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Prevalence of Probable Generalised Anxiety Disorder Among Master of Public Health Students at the University of Ibadan, Nigeria

Ayobami Joseph Osho and Oyediran Emmanuel Oyewole

***Abstract— Introduction*: Generalised anxiety disorder (GAD) is a common and debilitating mental health condition characterised by excessive and persistent worry over various aspects of life. GAD poses significant challenges for university students, affecting their physical health, academic performance, and overall well-being. Investigating the prevalence of probable GAD among students of the University of Ibadan allows for targeted interventions tailored to their unique needs.**

***Aim:* This study aimed to investigate the prevalence of probable GAD among Master of Public Health (MPH) students at the University of Ibadan in Nigeria.**

***Methods:* This was a cross-sectional study involving a total of 170 MPH students, who were selected using a multi-stage sampling technique. A pre-tested, self-administered questionnaire was used to obtain data from the respondents. The GAD-7 scale was adapted to measure anxiety levels, categorising respondents as GAD negative (≤9) or GAD positive (>9). The Chi-square test was used to determine associations between variables at α= 0.05.**

***Results:* The mean age of the respondents was 27.5 ±4.7 years, and the prevalence of probable GAD among them was 37.6%. Academic stress (70.6%) was the most reported risk factor for GAD, with a significant association between the prevalence of probable GAD and the respondents' workload (p=0.006).**

***Conclusion:* Prevalence of probable GAD was observed among the respondents, indicating the need to enhance the academic well-being of future public health leaders.**

***Index Terms*— Generalized Anxiety Disorder; Mental Health; and Public Health.**

I. INTRODUCTION

Generalised anxiety disorder (GAD) is a prevalent and debilitating mental health condition marked by persistent, excessive worry that interferes with daily functioning [1]. It presents with both psychological and physical symptoms such as restlessness, impaired concentration, muscle tension, and sleep disturbances [2]. The aetiology of GAD is multifactorial, involving genetic, neurobiological, environmental, and psychological contributors [3]. Despite effective pharmacological and psychotherapeutic treatments, GAD remains under-diagnosed and poorly understood among student populations, particularly in postgraduate public health programmes.

Master of Public Health (MPH) students face academic, personal, and professional pressures that may predispose them to anxiety-related disorders. Emerging evidence links GAD to significant academic impairment, reduced concentration, poor sleep, social isolation, and physical health consequences such as high blood pressure and gastrointestinal distress [4]. These challenges may lead to academic underperformance, dropout, and limited career progression [5]. Nonetheless, data on GAD prevalence among MPH students remain scarce, with most studies focusing on undergraduates or general student populations.

This study addresses a critical knowledge gap by investigating the prevalence of probable GAD among MPH students at the University of Ibadan. Given the elevated mental health risks associated with postgraduate training in public health, targeted data are necessary to inform context-specific interventions. Findings from this research will provide evidence for the development of mental health support strategies, inform policy, and enhance the academic success and well-being of future public health leaders. By focusing on this specialised group, the study contributes to the broader discourse on mental health in higher education and strengthens advocacy for institutional mental health frameworks.

The broad objective of this study was to investigate the prevalence of probable GAD among Master of Public Health Students attending the University of Ibadan in Ibadan, Nigeria. The specific objectives were to determine the prevalence of probable GAD

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as well as the risk factors for GAD among the above-mentioned student population.

II. METHODOLOGY

A Cross-sectional design was utilised for this study, which was carried out from July 2024 to March 2025 at the University of Ibadan. The target population was MPH students attending the university. As a leading Nigerian university, it attracts a diverse range of students from different regions and backgrounds, making the findings relevant to other universities in Nigeria and similar developing countries.

Participants who met the inclusion criteria were MPH students at the University of Ibadan, available to participate in the study, and voluntarily willing to participate in the study. Those who did not complete the survey after enrolling were excluded. The minimum sample size (N=140) was determined using the Leslie Kish formula with prevalence set at 10.1% in accordance with a study by Victor Mbanuzuru et al. [6].

Respondents were selected using a multi-stage sampling technique, and a self-administered questionnaire was used to collect data. The questionnaire was serially numbered before commencing the data collection process. The researcher and his assistants visited the University of Ibadan's Faculty of Public Health to select the eligible respondents, and informed consent forms (detailing the purpose of the research and requesting the respondents' consent) were attached to the questionnaire for completion before the questionnaire was administered. A total of 189 copies of the questionnaire were administered to the eligible respondents. Upon collecting the completed questionnaires, the researcher and his assistants checked them thoroughly for completeness and errors.

