



ORIGINAL ARTICLE

## Determinants of Job Satisfaction among Physicians in Public Hospitals in Calabar, Nigeria

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### ABSTRACT

**Background:** Little is known about organizational factors and personal characteristics that affect job satisfaction among health care providers in sub-Saharan Africa. The aim of this study was to identify the determinants of job satisfaction among physicians in Calabar.

**Methods:** A descriptive cross-sectional survey was conducted among all 157 eligible and consenting physicians who had worked for at least six months in three public hospitals in Calabar. Data collection tool was a pretested self-administered questionnaire that also contained a section on job satisfaction assessment with both single-item and Spector multi-item Job Satisfaction Survey. Overall job satisfaction was assessed as the dependent variable using a single-item satisfaction measure. Domain-specific satisfaction was assessed as independent variables using the Spector Job Satisfaction Survey (JSS) instrument and adapted items from the Netherlands Working Conditions Survey. Data analysis was conducted using SPSS 14.0. A multivariate logistic regression model for overall job satisfaction was developed.

**Results:** Majority (68.2%) were males. The mean age of the respondents was  $32.8 \pm 5.4$  years. In the logistic regression model, the variables that independently predicted overall job satisfaction among respondents included: pay (AOR= 6.43, 95% CI= 1.17-35.27), contingent reward (AOR= 12.28, 95% CI= 1.18-127.97), operating procedures (AOR= 3.62, 95% CI= 1.03-12.67), communication (AOR= 3.07, 95% CI= 1.25-7.5), job autonomy (AOR= 3.70, 95% CI= 1.03-13.30), and being married (AOR= 5.43, 95% CI= 1.52-15.23).

**Conclusion:** This study identified satisfaction with pay, contingent reward, operating procedures, communication, job autonomy and being married as determinants of overall job satisfaction among doctors in public hospitals in Calabar, Nigeria.

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## INTRODUCTION

Job satisfaction is the most important consideration in employee's welfare.<sup>1</sup> It is defined as a positive emotional feelings that an individual has towards his or her job,<sup>2-4</sup> or the pleasurable state resulting from one's job.<sup>5</sup>

Satisfaction with one's work may depend on environmental/organizational factors as well as personal characteristics.<sup>1, 6</sup> Improving employees' welfare depends largely on how well the employer is able to identify factors that predict employees' satisfaction with the

job. Several correlates of job dissatisfaction may appear more common among physicians practicing in developing countries than among those practicing in developed countries.<sup>7, 8</sup> For example, physicians in developing countries may work for longer hours with patient overload and many times may need to work at inconvenient hours to earn call duty allowance. Working for long hours and overtime has been associated with job dissatisfaction.<sup>9</sup> Employee's wage has been identified as the organizational factor that has strongest correlation with job satisfaction.<sup>6, 10, 11</sup> Fair, reasonable and equitable wages increase job satisfaction.<sup>6, 10, 11</sup> Incessant industrial actions among physician labour unions in Nigeria have been attributed (among others) to inadequate remuneration.<sup>12</sup> Low wages may be a major reason why many employees leave their job, resulting in high turnover rate.<sup>13</sup>

It is also prudent to suspect that authoritarian leadership style, which has been linked to job dissatisfaction, may be common in a profession with emphasis on hierarchy. Lyons et al documented that having a feeling of worthwhile accomplishment from one's job, opportunity for personal and professional growth, recognition and satisfaction with work load were among organizational factors that predicted job satisfaction among healthcare professionals.<sup>14</sup>

Employees' personal characteristics may modify the effects of organizational factors on job satisfaction. For example, employees who had worked for longer years may have more opportunities for promotion, to earn more pay and are therefore, likely to be more satisfied with their work. Female employees generally report higher levels of job satisfaction than their male counterpart on the same job.<sup>15</sup> Employees' personality, age, marital status and educational attainment are some of the other factors that may act as effect modifiers.<sup>16</sup>

Organizational factors that reduce job satisfaction may constitute push factors for brain drain in sub-Saharan Africa.<sup>17</sup> Several studies have reported consistently low levels of job satisfaction among health care providers in sub-Saharan Africa, generally below 50%.<sup>17-20</sup> Little is known about organizational factors and personal characteristics that predict job satisfaction among health care providers in sub-Saharan Africa. The aim of this study was to identify the determinants of job satisfaction among physicians in Calabar, Nigeria.

