katsina, Kebbi, Jigawa and Zamfara States.

Satisfaction in residency training is found to be interrelated with performance and quality of life of resident doctors.<sup>8</sup> Numerous literatures have assessed satisfaction using various parameters with significant proportion of doctors not satisfied with their jobs.<sup>9-14</sup> The parameters for assessing satisfaction could be generally grouped into intrinsic and extrinsic satisfaction. Intrinsic satisfaction comes from work itself while extrinsic satisfaction is derived from working environment.<sup>15</sup> The impact of residents' job satisfaction include improved productivity, better doctor- patient relationship, lower burnout, better motivation towards studies, reduced turnover intention, amongst others.<sup>16-21</sup> The literatures reviewed mostly measured satisfaction as a consequence associated with factors like

burnout and stress and mostly single center studies, thus difficult to generalize findings.

This study thus aimed to undertake an in-depth analysis of satisfaction of resident doctors in a multi- center setting. The study assessed levels of satisfaction of residents with their training and working conditions, along with factors associated with them. The findings would help provide needed information to regulatory colleges, training institutions and trainers of resident doctors on areas of residency training needing review or improvement.

## METHODS

This was a descriptive cross- sectional study amongst resident doctors undergoing residency training in 15 accredited hospitals in Northwestern Nigeria. These accredited centers include Teaching Hospitals, Federal Medical Centers, Specialist and General Hospitals. The Northwest region in Nigeria comprises of Kaduna, Kano, Sokoto, Katsina, Kebbi, Jigawa and Zamfara States.

A semi- structured self- administered electronic questionnaire for this study was designed using KoBo Collect v1.25.1. It was divided into three sections A, B, and C. Section A enquired about sociodemographic and residency training characteristics of respondents including age, gender, duration spent so far residency and current cadre of resident doctors, type of training hospital etc. Sections B assessed intrinsic and extrinsic satisfaction with residency training by asking 20 questions with responses from graded for each response from very satisfied to very dissatisfied.

The overall satisfaction for each respondent was computed by assigning grades to each of the 20 satisfaction questions asked (Very dissatisfied- 0.1, Dissatisfied- 0.3, Neutral- 0.5, Satisfied 0.7 and Very satisfied- 0.9), then summing them up and getting the average. An overall score of 0.6 and above, 0.50 to 0.59 and less than 0.50 were interpreted as overall satisfied, neutral and not satisfied respectively.<sup>22</sup>

Section C assessed some factors that may be associated with satisfaction of respondents in residency training.

The questionnaire was adapted, validated and pre- tested before administration.<sup>22</sup>

Ethical approval for the study was obtained from Health Research and Ethical Committee of Ahmadu Bello University Teaching Hospital Zaria (ABUTHZ/HREC/W39/2020). The approval of leadership of the Association of Resident Doctors of respective centers was sought before the questionnaire was administered to the respondents under their leadership. Eligible participants were identified by research assistants in centers of study and consent sought before sending the self- administered questionnaire to their emails or personal contacts. After completion, respondents submitted their responses which was saved in the online data base. Measures were taken to ensure confidentiality, anonymity and security of respondents' data.

The period of administration of the questionnaires was two weeks from 6<sup>th</sup> to 19<sup>th</sup> July 2020. Convenience sampling was used and a total of 304 respondents from 15 accredited hospitals completed and submitted the questionnaire, out of 403 administered. The settings were made to prevent multiple entries from same email or contact address.

Data generated was imported into IBM Statistical Product and Service Solutions (SPSS) version 25.0 and was summarized using tables and simple charts. Satisfaction of various components of residency training and overall satisfaction was computed per respondent as stated above; which were tested for statistical significance with various associated factors using Chi- square test ( $\chi^2$ ) at 0.05 level of significance. Also, regression analysis was run to rule out confounding factors.

