

**Original article****Pattern of anxiety psychopathology experienced among postgraduate medical trainees**Olagunju AT<sup>1</sup>, Ogundipe OA<sup>2</sup>, Lasebikan VO<sup>3</sup>, Coker AO<sup>4</sup>, Asoegwu CN<sup>5</sup>**Abstract**

**Objectives:** Postgraduate medical training is characteristically intensive and stressful. Given that anxiety disorders are often linked with stress-related scenarios; awareness of the burden of anxiety disorders among postgraduate medical trainees and their determinants is essential for informed intervention. This study was set to investigate the pattern of anxiety psychopathology, and to determine its correlates among doctors in a Nigerian postgraduate medical training facility. **Methods:** The participants, made up of 204 resident doctors were administered questionnaire to elicit their socio-demographic and work related variables. Subsequently, 12-item General Health Questionnaire (GHQ-12) was used to ascertain the presence of emotional distress, and the *Structured Clinical Interview for Diagnostic & Statistical Manual for Mental Disorders-fourth edition [DSM-IV] Axis-1 Disorders, Non-patient edition (SCID-1/NP)* was administered to characterize anxiety related psychopathology in the participants. **Results:** The mean age of participants was 33.44 ( $\pm 4.50$ ). In all, 120 (58.8%) respondents reported various difficulties with their examinations, 14 (8.3%) reported having physical disorder and 59 (28.9%) respondents were emotionally distressed. The prevalence of anxiety psychopathology based on *DSM-IV* criteria was 13.2% and the pattern elicited based on recognised categories include generalized anxiety disorder (4.9%), obsessive-compulsive disorder (3.4%), specific phobia (2.4%), social phobia (1.5%) and substance induced anxiety disorders (1.0%). Having additional qualification to the medical degree seems protective against anxiety psychopathology ( $\chi^2 = 3.91$ ;  $df=1$ ;  $p < 0.05$ ), while those with emotional distress ( $\chi^2 = 17.54$ ;  $df=1$ ;  $p < 0.001$ ) were more likely to experience anxiety. **Conclusion:** Comprehensive and need-based mental health services with psychosocial support for trainee doctors are implied. Future research focusing on modifiable predictors of mental health challenges among resident doctors and their linkage with specific aspects of training is indicated.

**Keywords:** anxiety disorders; correlates; postgraduate medical trainees; prevalence

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**Introduction**

Anxiety disorders are one of the commonest types of mental disorder, and highly prevalent in the general population across many settings.<sup>1</sup> However, disparate findings with regard to the burden of anxiety disorders have been noted across contexts; with up to 18.1% incidence rate and 28.8%

lifetime prevalence observed in previous study.<sup>2</sup> Closely linked is that anxiety disorders contribute significantly to the global burden of diseases and are much more encountered in stress-related scenarios, including work and training settings.<sup>1-4</sup> While anxiety can be a normal reaction to stress as well as enhance performance when faced with challenges;

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**Table 1:** Clinical history/work related stressors as perceived by participants

Variables	Frequency (n)	Percentage (%)
<b>Difficulty preparing for exams</b>		
Yes	120	58.8
No	84	41.2
<b>Perception of workload</b>		
Not heavy	58	28.4
Heavy	146	71.6
<b>Perception of call duty</b>		
Stressful	120	58.8
Not stressful	70	34.3
Not applicable	14	6.9
<b>Salary commensurate with job</b>		
Yes	31	15.2
No	173	84.8
<b>Demand of job on private life</b>		
Not at all	23	11.3
Mildly	42	20.6
Moderately	112	54.9
Severely	27	13.2
<b>Physical disorder</b>		
Yes	14	6.9
No	190	93.1
<b>Emotional distress (GHQ scores)</b>		
Cases ( $\geq 3$ )	59	28.9
Non-cases ( $< 3$ )	145	71.1
<b>Doctor-doctor conflict</b>		
Yes	46	22.5
No	158	77.5
<b>Time for social activity</b>		
Yes	95	46.6
No	109	53.4
Total	204	100

