

## ORIGINAL ARTICLE

## Assessment of Stress and Its Predictors Among Female Medical Doctors

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**DISCLOSURE**

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**ABSTRACT**

**Background:** Stress is a common factor associated with the medical profession. Among female doctors, this unstable mental state would greatly reduce work productivity as well as the quality of life of these female physicians.

**Objectives:** To evaluate the stress level and predictors of this in female medical practitioners in South-East Nigeria.

**Methodology:** A cross-sectional study involving female medical practitioners using the international K-10 stress assessment scoring system.

**Results:** 236 female medical doctors were evaluated in this study. Overall, 37.3% were found to be stressed: 21% mildly stressed, 10% moderately stressed and 6% severely stressed. Significant predictors of stress were age of which those 31-40 years were the greatest proportion, motherhood, marital status and cadre of practice; while non-significant predictors were having a physician as a spouse, years of medical practice and taking night calls.

**Conclusion:** The level of stress observed from this study is high. Advocacy to and interventions by employers of labour will greatly aid in mitigating potential stressors thus enhancing the mental state of female doctors.

**Keywords:** Mental state, Women, Physicians, Stress disorder, Nigeria

## INTRODUCTION

Stress is a physical, mental and emotional factor that causes bodily and mental tension.<sup>1</sup> Stress can cause and influence the course of many medical conditions including psychological ones such as depression and anxiety.<sup>2</sup> Anxiety about a situation could be positive but stress is always negative.<sup>2</sup> It results in low productivity and has a negative influence on the home.

Women have been reported to have very high levels of stress (8 to 10 points on a 10 point scale).<sup>3</sup> They have been found to be more likely to report stress when compared to men (28% vs. 20%).<sup>3</sup> Women have also been found to have increasing levels of stress over the years.<sup>3</sup> Differences however might exist in the manner in which married women experience stress when compared to single ladies.<sup>3</sup>

There is a lot of stress involved in medical practice.<sup>4,5,6,7,8,9</sup> This mostly stems from the fact that the doctors, while taking care of other people's lives, might make mistakes or commit errors which could be costly and sometimes irreversible. The medical doctor is therefore expected to be in a perfect state of mind.

Female doctors have been reported to have very high levels of stress.<sup>10</sup> As far back as two decades ago, women physicians were reported to have 1.5 times the odds of reporting being burnt out compared to male physicians.<sup>11</sup> Even female house officers have been reported to have higher levels of stress in the work place.<sup>12,13</sup>

Some predictors of stress in female physicians include demands of the job, patients' expectations, role stress, night calls, time pressure among others.<sup>12,14</sup>

In Nigeria, there is a dearth of research publications on stress in female doctors. The few available studies focused on stress in resident doctors among whom the females were still found to be more stressed.<sup>8,15</sup> There is therefore a need to study stress in female physicians in Nigeria and its predictors. The aim of this study was to determine the level of stress and its predictors among female medical doctors in South-East Nigeria as well as to explore possible solutions to control the stress.

## METHODOLOGY

This was a descriptive cross-sectional study involving female medical graduates from South-East Nigeria consenting to participate in the research. Data was collected via an online questionnaire adapted from the Kessler Psychological Distress Scale (K10).<sup>16</sup> These female physicians accessed the link to the questionnaire posted on social media groups for medical women, medical officers as well as resident doctors. Participants were consecutively enrolled into the research. The identity of the participant was entirely anonymous since it was an online survey. As a consequence, the confidentiality of the participants was ensured at all times. Participation was also voluntary.

The dependent variable was presence or absence of stress while the independent variables were age, marital status, years of medical practice, cadre of practice, among others. Data was described in percentages and represented in tables and charts. Chi-square analysis was used to test associations. Data was analyzed using SPSS 21 and the level of significance was set at  $p < 0.05$ .

## RESULTS

Two hundred and thirty-six female doctors participated in this research. About forty-seven percent of the study subjects were between the ages of 20 and 30 years while 43.2% of the respondents were medical officers (Table 1).

About thirty-seven percent of the study population were stressed (Figure 1) while 15.9% of those stressed had severe stress (Figure 2). Age, marital status, having children and the cadre of medical practice were significantly associated with the presence of stress in the study subjects ( $p = 0.019, 0.002, 0.017$  and  $0.021$  respectively) - Table 2.