## METHODOLOGY

A descriptive cross-sectional study was conducted among physicians employed in the public hospitals in Calabar. Calabar is the capital city of Cross State in Nigeria. The city has two administrative Local Government Areas called Calabar Municipal and Calabar South LGAs. The estimated land mass and population are 406 square kilometres and 466,800 persons, respectively. The main language spoken is Efik. The public facilities that provide healthcare delivery in Calabar include two tertiary hospitals (University of Calabar Teaching Hospital and Federal Psychiatric Hospital), one secondary health facility (General Hospital, Calabar) and several primary health centres. However, only the tertiary and secondary facilities are relevant to our study because they are the only public hospitals that employ doctors as at the time of the study. At the time of study, we estimated the total number of doctors (215) who were available by contacting the chief residents and heads of each departments/units because the sampling frame was not reliable. There was a high turnover of doctors at the general hospital at the time. Furthermore, about a third of doctors at the University of Calabar Teaching Hospital were on outside postings at any given time. The study included all doctors who had

worked for at least six months in the three hospitals.

A pretested, structured, self-administered questionnaire was used to collect data. All cadres of doctors were included in the study. The questionnaire contained items on respondents' socio-demographic characteristics, work history and a section on job satisfaction assessment. Overall job satisfaction was assessed using a single-item 5-point Likert scale (1-very dissatisfied, 2-dissatisfied, 3-undecided, 4-satisfied, 5-very satisfied) in response to how participants would describe the overall level of satisfaction with their work. Satisfaction with specific aspects of work were also assessed from 11 standard work domains including nine domains (pay, promotion, supervision, fringe benefit, contingent reward, operating procedures, co-workers, nature of work and communication) adopted from Spector's Job Satisfaction Survey (JSS) Instrument,<sup>21</sup> and two standard work domains (job autonomy and work hour) adapted from the Netherlands Working Conditions Survey<sup>1, 22</sup> and non-standard work domain including experiencing stress outside of work and satisfaction with; job security, workload distribution (respondents' rating of workload distribution among co-workers), training, healthy balance between work and family life, level of physical strain at work and psychological demands at work. For example, in the pay domain the first item states that 'I feel I am being paid a fair amount for the work I do'; in the promotion domain the first item states that 'there is a lot of chance for promotion on my job'. Some of the items were positively worded while others were negatively-worded from the source. Questionnaires were distributed by the investigator. Only employees who had worked for at least six months in the hospitals were included. The respondents were informed about the purpose of the study and

were also assured of strict confidentiality. Verbal informed consent was obtained from each respondent because of the sensitive nature of the topic and to further safeguard confidentiality. The study was approved by the Joint Research Ethics Committee of the University of Calabar and the University of Calabar Teaching Hospital.

Data analysis was done with SPSS 14.0. In univariate analysis, summary statistics were generated and used to describe the socio-demographic characteristics and domain-specific satisfaction. Each standard work domain contains four items rated by respondents on a 6-point Likert scale; 1 - disagree very much, 2 - disagree moderately, 3 - disagree slightly, 4 - agree slightly, 5 - agree moderately, 6 - agree very much. Negatively worded items in each work domain were inversely recoded such that higher scores always represented higher job satisfaction.<sup>21</sup> Sums of scores for each work domain was calculated with a maximum score of 24 for each domain. The primary purpose of the JSS inventory was to estimate job satisfaction in a continuum.<sup>21</sup> However, Spector also recommended a cut-off of 16 or higher for satisfaction with each domain, score of 12 or less for dissatisfaction and any score in-between represented undecided respondents. Each non-standard work domain had one item similarly scored with respondents scoring 4 or more indicating satisfied respondents, else dissatisfied respondents. However, stress beyond work was a Yes/No item.