GHQ-General Health Questionnaire

**Table 2:** Types of Anxiety Disorders and DSM-IV codes

Variables/ codes	Frequency (n)	Percentage (%)
GAD** (300.02)	10	4.9
OCD* (300.3)	7	3.4
Specific phobia (300.29)	5	2.4
Social phobia (300.23)	3	1.5
SIAD (291.8/292.89)	2	1.0
Total	27	13.2

\*OCD- Obsessive compulsive disorder; \*\*GAD- Generalized Anxiety disorder, SIAD-Substance induced Anxiety disorders

it is however counterproductive, distressing and impairs functioning if severed enough to constitute medical disorder – ‘anxiety disorders.’ Common types of anxiety disorders based on *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) include generalized anxiety disorder (GAD), panic disorder, agoraphobia,

social anxiety disorder (SAD), obsessive-compulsive disorder (OCD), specific phobias, and post-traumatic stress disorder (PTSD) among others.<sup>5</sup> Additionally, anxiety related psychopathologies can occur in close proximity with other mental and physical pathologies, thereby constituting diagnostic challenge.

Postgraduate medical training is not only stressful, but frequently associated with adverse psychosocial work characteristics that may constitute risk for anxiety disorders among the trainees. This is partly due to the need for residents to cope with both professional and personal stressors in the bid to acquire skills with attributes that are needed for successful career as medical specialist.<sup>6,7</sup> This is further compounded as they are frequently expected to be proficient clinicians, educators, and administrators at the end of the residency training.<sup>7</sup> A number research works have identified some specific factors as constituting stressors among postgraduate medical trainees. Such factors include high patient work load, poor work environment, distant accommodation, lack of recreational services, indebtedness, length of time spent in training, lack of social support, problems of relocation, difficult patients, and gender related issues among others.<sup>8-13</sup>

The impact of unattended mental health disorders like anxiety disorders in the setting of work place is significant; frequently described in terms of direct (associated with the cost of treatment) and indirect (that is related to reduction in

productivity due to the illness) costs. For instance, previous estimate in the United States reported about 46.6 billion dollars as the annual economic costs associated with anxiety disorders, and this constitutes 13.1% of the expenditure for mental illness.<sup>14</sup> To further illustrate the grave consequences

of anxiety disorders in the setting of work, affected individuals may face difficulties in meeting their job demands, drift into jobs with low resources, artificially perceive their work situation more negatively and show higher levels of burnout in a vicious pattern.<sup>15</sup> In relation to postgraduate medical training, resident's psychosocial distress resulting from anxiety disorders has immediate or long-term consequences on patient's related issues resulting in poor treatment satisfaction and adherence.<sup>15, 16</sup> Similarly, the experience of anxiety disorders may adversely impact the resident mental and physical health leading to increase absenteeism, conflict with authorities, difficult interpersonal relationship and reduced work performance among others.<sup>16, 18, 19</sup>

Generally, anxiety disorders are treatable with either pharmacological or psychotherapeutic strategy.<sup>20</sup> Similarly, preventive interventions using what is known on the identified risk factors of anxiety disorders in specific population have been found to be effective. Unfortunately, the dearth of information on the burden of anxiety disorders and the related risk factors among postgraduate medical trainees is a significant set-back to the promotion of their mental wellbeing towards improved training. This study aims to determine the prevalence of anxiety disorders and the associated work related variables among postgraduate medical trainees. Such information, though currently lacking is useful in providing insight into the mental health of resident doctors and needed in planning preventive mental health service while ensuring qualitative training.

Given that this study is focused on a novel, yet germane issue (anxiety disorders) among resident doctors, its findings will be needful in addressing a key mental health challenge among resident doctors and provide direction for evolving support resources for postgraduate medical training. It is postulated that postgraduate medical trainees would experience diverse types of anxiety disorders, and psychosocial as well as work related factors would interplay as key determinants.