Some of the suggestions proffered by the study subjects for the control of work stress among female doctors included: daily leisure time, compulsory leave, better work environment, better work relationship between seniors and juniors, reduction in monthly calls, improved work schedules, provision of amenities like crèches and breastfeeding rooms and encouraging better support system. Others include regular exercise, balanced diet, implementing concessions for pregnant and nursing mothers, encouraging a friendly work environment, encouraging hobbies, employing more staff, extending maternity leave, encouraging female physicians to work around their spouse as much as possible and increased pay.

## DISCUSSION

A high level of stress was found among female doctors in this research.

Approximately 37 out of every 100 female doctors in South-East Nigeria would report stress.

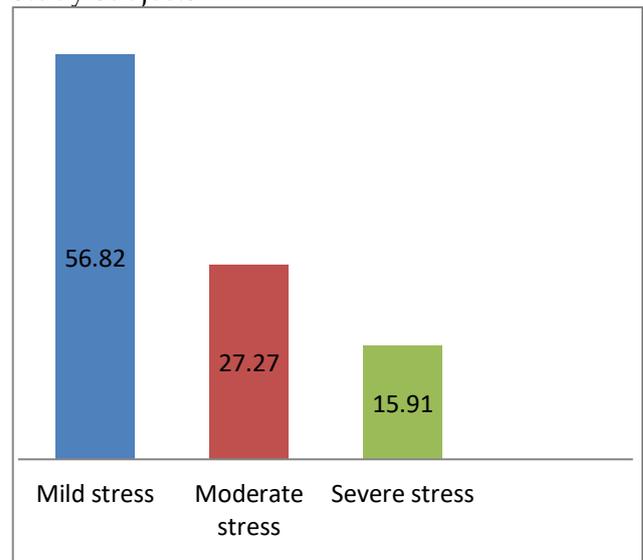
**Table 1.** Demographic characteristics of the study subjects

Characteristic	Freq	%
<b>Age category (years)</b>		
20 - 30	110	46.6
31 - 40	106	44.9
41 - 50	16	6.8
51 - 60	4	1.7
Total	236	100.0
<b>Marital status</b>		
Single	64	27.1
Married and living with spouse	104	44.1
Married but spouse resides elsewhere	56	23.7
Divorced	2	0.8
Separated	4	1.7
Not given	6	2.5
Total	236	100.0
<b>Having a physician as a spouse</b>		
No	114	66.3
Yes	58	33.7
Total	172	100.0
<b>Children</b>		
No	104	44.1
Yes	132	55.9
Total	236	100.0
<b>Number of children</b>		
None	104	44.1
<3	68	28.8
3 - 5	64	27.1
Total	236	100.0
<b>Years of medical practice</b>		
<5	114	48.3
5 - 10	74	31.4
>10	44	18.6
Not given	4	1.7
Total	236	100.0
<b>Cadre of practice</b>		
Not working	8	3.4
House officer	36	15.3
Medical officer	102	43.2
Resident doctor	72	30.5
Consultant	14	5.9
Other	4	1.7
Total	236	100.0

**Figure 1.** Proportion of stressed female physicians from the study



**Figure 2.** Categorization of the stressed study subjects



**Table 2.** Association between some factors and the presence of stress

Factors		Stress		Total	X <sup>2</sup>	p-value
		Absent (%)	Present (%)			
Age	20 - 30	78 (70.9)	32 (29.1)	110 (100.0)	9.966	*0.019
	31 - 40	56 (52.8)	50 (47.5)	106 (100.0)		
	41 - 50	10 (62.5)	6 (37.5)	16 (100.0)		
	51 - 60	4 (100.0)	0 (0.0)	4 (100.0)		
	Total	148(62.7)	88 (37.3)	236 (100.0)		
Marital status	Single	46 ( 71.9)	18 (28.1)	64 (100.0)	17.260	*0.002
	Married living with spouse	72 ( 69.2)	32 (30.8)	104(100.0)		
	Married not living with spouse	24 ( 42.9)	32 (57.1)	56(100.0)		
	Divorced	2(100.0)	0 (0.0)	2(100.0)		
	Separated	4(100.0)	0 (0.0)	4(100.0)		
	Total	148(64.3)	82 (35.7)	230(100.0)		
Spouse - physician	No	70 (61.4)	44 (38.6)	114(100.0)	0.618	0.432
	Yes	32 (55.2)	26 (44.8)	8(100.0)		
	Total	102(59.3)	70 (40.7)	172(100.0)		