Three groups of explanatory/independent variables which could predict overall/global job satisfaction among respondents were identified in this study. The first group consisted of socio-demographic characteristics and work history of respondents, the second group consisted of satisfaction with the standard work domain satisfaction and the

third group consisted of satisfaction with the non-standard work domain/conditions. An initial bivariate analysis (chi-square) involving the single-item overall job satisfaction of respondents and each variable was carried out. However, for model stability in lieu of the sample size, only the standard work domains and sociodemographic characteristics/work history that were significantly associated with the overall job satisfaction of respondents ( $p < 0.05$ ) were selected and modelled in a binary logistic regression analysis. A 2-tailed  $p < 0.05$  was considered statistically significant.

## RESULTS

### Socio-demographic characteristics and work history of respondents

A total of 215 questionnaires were distributed and 157 (73%) were returned. Respondents were fairly distributed in nine clinical specialties (Table 1). Majority of the respondents 98 (62.4%) were registrars with a mean age of  $32.8 \pm 5.4$  years. More than half of them were aged 30-39 years, 86 (54.8%) and married 87 (55.4%). Two-thirds of the respondents were males 107 (68.2%), had worked for two years or less in their current employment 107 (68.2%) while 38 (24.2%) of them had ever been promoted. (Table 1)

Table 2 shows the bivariate analysis between socio-demographic characteristics/work history and overall job satisfaction of the respondents. More than half of respondents 89 (56.7%) expressed overall satisfaction with their work. Only marital status ( $p = 0.001$ ) and having at least a child ( $p = 0.032$ ) were significantly associated with overall job satisfaction of doctors. Sixty (69.0%) of respondents who were married had overall job satisfaction compared to 29 (41.4%) of respondents who were single. Therefore, a respondent who was married was more likely

to have overall job satisfaction than a respondent who was not married. Likewise, a respondent who had at least a child was more likely to have overall job satisfaction than a respondent who did not have a child. About two-thirds of respondents 44 (66.7%) who had at least a child had overall job satisfaction compared to 45 (49.5%) of respondents who did not have a child.

Age group ( $p = 0.345$ ), total duration of service ( $p = 0.724$ ), duration of service at present job ( $p = 0.440$ ), ever being promoted ( $p = 0.583$ ), and number of places where respondents had worked ( $p = 0.127$ ) were, however, not associated with overall job satisfaction. However, 45 (51.9%) of the respondents who belonged to the age group 30-39 years tended to be least satisfied compared to the younger 30 (60.0%) and older colleagues 14 (68.4%). Thirty-one (61.2%) of the respondents who had worked for a total of between 3-5 years tended to be more satisfied compared to 29 (53.8%) who had worked for less or 29 (53.8%) who had worked for greater number of years. This is in contrast to the trend in job satisfaction when the number of years spent in the present post was considered. Furthermore, respondents who had ever been promoted 23 (60.5%) tended to be more satisfied. The results also showed that there was a trend in being more satisfied as the number of places in which a doctor has worked increased.

### Standard work domains

Proportion of respondents satisfied with each of the work domains are as follows: pay 43 (27.4%), promotion 68 (43.3%), supervision 113 (72.0%), fringe benefit 33 (21.0%), contingent reward 40 (25.5%), operating procedures 53 (33.8%), coworkers 106 (67.5%), nature of work 130 (82.8%), communication 93 (59.2%), job autonomy 34 (21.7%), work hours 71 (45.2%).