**RESULTS**

**Sociodemographic characteristics of respondents**

A total of 304 filled and submitted the questionnaires with a response rate of 75.4%. Except for age where 293 respondents provided information, the remaining required fields were filled by all the respondents. The mean age of respondents was 34.70 ± 4.50 years with Male: Female ratio of 2.54:1.00 and majority 244(80.3%) of them married (Table 1). The average duration from graduation to commencement of residency training was 5.39 ± 2.91

**Table 1. Sociodemographic and residency training related characteristics of respondents**

Variables	Frequency (%)
<b>Gender (n= 304)</b>	
Male	213 (70.1)
Female	91 (29.9)
<b>Marital Status (n= 304)</b>	
Married	244 (80.3)
Single	56 (18.4)
Divorced	4 (1.3)
<b>Type of Resident doctor (n= 304)</b>	
Primary	234 (77.0)
Supernumerary	46 (15.1)
Honorary	13 (4.3)
On posting	11 (3.6)
<b>Current cadre (n= 304)</b>	
Junior registrar	216 (71.1)
Senior registrar	88 (28.9)
<b>Type of training hospital (n= 304)</b>	
Federal Teaching Hospital	231 (76.0)
Federal Medical Center	28 (9.2)
Specialist Hospital	27 (8.9)
State Teaching Hospital	15 (4.9)
General Hospital	3 (1.0)
<b>Additional Postgraduate qualification (n=304)</b>	
Yes	67 (22.0)
No	237 (78.0)
<b>*Type of additional postgraduate qualification (n= 67)</b>	
Certificate/ Diploma	23 (7.6)
Masters/ M.Sc	51 (16.8)
Ph.D	1 (0.3)

*Some respondents had multiple postgraduate qualification*

years while average duration in residency training was 2.86 (±2.33) years. Most of the respondents 233 (79.5%) were between the ages of 29 to 38 years.

**Characteristics of respondents related to residency training**

Tables 1 show the residency training characteristics of respondents. The mean duration from medical school graduation to commencement of residency training was 5.39 ± 2.91 years while the mean duration in residency training was 2.86 ± 2.33 years. Most of the respondents 216(71.1%) were junior residents and Faculty of Obstetrics and Gynaecology had the highest number of respondents (Fig. 1).