## **Materials and Methods**

### *Study population*

This descriptive cross-sectional study was conducted at the Lagos University Teaching Hospital (LUTH) among consenting resident doctors in all departments where residency training is being offered. The study population was made up of postgraduate medical trainees who were at various stages of training, typically grouped into those prior and post part-one fellowship examinations in either the West African

Postgraduate Medical College or the National Postgraduate Medical College otherwise referred to as junior registrars and senior registrars respectively. Eligible participants who gave informed consent and met the study criterion of spending at least 6 months in training to ensure that the resident was familiar with the dynamics of the day-to-day activities of the training were recruited. The study participants consist of 204 post graduate medical trainees based on calculated sample size.<sup>21</sup> In each department, residents were listed and allocated tallies. The first doctor in each department was selected by simple random technique and subsequent participants by systematic random sampling method until each quota was satisfied

### **Ethical Approval**

Ethical approval was obtained before the start of the study by sending the protocol to the institution's ethical committee. Informed consent was obtained from all participants after explaining the objectives and nature of the study to them as well as reassured them of the freedom to decline consent at any point without any negative consequence. Confidentiality was ensured on all the participants' information. Participants with anxiety disorders and emotional distress were counselled and referred appropriately.

### *Study procedure*

Eligible participants were interviewed with designed questionnaire to inquire about variables like age, gender, marital status, number of children, religion, specialty of the resident doctor, level in residency training and length of training, perception of work load, call duty, remunerations, management support, work effects on private life, and other social history. Subsequently, participants were subjected to General Health Questionnaire-12 (GHQ-12)<sup>22</sup> to determine the presence of emotional distress based on a cut-off score of 3 and above. This was followed by interview with the Structural Clinical Interview for *DSM-IV* Axis 1 Disorders, Non patient Edition (SCID 1/NP)<sup>23</sup> to elicit and characterize the anxiety psychopathology in participants.

### *Data Analyses*

The questionnaires were serialized and information yielded by each was entered directly into the computer using the Statistical Package for Social Sciences- seventeenth edition (*SPSS-17*)<sup>24</sup> to generate frequency tables, percentages and cross tabulations. Non parametric tests such as chi-squared statistics were used to test differences for categorical variables. Level of significance was set at  $p \leq 0.05$ .

**Table 3:** Factors associated with anxiety disorders among participants

Variables	Anxiety disorders		$\chi^2$	p-value
	Yes n (%)	No n (%)		
<b>Age</b>				
≤30	6 (11.5)	46 (88.5)	0.8	1.0
31-35	14 (14.1)	85 (85.9)		
36-40	6 (15.4)	33(83.6)		
≥41	1 (7.1)	13 (92.9)		
<b>Sex</b>				
Male	15 (12.6)	104(87.4)	0.1	0.76
Female	12(14.1)	73(85.9)		
<b>Marital status</b>				
Unmarried	12 (14.3)	72(85.7)	0.1	0.71
Married	15 (12.5)	105(87.5)		
<b>Number of children</b>				
None	15 (15.3)	83(84.7)	5.7	0.61
One	2 (5.3)	36(94.7)		
Two	7 (22.6)	24 (77.4)		
≥Three	3 (8.1)	34 (91.9)		
<b>Academic qualifications</b>				
MBBS or BDS	25 (16.2)	129(83.8)	3.91	<0.05
Additional qualifications	2 (4.0)	48 (96.0)		
<b>Departments of subjects</b>				
Dental Surgery	6 (25.0)	18 (75.0)	5.7	0.46
O&G	1 (4.3)	22 (95.7)		
Paediatrics	2 (11.8)	15 (88.2)		
Medicine	7 (16.7)	35 (83.7)		
Surgery	4 (8.9)	41 (91.1)		
Laboratory medicine	7 (13.2)	48 (86.8)		
<b>Level of residency training</b>				
Registrar	17 (13.1)	113 (86.9)	1.1	0.83
Senior registrar	10 (14.7)	58 (85.3)		
Post part 11 registrar	-	6 (100)		
<b>Perception of workload</b>				
Appropriate	4 (6.9)	54 (93.1)	2.9	0.21
Heavy	18 (16.2)	93 (83.8)		
Very heavy	5 (14.3)	30 (85.7)		
<b>Exams preparation difficulty</b>				
Yes	18 (15.0)	102 (85.0)	0.8	0.38
No	9 (10.7)	75(89.3)		
<b>Perception of call duty</b>				
Stressful	14 (11.7)	106 (88.3)	1.1	0.32
Not stressful	10 (14.3)	60(85.7)		
Not applicable	3 (21.4)	11 (78.6)		
<b>Emotional distress</b>				
Yes	42(71.2)	17(28.8)	17.52	<0.001
No	10(6.9)	135(93.1)		