**Table 1: Socio-demographic characteristics and work history of respondents**

Variable	Frequency (n =157)	Percent
<b>Age group (years)</b>		
20 - 29	50	31.8
30 - 39	86	54.8
≥ 40	21	13.3
<b>Sex</b>		
Male	107	68.2
Female	50	31.8
<b>Marital Status</b>		
Single	70	44.6
Married	87	55.4
<b>Has at least a child</b>		
Yes	66	42.0
No	91	58.0
<b>Total length of service (years)</b>		
≤ 2	53	33.8
3 - 5	51	32.5
≥ 6	53	33.8
<b>Current length of service (years)</b>		
≤ 2	107	68.2
3 - 5	27	17.2
≥ 6	23	14.6
<b>Ever been promoted</b>		
Yes	38	24.2
No	119	75.8
<b>Number of places worked</b>		
1	39	24.8
2 - 3	82	52.2
≥ 4	36	22.9
<b>Department</b>		
Community Medicine	16	10.2
Family Medicine	22	14.0
Internal Medicine	30	19.1
Obstetrics and Gynaecology	16	10.2
Ophthalmology	9	5.8
Paediatrics	24	15.3
Psychiatry	10	6.4
Surgery	26	16.6
Pathology	4	2.5
<b>Job title</b>		
Consultants	12	7.6
Senior registrar	18	11.5
Registrar	98	62.4
Medical officer	4	2.5
House officer	25	15.9

**Table 2: Association between socio-demographic characteristics/work history and overall job satisfaction of respondents**

Variable	Overall Job satisfaction		$\chi^2$ (p-value)
	Satisfied (n = 89)	Dissatisfied/Undecided (n = 68)	
<b>Age group (years)</b>			
20 – 29	30 (60.0)	20 (40.0)	1.742 (0.345)
30 – 39	45 (51.9)	41 (48.1)	
≥ 40	14 (68.4)	7 (31.6)	
<b>Sex</b>			
Male	58 (54.2)	49 (45.8)	0.844 (0.358)
Female	31 (61.2)	19 (38.8)	
<b>Marital Status</b>			
Single	29 (41.4)	41 (58.6)	11.98 (0.001)
Married	60 (69.0)	27 (31.0)	
<b>Has at least a child</b>			
Yes	44 (66.7)	22 (33.3)	4.618 (0.032)
No	45 (49.5)	46 (50.5)	
<b>Total length of service (years)</b>			
≤ 2	29 (53.8)	24 (46.2)	0.516 (0.724)
3 – 5	31 (61.2)	20 (38.8)	
≥ 6	29 (53.8)	24 (46.2)	
<b>Current length of service (years)</b>			
≤ 2	60 (56.1)	47 (43.9)	2.372 (0.440)
3 – 5	13 (48.1)	14 (51.9)	
≥ 6	16 (68.2)	7 (31.8)	
<b>Ever been promoted</b>			
Yes	23 (60.5)	15 (39.5)	0.301 (0.583)
No	66 (55.5)	53 (44.5)	
<b>Number of places worked</b>			
1	18 (46.2)	21 (53.8)	2.637 (0.127)
2 – 3	48 (58.8)	34 (41.3)	
≥ 4	23 (63.9)	13 (36.1)	

Table 3 shows the bivariate analysis between satisfaction with standard work domains and the overall job satisfaction of doctors. Satisfaction with all the standard work domains were significantly associated with the overall job satisfaction of respondents ( $p < 0.005$ ). A doctor who was satisfied with any of pay, promotion, supervision, fringe benefit, contingent reward, operating procedures, coworkers, nature of work, communication, job autonomy, and work hours, was more likely to have overall job satisfaction than a doctor who was dissatisfied (or undecided about) with any of the domains.

### **Non-standard work domains**

More than a third of respondents, 61 (38.9%) experienced stress outside of their work, 87 (55.4%) were satisfied with level of job security, 84 (53.3%) expressed satisfaction with recuperation after each working day, 82 (52.2%) were satisfied with workload distribution among co-workers, 109 (69.4%) were satisfied with training opportunities, 81 (51.6%) felt they had a healthy balance between work and family, 63 (40.1%) were satisfied with the level of physical strain at work, while 44 (28.0%) were satisfied with the level of psychological demand at work. Table 4 shows the bivariate analysis between non-standard work domains/conditions and the overall job satisfaction of doctors. Satisfaction with recuperation from previous day's work ( $p = 0.002$ ), workload distribution among workers ( $p = 0.015$ ), level of training and training opportunities ( $p = 0.012$ ), and employee's ability to maintain a healthy balance between working life and family life ( $p = 0.022$ ) were significantly associated with overall job satisfaction of doctors. A doctor who was satisfied with recuperation from previous day's work, distribution of workload among workers, training and training opportunities and ability of workers to