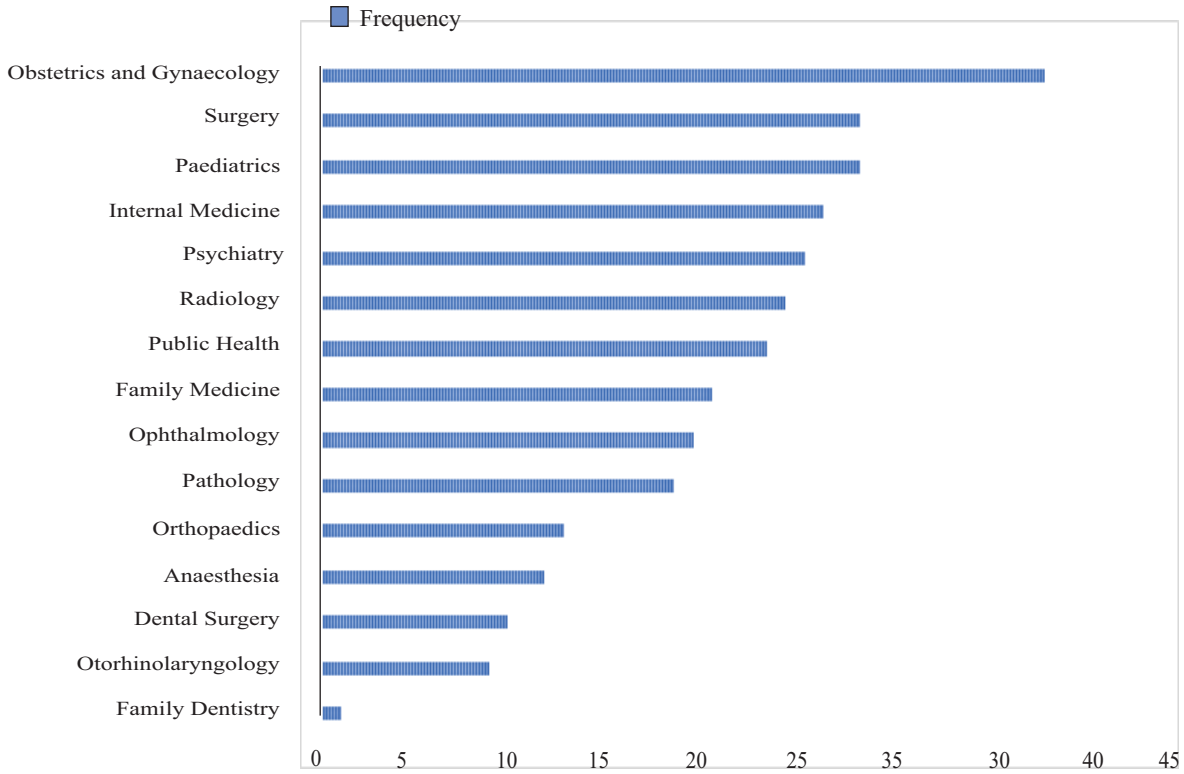


Fig. 1. Faculty of specialty of

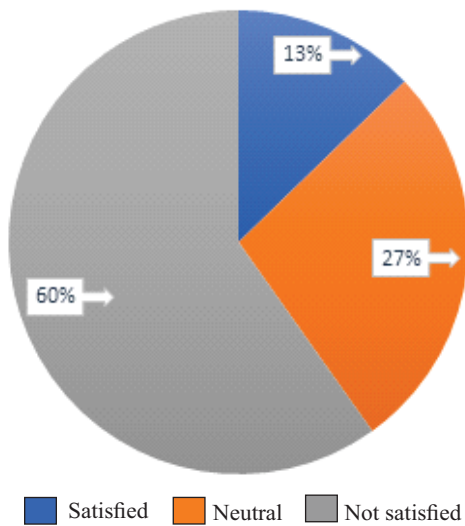


Fig. 2. Overall satisfaction of resident doctors in training (n= 304)

**Satisfaction of respondents in residency training**

**Intrinsic satisfaction:**

Table 2 shows generally low satisfaction of respondents with the most satisfaction from frequency of call duties amongst 129 (42.5%) respondents. The least satisfaction was from availability of facilities and instruments for diagnosis and treatment which was recorded amongst 62 (20.4%) respondents.

**Extrinsic satisfaction:** Table 3 shows a wider disparity in satisfaction from the various components. The least being hospital management concern about welfare of resident doctors 27 (8.9%), while many respondents 203 (66.7%) expressed satisfaction with their relationship with other healthcare workers at work.

**Overall satisfaction** was computed for each respondent by summing up the satisfaction score of the 20 components of both intrinsic and extrinsic satisfaction and getting the average (see methodology). Only 39 (12.8%) respondents were satisfied overall with residency training (Fig. 2)

**Table 2. Intrinsic satisfaction of resident doctors in training**

Variables n = 304	Level of satisfaction Frequency (%)				
	Very satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Quality of residency training	11 (3.6)	97 (31.9)	76 (25.0)	88 (28.9)	32 (10.5)
Personal growth (to a specialist) in residency training	6 (2.0)	123 (40.5)	83 (27.3)	72 (23.7)	20 (6.6)
Mentorship by supervising consultants	17 (5.6)	74 (24.3)	66 (21.7)	97 (31.9)	50 (16.5)
Mentorship by supervising senior registrar	16 (5.3)	107 (35.2)	97 (31.9)	66 (21.7)	18 (5.9)
Teaching by supervising consultants	15 (4.9)	89 (29.3)	71 (23.4)	94 (30.9)	35 (11.5)
Teaching by supervising senior registrar	16 (5.3)	110 (36.2)	102 (33.6)	64 (21.1)	12 (5.3)
Availability of facilities and instruments for diagnosis and treatment	4 (1.3)	58 (19.1)	70 (23.0)	115 (37.8)	57 (18.8)
Availability of materials (textbook, journals, internet access) for studies	11 (3.6)	54 (17.8)	67 (22.0)	125 (41.1)	47 (15.5)
Number of active working hours per week	8 (2.6)	100 (32.9)	77 (25.3)	78 (25.7)	41 (13.5)
Frequency of call duties	17 (5.6)	112 (36.8)	76 (25.0)	70 (23.0)	29 (9.5)

