

## **Influence of Financial Worries on Generalized Anxiety Disorder among Undergraduate Medical Students in Kenya: A Case of Kenya Methodist University, Main Campus, Meru**

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### **Abstract**

Medical students are highly vulnerable to anxiety due to financial and other psychosocial stressors. This study examined the influence of financial worries on Generalized Anxiety Disorder (GAD) among undergraduate medical students at Kenya Methodist University. Guided by the Transactional Model of Stress and Coping, a concurrent mixed-methods design was used. A total of 163 students undertaking MBChB, pharmacy, clinical medicine, nursing, and medical laboratory were selected through stratified and simple random sampling; 8 staff, including Chairperson of the department (CODs) and lecturers were purposively sampled; while university counselors were censured. Data were collected via questionnaires and interviews. Research tools were piloted at Mount Kenya University; Cronbach's alpha was 0.82, indicating a strong reliability. Quantitative analysis (SPSS v30) used descriptive statistics and regression, while qualitative data underwent thematic analysis. Data were presented in tables and narrative. Results showed that financial worries ( $\beta = .297$ ,  $p = .001$ ) significantly increased GAD. Qualitative findings reinforced these results, indicating financial insecurity heightened stress. The study concludes that addressing financial pressures, such as a lack of fees, food, and other basic needs, is critical for enhancing medical students' well-being. The study recommends that the university management and other educational institutions provide transparent financial aid and strengthen counselling for financially stressed student

**Keywords:** *students, Generalized Anxiety Disorder, financial worries*

## 1.0 Introduction

Generalized Anxiety Disorder (GAD) is a common mental health condition characterized by excessive tension, worry, and anxiety that persist for extended periods (Leonard & Abramovitch, 2019). According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), individuals with GAD experience disproportionate fear and anxiety lasting for at least six months, often accompanied by fatigue, restlessness, poor concentration, irritability, and sleep disturbance (American Psychiatric Association [APA], 2022; Munir & Takov, 2025). For medical students, who face unique financial and psychosocial pressures, these symptoms can become overwhelming, and if untreated, it may lead to comorbid conditions such as depression (Alatawi et al., 2020).

Medical training is academically rigorous, time-intensive, and resource-demanding. Besides heavy coursework and clinical rotations, medical students frequently confront substantial financial obligations—tuition, clinical fees, learning materials, housing, transportation,

and daily living costs—that can exceed available financial aid, forcing many to rely on loans, part-time work, or reduced consumption (e.g., food insecurity, unstable housing) (Moore et al., 2021).

Globally, GAD is one of the most prevalent anxiety disorders among medical students, affecting nearly one in three (Auerbach et al., 2020; Quek et al., 2019). Studies report prevalence rates ranging from 32.7% in Brazil (Trindade et al., 2021), to as high as 67.5% in Saudi Arabia (Alatawi et al., 2020). In Africa, comparable trends have been observed, with studies in Nigeria, Namibia, Tanzania, and Sudan reporting GAD prevalence between 30% and 75% (Chinawa et al., 2018; Mohamed et al., 2024). In Kenya, surveys among medical students indicate moderate to severe anxiety symptoms in 31–43% of respondents, underscoring the magnitude of the problem (Kimari, 2023; Muriungi & Menecha, 2020).

Medical students represent a subgroup at especially high risk. Medical education is uniquely demanding, characterized by heavy workloads, frequent examinations, prolonged clinical hours, and limited

personal time. These stressors contribute to higher levels of anxiety among medical students than among peers in other academic disciplines (Almojali et al., 2017). For example, recent studies report probable GAD rates ranging from 20% to 30% among medical trainees, much higher than general population estimates (Ahmed et al., 2024).

In addition to academic pressure, financial burden has emerged as a salient but often underexplored contributor to anxiety. Medical training is associated with considerable expenses—tuition, clinical fees, study materials, housing, and transport—that frequently exceed available scholarships or family support (Moore et al., 2021). Many students resort to part-time work, loans, or lifestyle sacrifices, adding further strain. Literature indicates that while the reasonable amount of debt shows mixed associations with mental health, subjective financial worries are consistently linked with higher anxiety and poorer well-being (Richardson et al., 2013; McCloud & Bann, 2019).

Research from both high-income and low-income contexts reinforces this connection. A review in the UK found that students who worried about debt or had financial difficulties reported significantly worse mental health, including anxiety (McCloud & Bann, 2019). Similarly, qualitative research findings in the U.S. highlighted that financial stress undermined academic performance, social relations, and emotional well-being (Moore et al., 2021). In low-income settings, the effect may be magnified. For instance, in Sudan, medical students with very low weekly income were more likely to exhibit probable GAD (Ahmed et al., 2024).