maintain a healthy balance between working life and family life, was more likely to have overall job satisfaction. Conversely, being under stress from factors beyond work ( $p = 0.853$ ), level of satisfaction with job security ( $p = 0.066$ ), satisfaction with level of physical strain at work ( $p = 0.452$ ) and psychological demands at work ( $p = 0.273$ ) were not significantly associated with overall job satisfaction of respondents. Respondents who were not under any stress beyond their work 57 (58.9%) tended to be more satisfied with their work; respondents who were satisfied with their job security 55 (63.2%) were more likely to be satisfied with their job, only slightly missing statistical significance; respondents who felt satisfied with the level of physical strain 38 (60.3%) and psychological demands 28 (63.6%) associated with their work also tended to be more satisfied with their work.

### **Binary logistic regression model of overall job satisfaction of doctors**

Table 5 describes the binary logistic regression model of overall job satisfaction of doctors. The model was significantly reliable (Omnibus test  $\chi^2 = 85.707$ ,  $p < 0.001$ ) and could correctly predict 80.9% of doctors who were satisfied with their work. Pay (AOR= 6.43, 95% CI= 1.17-35.27), contingent reward (AOR= 12.28, 95% CI= 1.18-127.97), operating procedures (AOR= 3.62, 95% CI= 1.03-12.67), communication (AOR= 3.07, 95% CI= 1.25-7.5), job autonomy (AOR= 3.70, 95% CI= 1.03-13.30), marital status (AOR= 0.184, 95% CI= 0.05-0.66) were independently associated with overall job satisfaction of doctors. For easier interpretation, the reference category of marital status could be reversed to single and the AOR= 5.43, 95% CI= 1.52-15.23.

**Table 3: Association between satisfaction with standard work domains and overall job satisfaction of respondents**

Variable	Overall job satisfaction		$\chi^2$ (p-value)
	Satisfied (n = 89)	Dissatisfied/Undecided (n = 68)	
<b>Pay</b>			
Satisfied	40 (93.0)	3 (7.0)	31.844(< .001)
Dissatisfied/Undecided	49 (43.0)	65 (57.0)	
<b>Promotion</b>			
Satisfied	48 (70.6)	20 (29.4)	9.440 (0.002)
Dissatisfied/Undecided	41 (46.1)	48 (53.9)	
<b>Supervision</b>			
Satisfied	76 (67.3)	37 (32.7)	18.343(<0.001)
Dissatisfied/Undecided	13 (29.5)	31 (70.5)	
<b>Fringe Benefit</b>			
Satisfied	31 (93.9)	2 (6.1)	23.615(<0.001)
Dissatisfied/Undecided	58 (46.8)	66 (53.2)	
<b>Contingent reward</b>			
Satisfied	39 (97.5)	1 (2.5)	36.413(<0.001)
Dissatisfied/Undecided	50 (42.7)	67 (57.3)	
<b>Operating Procedures</b>			
Satisfied	45 (84.9)	8 (15.1)	25.947(<0.001)
Dissatisfied/Undecided	44 (42.3)	60 (57.7)	
<b>Coworkers</b>			
Satisfied	70 (66.0)	36 (34.0)	11.618 (0.001)
Dissatisfied/Undecided	19 (37.3)	32 (62.7)	
<b>Nature of work</b>			
Satisfied	82 (63.1)	48 (36.9)	12.567(<0.001)
Dissatisfied/Undecided	7 (25.9)	20 (74.1)	
<b>Communication</b>			
Satisfied	67 (72.0)	26 (28.0)	21.908(<0.001)
Dissatisfied/Undecided	22 (34.4)	42 (65.6)	
<b>Job autonomy</b>			
Satisfied	28 (82.4)	6 (17.6)	11.643 (0.001)
Dissatisfied/Undecided	61 (49.6)	62 (50.4)	
<b>Work Hours</b>			
Satisfied	50 (70.4)	21 (29.6)	9.959 (0.002)
Dissatisfied/Undecided	39 (45.3)	47 (54.7)	