Before distributing the questionnaire to study respondents, the researcher ensured that it resonated with the themes of the specific research objectives as well as the information collected from the literature review that was conducted for the study. It was also reviewed and validated by public health professionals.

A pre-test was conducted on 15 MPH students (>10% of the minimum sample size) at the Obafemi Awolowo University (OAU), Ile-Ife, to evaluate the effectiveness, consistency of results, and reliability of the questionnaire before conducting the main study. Cronbach's alpha was measured, revealing an acceptable coefficient of 0.762.

The copies of the questionnaire were assigned sequential numbers to facilitate easy identification, entry, and retrieval. Before commencing data entry, the questionnaire was thoroughly reviewed to ensure the accuracy, completeness, and proper data coding, using a coding guide. The collected data was then entered using IBM SPSS Statistics 29.0.1.0.

Prevalence of probable GAD among the respondents was assessed using an adapted generalised anxiety disorder assessment (GAD-7). A score of 0-4 was categorised as minimal anxiety and assigned code 1; 5-9 was categorised as mild anxiety (code 2); 10-14 was categorised as moderate anxiety (code 3); and 15−30 was categorised as severe anxiety (code 4). In this study, the scale was adapted rather than adopted, with three additional items added to the original seven, resulting in a 10-item instrument with a maximum total score of 30. Using the adapted GAD-7 as a screening tool, respondents who scored >9 were categorised as positive for GAD, while those who scored ≤9 were categorised as negative for GAD.

Findings regarding risk factors for GAD among MPH students were summarised in prose, highlighting the percentage of respondents who mentioned the common risk factors.

Descriptive statistics such as frequencies, mean and standard deviation, along with inferential statistics such as the Chi-square test, were employed for data analysis. It is worth noting that the categories "Light" and "Moderate" were collapsed into "Normal" for the Chi-square test to determine significant association between the prevalence of probable GAD and respondents' workload. This was done to ensure that the Chi-square test was valid.

III. RESULTS

Out of the 189 copies of the questionnaire distributed to the eligible respondents in the Faculty of Public Health, 170 were correctly completed, leading to a response rate of 89.95%.

The mean age of the respondents was 27.5±4.7 years. In terms of gender distribution, females constituted the majority at 72.9% (n=124), while males accounted for 27.1% (n=46).

The marital status of the majority of respondents was single, representing 78.2% (n=133) of the sample. Meanwhile, 20.6% (n=35) were married, and a few (0.6% each) (n=1) were either widowed or divorced. Early-life experiences played a role in respondents' backgrounds, with 36.5% (n=62)

reporting exposure to trauma or chronic stress while 63.5% (n=108) reported no such exposure.

The respondents' anxiety levels are illustrated in Figure 1, showing varied severity. The prevalence of probable GAD among respondents, measured by the percentage of those experiencing moderate and severe anxiety, was 37.6%, corresponding to 64 respondents in the sample.

The complete frequency distributions of the prevalence of probable GAD can be found on Table 1, while Table 2 shows the risk factors for GAD among the respondents.

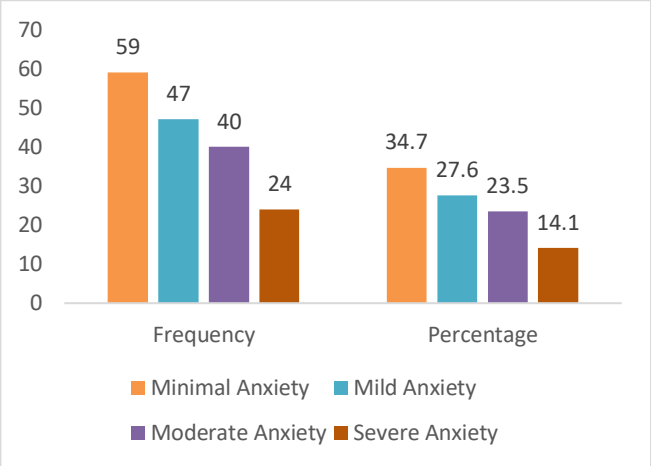

Figure 1. Respondents' anxiety levels.

Table 1. Prevalence of probable generalised anxiety disorder among respondents (N=170).