MBBS-Bachelor of medicine, BDS- Bachelor of dentistry, O&G-Obstetrics and Gynaecology

## Results

### Demographic profile of participants

The mean age for all the participants was 33.44 ± 4.5 years and their age ranged from 24 to 51 years. Majority of the participants, 99(48.5%) respondents were between 31-35years, 52(25.5%) belong to age group 30 years and below; 39(19.1%) were between 36-40 years; while fourteen (6.9%) were aged 41 years and above. The larger proportion, 119(58.3%) participants were of the

male gender, 58.8% of them were married, and 98(48%) respondents reported having no children. Majority were Christians [174 (85.3%)]. Approximately a quarter of the residents [50(24.5%)] had additional academic qualification in addition to their medical degree. Fifty (24.5%) respondents had been in the training for less than a year, while 23 (11.3%) reported training duration of more than 5 years. Two thirds [130 (63.7%)] of them were registrars. The distribution of subjects by departments based on the groupings depicted below showed that majority of the participants, 53(26%) was in Laboratory medicine(Radiation biology, Radio-diagnosis, Haematology, Clinical pathology, Morbid Anatomy and Microbiology), 24(11.8%) respondents in Dental surgery (maxillofacial, restorative, oral pathology, child dental and restorative), 45(22.1%) in Surgery (Ear, Nose and Throat (ENT), Ophthalmology, Surgery and Anaesthesia), 23(11.3%) participants in Obstetrics & Gynaecology, 42(20.6%) in Medicine (Psychiatry, Community medicine and Family medicine) and 17(8.3%) respondents were in Paediatrics.<sup>13</sup>

More than half (58.8%) of the participants reported different challenges with their examinations. Such difficulties include ambiguous curriculum, lack of enough time to prepare and inadequate resources among others. Fifty-eight (28.4%) participants were of the opinion

that their workload was not heavy. Over half (58.8%) of them perceived their call duty as stressful, while 6.9% observed no duty call due to the nature of work in their department, in particular Community Medicine. Again, majority (84.8%) of the respondents reported that their salary was not commensurate with their work load. A little above two-thirds (68.1%) claimed that the residency programme posed moderate to severe demands

on their private life, while about a fifth (20.6%) reported that the demand of their job on their private life was only mild ( See Table 1).

#### *Prevalence of emotional distress and anxiety psychopathology among participants*

Fifty nine (28.9%) participants score  $\geq 3$  in GHQ-12<sup>22</sup> and were regarded as cases of emotional distress, and the rest 145 (71.1%) participants who scored below 3 in GHQ-12 were labelled as non-cases. The prevalence of anxiety psychopathology among the subjects was 13.2% based on *DSM-IV* Axis 1 diagnosis using SCID-1 NP.<sup>[23]</sup> (See the figure)

#### *Categories of anxiety psychopathology with DSM-IV codes*

Of the 27(13.2%) respondents that had anxiety psychopathology, 10(4.9%) respondents met the *DSM-IV* criteria for generalized anxiety disorder [300.02], 7(3.4%) obsessive-compulsive disorder (OCD) [300.3], 5(2.4%) specific phobia [300.29], 3(1.5%) respondents were diagnosed with social phobia [300.23] and 2 (1.0%) with substance induced anxiety disorder [291.8/292.89] (See table 2).

#### *Factors associated with anxiety disorders*

As shown in table 3, participants without additional academic degree to their medical qualification, 25(16.2%) were more likely to experience anxiety disorders in comparison to those with additional degree 2(4.8%) and not having additional degree to the medical qualification was statistically associated with anxiety disorders ( $\chi^2 = 3.91$ ;  $df = 1$ ;  $p < 0.05$ ). In the same vein, presence of emotional distress correlated positively with anxiety disorders among the participants ( $\chi^2 = 17.54$ ;  $df = 1$ ;  $p < 0.001$ )

Other factors like age, sex, marital status, number of children, residents' departments, level of training, work related stressors were not significantly associated with experience of anxiety disorders statistically ( $p > 0.05$ ). However despite absence of statistical significance, it is note worthy that over-representation of those with anxiety disorders was observed among those aged 31-35 years, without children, registrars, who perceived work load to be heavy, with difficulty preparing for examination and those who perceived their call duty as stressful.