**Table 4: Association between satisfaction with non-standard work domain and overall job satisfaction of respondents**

Variable	Overall job satisfaction		$\chi^2$ (p-value)
	Satisfied (n = 89)	Dissatisfied/Undecided (n = 68)	
<b>Stress beyond your work</b>			
Yes	32 (52.5)	29 (47.5)	0.727 (0.394)
No	57 (58.9)	39 (41.1)	
<b>Satisfaction with Job security</b>			
Satisfied	55 (63.2)	32 (36.8)	3.389 (0.066)
Dissatisfied/Undecided	34 (48.6)	36 (51.4)	
<b>Satisfaction with recuperation</b>			
Satisfied	57 (67.9)	27 (32.1)	9.179 (0.002)
Dissatisfied/Undecided	32 (43.8)	41 (56.2)	
<b>Satisfaction with workload distribution</b>			
Satisfied	54 (65.9)	28 (34.1)	5.873 (0.015)
Dissatisfied/Undecided	35 (46.7)	40 (53.3)	
<b>Satisfaction with training</b>			
Satisfied	69 (63.3)	40 (36.7)	6.354 (0.012)
Dissatisfied/Undecided	20 (41.7)	28 (58.3)	
<b>Healthy balance between work and family life</b>			
Satisfied	53 (65.4)	28 (34.6)	5.211 (0.022)
Dissatisfied/Undecided	36 (47.4)	40 (52.6)	
<b>Job level of physical strain</b>			
Satisfied	38 (60.3)	25 (39.7)	0.565 (0.452)
Dissatisfied/Undecided	51 (54.3)	43 (45.7)	
<b>Psychological demands at work</b>			
Satisfied	28 (63.6)	16 (36.4)	1.202 (0.273)
Dissatisfied/Undecided	61 (54.0)	52 (46.0)	

A respondent who was satisfied with pay was six times as likely to have overall job satisfaction as a respondent who was not satisfied with pay. A respondent who was satisfied with contingent reward, operating procedures, communication, and job autonomy was 12 times, about four times, three times and about four times, respectively, as likely to have overall job satisfaction as a

respondent not satisfied with the respective domains. Furthermore, a respondent who was married was five times as likely to have overall job satisfaction as a respondent who was single.

**Table 5 Binary logistic regression model of overall job satisfaction of respondents**

Variable	Reference Category	p-value	AOR‡	95% CI†	
				Lower	Upper
Pay	Dissatisfied/Undecided	0.032*	6.43	1.17	35.27
Promotion	Dissatisfied/Undecided	0.718	0.83	0.31	2.25
Supervision	Dissatisfied/Undecided	0.178	2.04	0.72	5.78
Fringe Benefit	Dissatisfied/Undecided	0.601	0.48	0.03	7.72
Contingent Reward	Dissatisfied/Undecided	0.036*	12.28	1.18	127.97
Operating Procedures	Dissatisfied/Undecided	0.044*	3.62	1.03	12.67
Coworkers	Dissatisfied/Undecided	0.896	1.07	0.41	2.77
Nature of Work	Dissatisfied/Undecided	0.279	2.07	0.56	7.69
Communication	Dissatisfied/Undecided	0.015*	3.07	1.25	7.54
Autonomy	Dissatisfied/Undecided	0.045*	3.70	1.03	13.30
Work Hours	Dissatisfied/Undecided	0.641	0.78	0.27	2.24
Marital Status	Single	0.009*	5.43	1.52	15.23
Having a child	No child	0.074	0.31	0.08	1.12