<b>Having children</b>	No	74 (71.2)	30 (28.8)	104(100.0)	5.667	<b>*0.017</b>
	Yes	74 (56.1)	58 (43.9)	132(100.0)		
	Total	148 (62.7)	88 (37.3)	236(100.0)		
<b>Number of children</b>	None	74 (71.2)	30 (28.8)	104(100.0)	5.669	0.059
	<3	38 (55.9)	30 (44.1)	68(100.0)		
	3 - 5	36 (56.3)	28 (43.8)	64(100.0)		
	Total	148(62.7)	88 (37.3)	236(100.0)		
<b>Years of medical practice</b>	<5	74 (64.9)	40 (35.1)	114(100.0)	3.109	0.211
	3 - 5	40 (54.1)	34 (45.9)	74(100.0)		
	>10	30 (68.2)	14 (31.8)	44(100.0)		
	Total	144(62.1)	88 (37.9)	232(100.0)		
<b>Cadre</b>	Not working	6 (75.0)	2 (25.0)	8 (100.0)	13.249	<b>*0.021</b>
	HO	26 (71.2)	10 (27.8)	36 (100.0)		
	MO	56 (54.9)	46 (45.1)	102(100.0)		
	Resident	44 (61.1)	28 (38.9)	72(100.0)		
	Consultant	14(100.0)	0 (0.0)	14(100.0)		
	Other	2 (50.0)	2 (50.0)	4(100.0)		
	Total	148(62.7)	88 (37.3)	236(100.0)		
<b>Night calls</b>	No	40 (66.7)	20 (33.3)	60 (100.0)	0.667	0.414
	Yes	102(60.7)	66 (39.3)	168(100.0)		
	Total	142(62.3)	86 (37.7)	228(100.0)		
<b>Frequency of calls</b>	None	40 (74.1)	14 (25.9)	54 (100.0)	5.169	0.160
	<3/month	18 (60.0)	12 (40.0)	30 (100.0)		
	3- 6/month	46 (62.2)	28 (37.8)	74 (100.0)		
	>6/month	38 (54.3)	32 (45.7)	70 (100.0)		
	Total	142(62.3)	86 (37.7)	228(100.0)		

\*Significant,  $p < 0.05$ 

HO - House officer

MO - Medical officer

This is similar to what was reported by the British Medical Association and even mirrors what has been reported among resident doctors and house officers.<sup>2,6,7,12</sup> Stewart *et al.* also reported high levels of work stress in women physicians.<sup>10</sup> This

could be accounted for by high levels of pressure for perfection faced by these female physicians in their work places.

Age was significantly associated with the presence of stress in this study and the 31-40 year old age category reported the highest stress. Similar findings were reported by the British Medical Association.<sup>2</sup> This could be because people are generally most active in that age category. Women above 50 reported the least stress in this study. Stewart *et al.* had similar findings.<sup>10</sup> Work schedules most likely would have stabilized and may even be winding down at that age.

Marital status had a significant association with stress and women whose spouses were living elsewhere reported more stress than single ladies and other married female doctors. This again tallies with what was reported by the British Medical Association.<sup>2</sup> It is quite challenging to handle work without adequate support at home.

Child care is known to be extremely tasking. Though the number of children one had did not relate significantly with the presence of stress in this study, having a child at all did. Working in hospitals that had none or poor facilities to support women caring for their children could be responsible for this.

The employment cadre of the female doctor had a significant association to the finding of stress; medical officers reported more stress. This varies with the widely held opinion that resident doctors experience more work stress than other cadres of physicians.<sup>7,8,9</sup> Medical officers constituted a greater proportion compared to residents in this research and might explain this finding.

Taking night calls and the frequency of those calls did not associate significantly with the presence of stress. This is at

variance with what has been reported among residents and house officers.<sup>7,8,9,12</sup> This could be because residents and house officers did not form the bulk of the doctors assessed. Also, with more experience, doctors, even females, might become adapted to the calls.

Being married to a physician had no significant association with the presence of stress in this study though the greater proportion of stressed female physicians were not married to fellow physicians. This could be because a physician spouse might understand the rigors of the profession in such a way as to provide necessary support. Similarly, the number of years of medical practice had no significant association with stress from this study though the greater proportion of stressed female doctors in this study had less than 5 years of practice. This might be explained by the effect of experience; with more experience evidenced by greater number of years of practice, the female physicians became better equipped to deal with their work situation.

Most of the suggestions proffered by the doctors in this research bordered on improving the physical and emotional working environment for the female physician as well as providing and encouraging social support system. These when implemented may improve productivity and mental health of female physicians and physicians as a whole.

#### CONCLUSION

The stress level of the female physician from this study was high. The work environment needs to be improved to reduce this. Women Physicians need to be provided the necessary support in order to carry out their duties optimally as well as coordinate other aspects of their lives effectively.

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