**Table 3. Extrinsic satisfaction of resident doctors in training**

Variables (n= 304)	Level of satisfaction Frequency (%)				
	Very satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Current salary	10 (3.3)	84 (27.6)	102 (33.6)	82 (27.0)	26 (8.6)
Hospital management sponsorship of residency training	2 (0.7)	26 (8.6)	75 (24.7)	127 (41.8)	74 (24.3)
Hospital management concerns about residents' welfare	1 (0.3)	26 (8.6)	71 (23.4)	129 (42.4)	77 (25.3)
Recognition of hard work by department/ hospital management	5 (1.6)	43 (14.1)	92 (30.3)	94 (30.9)	70 (23.0)
Relationship with management of training department	22 (7.2)	136 (44.7)	103 (33.9)	29 (9.5)	14 (4.6)
Relationship with other healthcare workers at work	29 (9.5)	174 (57.2)	82 (27.0)	15 (4.9)	4 (1.3)
Relationship between consultants and registrars in hospital	27 (8.9)	111 (36.5)	76 (25.0)	65 (21.4)	25 (8.2)
Safety of working environment	5 (1.6)	50 (16.4)	91 (29.9)	124 (40.8)	34 (11.2)
Conduciveness of working environment	5 (1.6)	48 (15.8)	77 (25.3)	132 (43.4)	42 (13.8)
Availability of social services at place of work	2 (0.7)	27 (8.9)	77 (25.3)	146 (48.0)	52 (17.1)

**Table 4. Association between overall satisfaction of resident doctors in training and other variables.**

Variables (n= 304)	Overall Satisfaction Frequency (%)			Statistics	
	Satisfied	Neutral	Not satisfied	$\chi^2$	p
<b>Life in residency training more stressful compared to life before</b>					
Strongly agree	12 (4.0)	29 (9.5)	84 (27.6)	23.93	0.002
Agree	14 (4.6)	41(13.5)	66 (21.7)		
Neither	7 (2.3)	5 (1.6)	19 (6.3)		
Disagree	3 (1.0)	8 (2.6)	12 (4.0)		
Strongly disagree	3 (1.0)	0 (0.0)	1 (0.3)		
<b>Have written/ considered writing international licensing exams</b>					
Strongly agree	13 (4.3)	15 (4.9)	58 (19.1)	23.221	0.003
Agree	7 (2.3)	30 (9.9)	70 (23.0)		
Neither	11 (3.6)	18 (5.3)	23 (7.6)		
Disagree	3 (1.0)	17 (5.6)	24 (7.9)		
Strongly disagree	5 (1.6)	3 (1.0)	7 (2.3)		
<b>Residency training met expectations of respondents</b>					
Strongly agree	3 (1.0)	0 (0.0)	7 (2.3)	83.340	<0.001
Agree	22 (7.2)	35(11.5)	26 (8.6)		
Neither	12 (3.9)	28 (9.2)	29 (9.5)		
Disagree	2 (0.7)	15 (4.9)	100 (32.9)		
Strongly disagree	0 (0.0)	5 (1.6)	20 (6.6)		
<b>Would quit residency training for another job</b>					
Strongly agree	8 (2.6)	13 (4.3)	41 (13.5)	9.406	0.309
Agreed	4 (1.3)	21 (6.9)	43 (14.1)		
Neither	6 (2.0)	19 (6.3)	35 (11.5)		
Disagree	15 (4.9)	24 (7.9)	44 (14.5)		
Strongly disagree	6 (2.0)	6 (2.0)	19 (6.3)		
<b>Would quit for residency training offer in another facility within the country</b>					
Strongly agree	4 (1.3)	4 (1.3)	24 (7.9)	16.094	0.097
Agree	3 (1.0)	11 (3.6)	35 (11.5)		
Neither	7 (2.3)	21 (6.9)	36 (11.8)		
Disagree	14 (4.6)	34(11.2)	64 (21.1)		
Strongly disagree	11 (3.6)	13 (4.3)	23 (7.5)		
<b>Would quit residency training for practice in Europe or the United States</b>					
Strongly agree	14 (4.6)	23 (7.6)	81 (26.6)	18.015	0.021
Agree	6 (2.0)	18 (5.9)	50 (16.4)		
Neither	9 (3.0)	17 (5.6)	19 (6.3)		
Disagree	7 (2.3)	16 (5.3)	17 (5.6)		
Strongly disagree	3 (1.0)	9 (3.0)	15 (4.9)		
<b>Residency training prevents pursuing cherished personal goals</b>					
Strongly agree	8 (2.6)	19 (6.3)	63 (20.7)	14.134	0.078
Agree	19 (6.3)	46(15.1)	85 (28.0)		
Neither	5 (1.6)	9 (3.0)	19 (6.3)		
Disagree	6 (2.0)	8 (2.7)	10 (3.3)		
Strongly disagree	1 (0.3)	1 (.3)	5 (1.6)		