\*Significant; ‡Adjusted Odds Ratio; †Confidence Interval

## DISCUSSION

Majority of respondents in this study were younger than 40 years of age. This is likely due to the fact that the staff strength of doctors in this study was composed mainly of resident doctors in training. The age distribution of doctors in this study was similar to that found in another study of job satisfaction among doctors in a teaching hospital in Benin where majority were similarly resident doctors in training.<sup>23</sup> Modal age group and mean age were exactly similar to other studies on job satisfaction among resident doctors in Kano<sup>24</sup> and Ibadan.<sup>25</sup> Although some studies have demonstrated association between age and job satisfaction,<sup>24, 25</sup> our study did not show a statistically significant difference possibly because the study was underpowered. The male to female ratio in our study was 2:1. This

may be expected to lower the average overall job satisfaction as studies have shown that women have lower expectations at their work and are thus generally more satisfied than men.<sup>26, 27</sup> Although our study demonstrated that women were more satisfied than men in the study population, this was not statistically significant at bivariate analysis.

Bivariate analysis of personal characteristics and overall job satisfaction revealed that only marital status and having a child were significantly associated with overall job satisfaction of doctors. Moreover, bivariate analysis of standard work domains and overall job satisfaction showed that each of the eleven work domain was significantly associated with overall job satisfaction of doctors.

Among the non-standard work domains, satisfaction with recuperation from previous day's work, workload, training and satisfaction with employees' ability to maintain a healthy balance between work life and family life were significantly associated with overall job satisfaction of doctors. However, in the binary logistic regression models of overall job satisfaction, satisfaction with pay, contingent reward, operating procedures, communication, job autonomy and marital status were independently associated with overall job satisfaction of doctors.

Being married independently predicted overall job satisfaction of doctors. Those who were married were five times as likely to have overall job satisfaction as those who were single. Marriage and family life may play a stabilizing role on peoples' lives. The influence of marriage on job satisfaction may be indirect and may be more related to overall life satisfaction which has been shown to be positively correlated with job satisfaction.<sup>28</sup> Desantis and Durst did a similar study of job satisfaction using national longitudinal survey among private and public sector employees in the United States of America and found that being married was independently associated with job satisfaction among public employees but not among private employees.<sup>29</sup> Also a detailed analysis of other national surveys found contrasting results. Single people had higher job satisfaction in Austria, Bulgaria, Germany, Portugal and Romania while single people were less satisfied than others in Denmark and Italy.<sup>1</sup> In Italy, those who were divorced and those who were separated were more satisfied.<sup>1</sup> In Netherlands, those who were never married and those who were divorced were less satisfied than married and singles.<sup>1</sup> The finding in the Calabar study was

consistent among doctors. This may be a reflection of the national trend and may exemplify the place of marriage in the African culture as opposed to what obtains in some other societies. Similar findings from our analysis of the non-standard work domains showed that a doctor who felt that he had a healthy balance between work and family life was more likely to be satisfied. This may emphasize the role which family-focused considerations may play on the overall job satisfaction of the employee doctors.

Standard work domain predictors from the model may be contextually grouped into two: those relating to employees' perceived gains from work (pay and contingent rewards) and those related to the day-to-day work processes (operating procedures, communication, and autonomy). JSS examines perceived gains in terms of employees' perception of being adequately remunerated, expectation of pay rises and motivations in the work place. Pay has been severally documented as a factor that is highly correlated with employee satisfaction.<sup>30</sup> Perhaps one of the most important and consistently documented predictors of job satisfaction among employees is pay.<sup>6, 10, 11</sup> There has been reports of persistent heavy emigration of doctors from sub-Saharan African which currently has one of the poorest doctor-patient ratio due majorly to poor remuneration. A study examined the trend in emigration of doctors from sub-Saharan Africa and found more than 50% increase in the migration of Nigerian doctors to the United States over a decade (2002-2011).<sup>31</sup> Thus, while the government expend scarce resources in the training of health workforce, it is economically even wiser to expend more resources to retain them. Otherwise, sub-Saharan African countries are locked in a vicious cycle of training health

workforce for the western nations. In contrast, pay was not a predictor among public employees in the study by DeSantis and Durst.<sup>29</sup>