Variables	Responses	Frequency	%
Feeling nervous	Not at all	78	45.9
	Several days	59	34.7
	More than half the days	19	11.2
	Nearly every day	14	8.2
Unable to control worrying	Not at all	90	52.9
	Several days	48	28.2
	More than half the days	18	10.6
	Nearly every day	14	8.2
Worrying too much about different things	Not at all	44	25.9
	Several days	85	50.0
	More than half the days	18	10.6
	Nearly every day	23	13.5
Trouble Relaxing	Not at all	96	56.5
	Several days	47	27.6
	More than half the days	15	8.8
	Nearly every day	12	7.1
Being so restless that it is hard to sit still	Not at all	125	73.5
	Several days	32	18.8
	More than half the days	7	4.1
	Nearly every day	6	3.5
Becoming easily annoyed	Not at all	93	54.7
	Several days	54	31.8
	More than half the days	12	7.1
	Nearly every day	11	6.5
Afraid something awful might happen	Not at all	94	55.3
	Several days	51	30.0
	More than half the days	16	9.4
	Nearly every day	9	5.3
Overwhelmed by academic demands	Not at all	32	18.8
	Several days	69	40.6
	More than half the days	33	19.4
	Nearly every day	36	21.2
Easily irritated by academic responsibilities	Not at all	77	45.3
	Several days	58	34.1

	More than half the days	17	10.0
	Nearly every day	18	10.6
Difficulty concentrating on studies due to feelings of worry	Not at all	79	46.5
	Several days	61	35.9
	More than half the days	18	10.6
	Nearly every day	12	7.1

Table 2. Risk factors for probable generalised anxiety disorder among respondents (N=170).

Variables		**Frequency**	**%**
Description of current academic workload	Light	7	4.1
	Moderate	70	41.2
	Heavy	53	31.2
	Overwhelming	40	23.5
Typical number of hours' sleep per night	Less than 5 hours	44	25.9
	5-6 hours	97	57.1
	7-8 hours	28	16.5
	More than 8 hours	1	0.6
Engagement in physical exercise in a week	Never	27	15.9
	Once a week	72	42.4
	2-3 times a week	44	25.9
	More than 3 times a week	27	15.9
Consumption of vegetables in a week	Once	56	32.9
	Twice	53	31.2
	More than 3 times	49	28.8
	Not at all	12	7.1
Family history of GAD	Yes	2	1.2
	No	112	65.9
	Don't Know	56	32.9
Feelings of stress related to studies	Rarely	19	11.2
	Occasionally	67	39.4
	Frequently	58	34.1
	Almost always	23	13.5
	Don't know	3	1.8
Receipt of peer support in managing stress levels	No	58	34.1
	Yes	112	65.9
Receipt of professional help for issues related to anxiety	No	153	90.0
	Yes	17	10.0
Confidence in ability to manage anxiety personally	Very confident	70	41.2
	Somewhat confident	63	37.1
	Not very confident	27	15.9
	Not confident at all	5	2.9
	Not sure	5	2.9
Academic environment contributes to anxiety levels	Yes	120	70.6
	No	29	17.1
	Not sure	21	12.4

As indicated in Table 3, there was a significant association between the prevalence of probable GAD and the selected variables: traumatic experience, workload, and sleeping pattern (p=0.004, p=0.006, p=0.024, respectively). There was no significant association between the prevalence of probable GAD and the respondents' gender (p=0.639).

Table 3. Chi-square tests for significant association between prevalence of probable generalised anxiety disorder and selected variables (traumatic experience, workload, sleeping pattern, and gender).

Variable	Categories	Prevalence of probable GAD		Total	Df	X^2	p-value
		Negative Freq.(%)	Positive Freq.(%)				
Traumatic experience	No	76 (70.4)	32 (29.6)	108 (100.0)	1	8.109	0.004
	Yes	30 (48.4)	32 (51.6)	62 (100.0)			
	Total	106 (62.4)	64 (37.6)	170 (100.0)			
Workload	Normal*	58 (75.3)	19 (24.7)	77 (100.0)	2	10.113	0.006
	Heavy	27 (50.9)	26 (49.1)	53 (100.0)			
	Overwhelming	21 (52.5)	19 (47.5)	40 (100.0)			
	Total	106 (62.4)	64 (37.6)	170 (100.0)			
Sleeping pattern	<5 hours	20 (45.5)	24 (54.5)	44 (100.0)	2	7.499	0.024
	5-6 hours	65 (67.0)	32 (33.0)	97 (100.0)			
	>6 hours	21 (72.4)	8 (27.6)	29 (100.0)			
	Total	106 (62.4)	64 (37.6)	170 (100.0)			
Family history	Yes	0	2 (100.0)	2 (100.0)	-	6.094	0.025**
	No	76(67.9)	36 (32.1)	112 (100.0)			
	Don't Know	30 (53.6)	26 (46.4)	56 (100.0)			
	Total	106 (62.4)	64 (37.6)	170 (100.0)			
Gender	Male	30 (65.2)	16 (34.8)	46 (100.0)	1	0.220	0.639
	Female	76 (61.3)	48 (38.7)	124 (100.0)			
	Total	106 (62.4)	64 (37.6)	170 (100.0)			

* The categories "Light" and "Moderate" as seen in table 2 were recoded into "Normal" for the variable "workload" in this table
** Despite the statistically significant findings, no inferential remarks can be made given the low number of variables in this category.