*“The study found that, financial worries were the strongest predictors of GAD among*

Despite this evidence, most studies either combine financial issues with

other stressors or do not isolate financial worries as an independent predictor of anxiety. This gap is particularly relevant in contexts where tuition and training costs are high relative to household income; and where students rely heavily on family networks in the absence of robust financial aid systems. In such environments, financial worries may not only undermine mental health, but they also jeopardize academic persistence and professional development.

### ***Statement of the problem***

Medical students need a supportive learning environment that fosters academic success, resilience, self-care, and social support. Ideally, medical schools should inspire passion for learning and safeguard mental health through manageable workloads, emotional support, and normalized help-seeking. However, studies show elevated GAD risks among medical students. In Saudi Arabia, low income and smoking increased vulnerability (Alatawi et al., 2020); in Nigeria, verbal abuse from supervisors caused distress and academic disillusionment (Essien et al., 2024); and in Kenya, sixth-year students with low program

satisfaction showed a 43% GAD prevalence (Kimari, 2023). Left unaddressed, anxiety disorders can lead to dropout, poor performance, substance abuse, or suicide (Liu et al., 2022). Although counseling services exist (Cerolini et al., 2023), most studies, including Kebede et al. (2019), Manana et al. (2023), and Quek et al. (2019), focus on prevalence rather than psychosocial drivers. To bridge this gap, this study examined the influence of stress coping strategies, financial worries, student–staff relationships, and academic pressure on GAD among undergraduate medical students at Kenya Methodist University.

### ***Literature Review***

Financial worries are broadly defined as stress or anxiety related to current or anticipated financial situations, encompassing challenges such as debt, low income, or difficulty meeting essential expenses (Asebedo & Wilmarth, 2017; De Bruijn & Antonides, 2020). For medical students, these worries often extend to tuition, housing, food, and other academic costs, which interfere with performance and well-being (Nasr et al., 2024). Beyond academic

workload, financial stress has been highlighted as a persistent challenge throughout medical education (Naidoo et al., 2014).

Globally, multiple studies document the impact of financial stressors on student mental health. In the United States, financial concerns were cited among the top stressors affecting medical students, alongside workload (Monica et al., 2018). Halperin et al. (2021) further established a strong association between financial difficulties and GAD. Likewise, Byrnes et al. (2020) and Shao et al. (2020) emphasized how financial burdens, compounded with academic stress, contribute to anxiety symptoms in medical students across the U.S. and China. Evidence from Pakistan also highlights finances as a critical concern, with social financial support reducing GAD symptoms (Azim & Baig, 2019). In Saudi Arabia, financial problems were consistently linked to elevated GAD prevalence, ranging from 8% to 66% (AlShamlan et al., 2020; Mirza et al., 2021). Similarly, Wege et al. (2020) confirmed that students facing

financial problems were more vulnerable to anxiety.

In Africa, financial distress is a significant predictor of mental health outcomes. In Ethiopia, Dachew et al. (2020) reported that students with inadequate pocket money and poor financial support had a 40.9% prevalence of anxiety. In South Africa, Bantjes et al. (2019) found that financial pressure was associated with a 31.5% prevalence of general mental disorders, with GAD being the most common at 20.8%. Additional studies by Jebessa et al. (2019) and Pretorius and Blaauw (2020) highlighted how financial dependency and inadequate parental awareness of university expenses negatively affected student health and academic outcomes.

In Kenya, financial challenges remain a major barrier for health science students. Many struggle to raise money for basic needs and school fees, sometimes leading to dropout (Peter, 2020). Such difficulties significantly impact mental health, with increased reports of stress and anxiety among undergraduates (Myers, 2020).

Mathuva et al. (2024) specifically linked financial problems to elevated stress levels among university students. Despite this evidence, there is limited empirical research directly examining the influence of financial worries on GAD among Kenyan medical students, presenting a knowledge gap that this study seeks to fill.