#### **Discussion**

Postgraduate medical trainees often play vital roles in health service delivery while acquiring training. They constitute significant fraction of medical professionals globally, and particularly in the Nigerian health workforce. To this end, any compromise in their wellbeing does not only portend grave consequences to their training,

but detrimental to the care of people within the coverage of their professional expertise.<sup>25, 26</sup> The findings of significant burden of anxiety disorders and influence of psychosocial factors as determinants of anxiety disorders among resident doctors in this study underscore the stressful nature of postgraduate training as well as the potential vulnerability of trainees to emotional ill-health that warrants intervention.

In more specific term, emotional distress as an indicator of the likelihood of psychiatric morbidity was found in 28.9% respondents. This result is similar to some earlier international studies.<sup>27, 28</sup> Similar observations have been fielded locally, for instance, Yusuf et al.,<sup>12</sup> reported a prevalence of psychiatric morbidity in about one in four (25.7%) residents in Ilorin, in Northern Nigeria; likewise Ogunniyi [Ogunniyi SO (2005) Psychiatric Morbidity among resident doctors in a Nigerian Teaching Hospital. A dissertation submitted for the award of fellowship by the West African College of Physician] reported a closely similar point prevalence of psychiatric morbidity (27.1%) among the resident doctors in similar context. The prevalence rates for either emotional distress or psychiatric morbidity among resident doctors in the earlier mentioned studies are many folds what is obtainable among the general population<sup>[1]</sup> and indicative of the suggestion that residency training is significantly associated with psychosocial stressors that may constitute risk for emotional illnesses.<sup>10-13</sup>

The prevalence of 13.2% for any *DSM-IV* anxiety disorders in this study indicates that more than a tenth of the study participant was affected. This prevalence rate for anxiety disorders is slightly lower than the 12-month prevalence of 18.1% previously reported in the general population in the United States of America.<sup>2</sup> However, it is much higher than the 12 months (4.1%) prevalence rate reported by Gureje *et al*<sup>1</sup> in the Nigerian community. In the work by Gureje *et al.*,<sup>[1]</sup> a much larger sample size of 4984 could explain the lower rate and it was a community study. Again, the significantly higher prevalence of anxiety disorders in this study in comparison to what is obtainable in the general population exemplifies the vulnerability of those within stress related scenarios (resident doctor in his instance) to develop anxiety disorders. In spite of the foregoing, there is a wide variation in the prevalence rates reported for both lifetime and 12-month anxiety disorders across studies generally. For example, a 12-month rate of 30% was reported

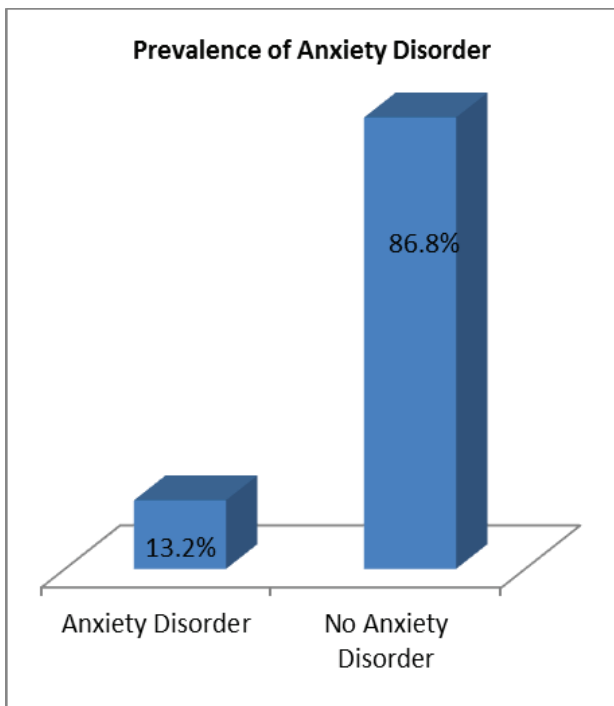


Figure : 1

for the USA, 23% for Australia and 9.6% for Western Europe, even when identical ascertainment tools had been used.<sup>2</sup> The reason for the observed differences in prevalence rate of anxiety disorders in this study when compared to some of the cited studies may be due to methodological issues like sampling, study design, diagnostic instrument used, time of assessment in relation to stage of residency training and the fact that most African cultures do not have words to describe anxious state.