This was a cross–sectional study; hence, inferences regarding causation could not be made. Additionally, mental health stigma could have influenced students' willingness to participate or to honestly disclose their GAD symptoms. Some of the other limitations to this study included the single-institution setting which limits generalisability, self-reported data which is subject to recall and social desirability bias, and the lack of assessment of concurrent mental health conditions.

IV. DISCUSSION

The prevalence of probable GAD among respondents in this study was 37.6%, corresponding to 64 respondents in the sample. The study's findings highlight the variation in prevalence rates of anxiety and probable GAD among student populations across different contexts. For instance, Alatawi et al. [7] reported severe anxiety in a few Saudi medical students, a rate significantly lower than the one found in this study. Similarly, Mbanuzuru et al. [6] identified a probable GAD prevalence (10.1%) lower than that found in this study among in-school adolescents in Nigeria. These comparisons suggest that postgraduate students, particularly those in intensive programmes such as MPH, may face an elevated risk of GAD due to academic expectations, workload, and future career uncertainties.

The most common GAD symptoms among this study's respondents were excessive worry, nervousness, and feeling overwhelmed by academic demands. These findings align with past research indicating that university students frequently experience difficulty relaxing, excessive worry, and impaired academic performance due to anxiety disorders [5].

Additionally, Barbosa-Camacho et al. [8] found a significant correlation between GAD and poor academic performance among Mexican university students, mirroring the findings of Jamil et al. [9] in Syrian medical students.

The present study revealed statistically significant evidence that respondents who have experienced traumatic events are more likely to exhibit signs or symptoms of GAD compared with those who have not had such experiences. The p-value of 0.004, indicating that the observed association is unlikely to have occurred by chance.

There was also a statistically significant association between the prevalence of probable GAD and the workload reported by the respondents, with the p-value (p=0.006) providing strong evidence against the null hypothesis of no association and indicating that increased academic workload may contribute to the prevalence of probable GAD among the study population.

Likewise, a statistically significant association was observed between the prevalence of probable GAD and respondents' sleeping patterns (p=0.024), with irregular or disrupted sleep potentially contributing to increased symptoms of GAD within this population.

Additionally, the findings of this study revealed several key risk factors associated with GAD among MPH students at the University of Ibadan. The most significant among these was academic pressure, with a majority of the respondents attributing their GAD symptoms to the academic environment. This aligns with a study by Graves et al. [10], which highlighted that academic stress significantly contributes to the development of anxiety disorders among university students. Similarly, Liu et al. [11] identified academic workload as a major determinant of GAD, indicating that students who perceive their workload as overwhelming are at a heightened risk of experiencing anxiety symptoms. The present study further supports these findings, as many of the respondents described their workload as either overwhelming or heavy.

Sleep deprivation also emerged as a critical risk factor, with only a few respondents managing to get the recommended 7–8 hours of sleep per night. This finding is consistent with the work of Alvaro et al. [12], who established that inadequate sleep is a significant predictor of anxiety disorders, as it disrupts cognitive function and emotional regulation. Similarly, Eisenberg et al. [5] found that students experiencing chronic sleep deprivation were more likely to report persistent anxiety symptoms, reinforcing the importance of sleep hygiene in mental health management.

Lifestyle factors such as physical inactivity and poor dietary habits were also prominent among respondents. Only a few engaged in regular exercise more than three times per week, while an equal percentage did not engage in exercise at all. This corroborates findings from Mammen & Faulkner [13], who reported that low levels of physical activity are associated with increased anxiety symptoms due to reduced endorphin release and increased physiological stress responses.

Social support and professional help-seeking behaviours were also examined. While a majority of respondents reported feeling supported by their peers, only a few had ever sought professional help, such as counselling, for anxiety-related issues. This aligns with Hunt & Eisenberg [14], who found that despite the availability of mental health services, many students hesitate to seek professional assistance due to stigma, lack of knowledge, or financial constraints. Furthermore, Gureje et al. [15] highlighted that in Nigeria, cultural perceptions of mental health often discourage individuals from seeking psychological support, which may explain the low rate of help-seeking

behaviour among the respondents in this study.
The limitations of this study were acknowledged and addressed to the extent possible in the study design, data collection, and analysis processes to ensure the validity and reliability of the findings.

V. CONCLUSION

These study findings call for urgent interventions to improve mental health literacy, promote healthier coping strategies, and enhance institutional support systems.

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