## **2.0 Materials and Methods**

The study was conducted at Kenya Methodist University (KeMU), which reported anxiety symptoms among undergraduate medical students. The study targeted a population of 1627 from 5 disciplines; namely, Bachelor of Medicine and Surgery [MBChB], clinical medicine, nursing, pharmacy, and medical laboratory. Undergraduate medical students were stratified by academic program to ensure proportional representation. Simple random sampling was applied to select 163 medical students. Purposive and census sampling were used to recruit key informants, that is, staff. The data was collected through questionnaires and interviews. The researcher conducted a pilot test at Mount Kenya University, main

campus, given its similar characteristics with the study location, to test the validity and reliability of the research instruments. Quantitative data were analyzed descriptively (mean, standard deviation, percent, and Frequency) and inferentially (multiple linear regression), while qualitative data underwent thematic analysis. Results were presented in tables and narrations. Ethical clearance was obtained from the ethical committee, and a research permit was later sought from NACOSTI. Anonymity was observed, while participants filled out the consent form to participate in the study. The study ensured confidentiality and integrity throughout the process.

## **3.0 Results and Discussion**

### ***Response Rate***

The response rate was 38 (100%) for MBChB students, 17 (100%) for clinical medicine students, 45 (64%) for nursing students, 24 (88%) for pharmacy students, and 7 (63.63%) for medical laboratory students, resulting in an overall response rate of 80.36%. The response rate

suggests positive participation among the respondents.

### ***Demographic Characteristics of Respondents***

Out of the 131 sampled medical students, the majority, 80, 61.1%, were female with males accounting for 51 (38.9%). This is due to the fact that female students were more willing to participate in this study than males. Most respondents, 91 (69.5%), were aged between 21 and 25 years, followed by 32 (24.4%) aged 16–20 years, while only 8 (6.1%) were aged 26–30 years. Participants were drawn from various medical courses, with Nursing students forming the largest group 45 (34.4%), followed by Bachelor of Medicine and Bachelor of Surgery (MBChB) students 38 (29.0%), Pharmacy 24 (18.3%), Clinical Medicine 17 (13.0%), and Medical Laboratory Science 7 (5.3%). Although a section of the respondents participated more than the others did not affect the results. In terms of the year of study, the highest percentage of respondents was in 4th year, 35 (26.7%), followed by 2nd year, 29 (22.1%),

1st year, 25 (19.1%), 3rd year, 21 (16.0%), 5th year, 14 (10.7%), and 6th year 7 (5.3%). Regarding sponsorship, the majority of respondents were government-sponsored, 78 (59.5%), while 52 (39.7%) were self-sponsored, while only 1 (0.8%) reported other forms of sponsorship. This implies that most of the medical students at KeMU are government-sponsored

### ***Generalized Anxiety Disorder among Medical Students***

To establish the prevalence of GAD among medical students, respondents were asked a series of standardized questions regarding different aspects of anxiety symptoms. The rating scale was: not at all = 0, several days = 1, more than half a day = 2, and nearly every day = 3 for statements measuring GAD symptoms. Functionality rating scale was: not difficult at all = 0, somewhat difficult = 1, very difficult = 2, and extremely difficult = 3. Having analyzed each item of the GAD-7, the study further evaluated the overall scores to determine individual anxiety prevalence and severity, as guided by Spitzer et al.

(2006). While GAD-7 can be treated as a continuous variable to capture variations in anxiety symptoms across respondents, it can also be categorized to aid clinical interpretation. Recent meta-analyses recommend using a cut-off score of  $\geq 8$  to optimize sensitivity without substantially reducing specificity (Dhira et al., 2021). For categorical

interpretation, the following thresholds are commonly applied: 0–4 = Minimal anxiety, 5–9 = Mild anxiety, 10–14 = Moderate anxiety, and  $\geq 15$  = Severe anxiety. Frequencies and percentages were computed appropriately, and the results were summarized as shown in Table 1.

**Table 1**  
*Prevalence of GAD*

<b>Level of GAD</b>	<b>Frequency</b>	<b>Per cent (%)</b>
Minimal	47	35.9
Mild	48	36.6
Moderate	20	15.3
Severe	16	12.2

Findings in Table 1 indicate that most respondents (72.5%) reported minimal to mild GAD symptoms (35.9% and 36.6%, respectively), generally considered clinically insignificant levels of GAD, supporting findings by Spitzer et al., (2006). However, a majority of respondents still experienced functional difficulties (66% minimal; 72.5% mild), echoing findings by Chiu et al. (2016), Munir and Takov (2025), and Habtu et al. (2024) who established that even mild anxiety can impair academic and social functioning. About 27.5% had moderate-to-severe GAD (15.3%

moderate; 12.2% severe), with most reporting notable impairment (80% and 37.5%, respectively). These results align with Spitzer et al. (2006), Saddik et al. (2021), and Wilmer et al. (2021), who emphasize the dose–response link between GAD severity and real-world functional challenges, underscoring the need for timely interventions.