$\chi^2$  calculation was done using 3 x 5 cells with df= 8. df= degree of freedom



**Table 5 . Association between overall satisfaction of respondents in training and faculty of specialty**

Faculty of respondents (n= 304)	Overall Satisfaction			Statistics	
	Frequency			$\chi^2$	p
	Not Satisfied	Neutral	Satisfied		
Anaesthesia	2	5	5	58.007	0.001
Dental Surgery	4	4	2		
Family Dentistry	1	0	0		
Family Medicine	15	4	2		
Internal medicine	21	3	3		
Obstetrics & Gynaecology	29	9	1		
Ophthalmology	10	7	3		
Orthopaedics	9	1	3		
Otorhinolaryngology	4	1	4		
Paediatrics	18	9	2		
Pathology	3	10	6		
Psychiatry	11	13	2		
Public health	15	6	3		
Radiology	13	9	3		
Surgery	24	2	3		
<b>Total</b>	<b>182</b>	<b>83</b>	<b>39</b>		

$\chi^2$  calculation was done using 3 x 15 cells with df= 28. df= degree of freedom

**Factors associated with overall satisfaction of respondents in residency training**

Tables 4 and 5 show the relationship between overall satisfaction of respondents in residency training and variables. The significant variables that were associated with overall satisfaction on bivariate Chi- square analysis include life in residency training more stressful than life before ( $\chi^2=23.932$ , p= 0.002); written/considered writing international licensing exams ( $\chi^2=23.221$ , p= 0.003); residency training meeting expectations of respondents ( $\chi^2=83.340$ , p= 0.000); and desire to quit residency training for practice in Europe or united States ( $\chi^2=18.015$ , p= 0.021). There was also significant association between faculty of respondents and overall satisfaction ( $\chi^2=58.007$ , p= 0.001).

However, on multivariate logistic regression, only; written/considered writing international licensing exam ( $\chi^2=20.308$ , p= 0.009); residency training meeting expectations of respondents ( $\chi^2=78.101$ , p< 0.000); and faculty of respondents ( $\chi^2=58.736$ , p= 0.001) were significantly associated with overall satisfaction.

There were no significant association between overall satisfaction of respondents in training and any of the sociodemographic or other residency training related

variable (Age, gender, marital status, cadre of respondents, duration in residency training, type of training hospital, additional postgraduate qualification, etc.)

**DISCUSSION**

The sociodemographic characteristics of respondents from this study were similar to those from other studies on resident doctors in Nigeria.<sup>4,23</sup> They are young, majority males and married. They contribute significantly to the number of doctors providing essential healthcare in Nigeria. They also represent potential human resources that government could strategically develop and plan improving healthcare delivery or lose to foreign countries in search of better opportunities of practice and career growth.