In general, the pattern of distribution of the types of anxiety disorders among resident doctors in this study is similar to what has been fielded in previous works;<sup>29,30</sup> although the specific burden of sub-types of anxiety disorders in this study are different from the ones reported in the cited studies. For instance, while 3.4% was reported for generalised anxiety disorder in this study, Didden *et al*<sup>29</sup> reported a prevalence rate of 13% for generalized anxiety disorder, and 7% for panic disorder among residents in internal medicine in a community clinic in the United States. Similarly, Earle & Kelly<sup>30</sup> reported a rate of 12% for general anxiety symptoms and 2% for panic syndrome among medical residents in Ontario. Thus, the prevalence reported in this study is lower than what has been reported elsewhere in the world. This is surprising as residents in this part of the world would likely be faced with challenges which have been overcome by the developed countries for example lack of resources, poor work

environment, lack of recreational services within the hospital environment among others.<sup>10</sup> On the other hand, finding suggestive of better resilience among resident doctors in this study in comparison to their counterparts elsewhere may be pointer to the role of factors known to be protective against mental disorders like better social network and socio-cultural issues in this environment.

It is interesting to note in this study that having additional academic degree with the medical degree was protective against the experience of anxiety disorders among the participants. This finding may be adjudged to be due to the pressure experienced by medical professionals with only first medical degree; especially as there is indication to suggest that postgraduate medical training is believed to be associated with better remuneration, job security and success in medical career.<sup>10, 12</sup> In the last few years, there seems to be a major shift in Nigeria towards more medical graduates undergoing additional training to keep abreast with current best practices just as seen in most western contexts where postgraduate medical training is a minimum requirement for obtaining practicing licence. The positive correlation between emotional distress and the diagnosis of anxiety disorders is not surprising, and in keeping with previous findings among resident doctors.<sup>24, 26</sup> It further illuminates the proneness of resident doctors to mental challenges due to high expectations from the public, risk of violence and verbal aggression among others while expected to mask their own emotional needs to their cost in terms of mental health.

A number of limitations of the study were identified. These include its cross-sectional design which does not allow for the determination of the temporal order in the associations between work related variables and anxiety psychopathology. Again, the interpretation of the finding on the burden of categories of anxiety psychopathologies in this study should be done cautiously for a number of reasons. This is due to frequent occurrence of anxiety psychopathology in other disorders. Underreporting is also possible due to stigma associated with mental illness and sampling bias was difficult to eliminate from the study design because participation was voluntary. The identified strengths of the study include a sufficient sample size, success in reaching most of the targeted group and the use of standardized instruments to elicit anxiety psychopathology. There is need for further research into mental health of doctors and

its modifiable predictors while improving on some of the limitations in this study.

### **Conclusion**

This study identified key determinants of anxiety disorders among postgraduate medical trainees and showed that anxiety disorders are highly prevalent among them. Absence of additional academic qualification and emotional distress were the factors associated with anxiety disorders in participants. Overall, these findings are pointer to a number of issues with regards to the emotional well-being of resident doctors. For instance, involvement of comprehensive mental health services with focus on mental health promotion, identification of ill health and treatment for postgraduate medical trainees are implied. Equally important are psychosocial support services that are focused towards de-stigmatization

of doctors admitting to mental health problems for prompt help seeking. Also sharing of anxieties concerning patients as well as work regulations, and fostering of good working relationship with other members of the practice team should be encouraged. By doing this, negative feelings and behaviours will be detected in good time and remedies can be instituted. In addition, mentoring of residents by senior colleagues could allay fears and reduce anxiety concerning the completion of the programme within the stipulated time.

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