Unlike the business environment, public hospitals appear to lack well developed formal structures for employee motivation apart from pay. Thus, it is unlikely that hospital administrators think through other possible contingent reward opportunities that may help improve doctors' job satisfaction. Our result showed that contingent reward domain was an important predictor variable with huge adjusted odds ratio. Employees who receive recognition for performing well at a task are more likely to be motivated to perform better and have more sense of worthwhile accomplishment from their job.<sup>30</sup> Lyons and coworkers found in their study that recognition was a predictor of job satisfaction among health worker.<sup>14</sup> French and colleagues also found that doctors were more satisfied if they were treated as equal members of the clinical team.<sup>32</sup>

A balance between work performance, operating procedures and job satisfaction is desirable. Doctors who were satisfied with the operating procedures domain were three times as likely to have overall job satisfaction as doctors not satisfied with the domain. Factored into the operating procedures domain were rules of work and workload. In the work of Lyon and colleagues, satisfaction with workload was reported as a predictor of job satisfaction among health workers.<sup>14</sup> Ogholafor and Adebakin studied job design, a measure of job mechanistic level among doctors in selected hospitals in Lagos. They reported an association of job design and all dimensions of job satisfactiion.<sup>33</sup> French and coworkers also reported that doctors who worked more sessions had lower job

satisfaction.<sup>32</sup> The less people have to work, the more satisfied they are with their work.<sup>1</sup>

Our findings also present opportunities for reflection on conscious use of good communication strategies as a management tool in the hospital. Spector's JSS examines employees' perception on clarity of organizational goal and clarity of employee's role in tasks. Doctors who expressed satisfaction in this domain were more likely to have overall job satisfaction. Data from Czech Republic showed that workers who are encouraged to come with new ideas and better ways of doing things and those whose bosses promote open communication from subordinates and who worked in a department that welcomes and openly discusses different opinions were more satisfied in their job than other workers.<sup>1</sup> The tradition among doctors especially senior-junior relationship is probably unique in that the junior doctors (mostly resident doctors) are in a tailored training. Designing adequate communication lines and feedback may improve job satisfaction and productivity irrespective of status.

Although a predictor of overall job satisfaction,<sup>1</sup> satisfaction with job autonomy is expected to be lower than average among health professionals generally as was found in our study (22%) because of the team-nature of their work. Thus, decisions regarding the way to work, the order in which work is done, when to work and method of working is probably beyond individual decisions. A doctor who was satisfied with the job autonomy domain was about four times as likely to have overall job satisfaction as a doctor who was dissatisfied with the job autonomy domain. Job satisfaction increase with workers participation, involvement and influence in decision making about how things are done in their organization. The more the

workers are able to participate in working decisions, the more satisfied they are with their work.<sup>1</sup> Freeborn also reported a similar finding that doctors who had a sense of control over the practice environment had better job satisfaction.<sup>34</sup> The implication for hospital administrators and clinical teams is enormous highlighting the importance of bottom-top approach in decision making. Opportunities for consensus on the order, the way, the time and the methods of clinical task execution could be explored whenever feasible. Similar results on job autonomy as a predictor of job satisfaction was demonstrated among resident doctors at the University College Hospital, Ibadan further emphasizing the importance of this predictor.<sup>25</sup>

The major limitation of this study is the low power resulting from the low sample size. Thus, there was a moderate chance of a type II error i.e. some variables that were screened out at bivariate analysis could have indeed been statistically significant with a larger sample. Similarly about a third of doctors who would have been eligible were on outside postings. This could have introduced bias if there was a systematic difference in the perceived job satisfaction between doctors enrolled in this study and those on outside postings. This study has identified strong predictors of overall job satisfaction among medical doctors in public hospitals in Calabar, Nigeria and provides a framework that could assist hospital administrators and clinical team leaders in understanding job satisfaction among doctors. We recommend that employers of doctors could use this predictive model to formulate policy to improve job satisfaction, to enhance productivity and to stem unrest.

### **Competing interests**

The authors declare no competing interest.

### **Authors' contributions**

SB conceived the idea, SB and MCA developed the proposal and planned the study, SB collected data, SB analyzed data, DTA critically appraised the analysis, SB and DTA drafted the manuscript, all authors critically appraised the manuscript and approved the final version.

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