The establishment of medical residency training in Nigeria about four and a half decades ago was meant to localize specialist training at high level to suit the need of Nigeria and also halt brain drain of Nigerian doctors, amongst other reasons.<sup>4,5</sup> The aim of medical residency training in Nigeria, to a large extent, was achieved as numerous specialists were graduated over the years and there was significant reversal of brain drain of doctors especially in the 1970s and 1980s.<sup>24</sup> However there has been gradual decline in quality of residency training over the years due to poor funding of program, prioritization of clinical services over training by training hospitals, inadequate diagnostic and treatment facilities in training hospitals, inadequate emphasis on research, poor monitoring and evaluation and poorly structured curriculum.<sup>24,25</sup>

In this study, the proportion of respondents who were satisfied overall with residency training was very low. This was consistent with findings from similar studies on resident doctors in training in Nigeria,<sup>6,26</sup> but much less compared to studies in Ghana<sup>27</sup> and South Africa<sup>28</sup> where the satisfaction

was about average. The difference in the levels of satisfaction between this study and those of Ghana and South Africa could be due to better levels of satisfaction with supervision of consultants and available infrastructure from the later than the former. Also, differences in methodology could partially account for the disparity. This study computed an objective overall satisfaction of respondents by assigning Likert scores to each of the satisfaction questions asked, then summed them up and get the average. This was in contrast with the other studies where respondents were asked directly to access their overall satisfaction of residency program.

The intrinsic satisfaction had to do with core of residency training. The least satisfaction amongst respondents from this study were in availability of study materials, availability of facilities and instruments for diagnosis and treatment, and mentoring by supervising consultants. These were very similar to findings on previous studies<sup>4,5,26</sup>. Many of the training institutions do not have libraries with up to date books and relevant journal subscription, just as they are lacking in facilities and instruments needed to carry out specialized procedures.<sup>24</sup> Therefore, the resident doctors in training are frustrated because of wide disparity between expected competence in knowledge and skills, and what is actually obtainable.

The extrinsic factors are those factors that could affect resident doctors' satisfaction and performance in training, but are not direct components of residency training. Most of the respondents from this study expressed dissatisfaction with their hospital managements' sponsorship of their training and concerns about their welfare; availability of social amenities at places of work; safety and conduciveness of their hospital environment; as well as recognition of hard work by their departments. These findings were corroborated by other studies where resident doctors expressed similar concerns.<sup>4,25</sup> Inadequate sponsorship means out of pocket financing of training by the resident doctors which may affect funds available for other uses. It may also lead to borrowing or taking loans to meet up with financial demands of training. These could lead to significant stress on them. Conducive and safe working environment enhance learning and improves productivity as emphasized in a study on resident doctors in Pakistan.<sup>29</sup> These include working hours, availability of offices and other facilities at work place that enhance work.

The low level of satisfaction in this study being significantly

associated with respondents feeling stressed in residency training could be a pointer to the fact that they would be open to seeking better opportunity of practice in Europe or United States of America. These findings were further corroborated by a publication which asserted that the current high rate of brain drain amongst young Nigerian doctors were, amongst other reasons, due to attractive remuneration, excellent reward system for hard work, better sponsorship in training and research and better infrastructure for diagnosis and treatment.<sup>30</sup> It therefore can be safely concluded that the widespread dissatisfaction with training amongst resident doctors could lead to increased migration to other climes for better practice or produce specialists who would be frustrated and dissatisfied with their practice in future.

#### **Limitations**

1. The study design did not allow for assessing level of satisfaction with peculiarities in training by different faculties
2. Also, in depth analysis of inter training center variations in level of satisfaction was not carried out.
3. Inadequate literature to compare findings did not allow for a more robust discussion

#### **CONCLUSION**

This study found low level of satisfaction of resident doctors in training which was significantly associated with stress, disappointment in residency not meeting expectations and desire to quit residency training for practice in Europe or United States.

#### **Recommendations**

1. A study on satisfaction of practice of fellows/ consultants should be carried out to complement findings in this study.
2. The postgraduate medical colleges should carry out evaluation studies on resident doctors and compare with records of their performance in examinations.
3. Training hospitals provide materials for study and research, and conducive atmosphere for learning for resident doctors.
4. The Federal Government of Nigeria should implement



Medical Residency Training Act 2017 to help provide needed funding for residency training.

### Acknowledgment

The researchers are grateful to respondents who took out valuable time to participate in this study. Also, our gratitude goes to the leadership of Nigerian Association of Resident Doctors (NARD) and Presidents of respective Association of Resident Doctors (ARD) whose centers were involved in the study.

### Conflict of Interest

None

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