***Financial Worries and Generalized Anxiety Disorder among Medical Students***

The objective of this study was to investigate the influence of financial



worries on GAD among undergraduate medical students at KeMU, Meru County, Kenya. To establish this, the respondents were asked about the frequency with which they experience different

statements regarding financial worries. The rating scale was: always = 5, very often = 4, sometimes = 3, rarely = 2, and never = 1. The summary of results is presented in Table 2 below;

**Table 2**

*Descriptive Results on Financial Worries*

<b>Items</b>	<b>Always (f/%)</b>	<b>very often (f/%)</b>	<b>Sometimes (f/%)</b>	<b>Rarely (f/%)</b>	<b>Never (f/%)</b>	<b>Mean</b>	<b>SD</b>
I rely on my family/friends for financial support	99 (75.6)	16 (12.2)	5 (3.8)	5 (3.8)	2 (1.5)	4.61	0.864
I take on additional work (part-time job) for financial reasons.	9 (6.9)	8 (6.1)	22 (16.8)	31 (23.7)	57 (43.5)	2.06	1.233
I access HELB, a scholarship, or a bursary	14 (10.7)	15 (11.5)	36 (27.5)	14 (10.7)	48 (36.6)	2.47	1.385
I have difficulty concentrating on my schoolwork because of my financial situation.	8 (6.1)	10 (7.6)	32 (24.4)	37 (28.2)	40 (30.5)	2.28	1.174
I feel anxious, thinking I	10 (7.6)	8 (6.1)	25 (19.1)	34 (26.0)	50 (38.2)	2.17	1.239

might not take the exams due to financial instability.

I struggle to manage my day-to-day living expenses	14 (10.7)	13 (9.9)	38 (29.0)	31 (23.7)	31 (23.7)	2.59	1.268
I feel pressure to maintain a particular lifestyle	11 (8.4)	9 (6.9)	41 (31.3)	20 (15.3)	46 (35.1)	2.36	1.277
Poor financial management influences my anxiety levels	22 (16.8)	21 (16.0)	43 (32.8)	22 (16.8)	19 (14.5)	3.04	1.281
I compare my financial situation to that of my peers in medical school	8 (6.1)	11 (8.4)	26 (19.8)	31 (23.7)	51 (38.9)	2.17	1.226
I experience physical symptoms like headaches, stomachaches, or tightness in my chest due to financial stress	6 (4.6)	13 (9.9)	22 (16.8)	36 (27.5)	51 (38.9)	2.12	1.181

The financial well-being of medical students was largely dependent on family and social support, with 75.6% always relying on these networks (M = 4.61, SD = 0.864). The high cost of training often left households unable to meet students'

basic needs, while part-time work was uncommon (M = 2.06, SD = 1.233) due to its negative impact on attendance (Zickafoose et al., 2024; Evans, 2020).

Institutional aid offered little relief, as it was support was inconsistent (M = 2.47, SD = 1.385) while loans rarely covered expenses. Financial strain manifested in poor concentration (M = 2.28, SD = 1.174), exam anxiety (M = 2.17, SD = 1.239), unmet daily costs (M = 2.59, SD = 1.268), and inadequate nutrition. Though peer pressure was minimal, poor money management (M = 3.04, SD = 1.281) was linked to substance use among wealthier peers. A minority also reported stress-related symptoms (M = 2.12, SD = 1.181), reflecting the

psychosomatic burden of financial hardship. Overall, financial insecurity emerged as a major driver of anxiety, undermining well-being, performance, and persistence.

***Inferential Statistics Findings***

The researcher employed ordinal logistic regression to establish the influence of independent variables (academic pressure, financial worries, stress-coping strategies, and student-staff relationships) on the dependent variable (generalized anxiety disorder). The results are summarized in Table 3.

**Table 3**

*Inferential Statistical Analysis Findings on the Study Variables*

<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>β</b>	<b>t</b>	<b>P values</b>	<b>95.0% CI</b>
(Constant)	.299	.472		.633	.528	-.636, 1.233
Financial worries	.271	.078	.297	3.479	.001	.117, .425

$F(4,121) = 12.096, p < .001, R = .534, R^2 = .286$

The regression model was significant,  $F(4,121) = 12.096, p < .001$ , explaining 28.6% of the variance in GAD. Financial worries ( $\beta = .297, p < .001$ ) were the

strongest predictors, with students and staff highlighting unmet basic needs as major stressors. A qualitative study resonated with these findings, highlighting that

financial stress impedes academic success, and negatively impacts medical students' social lives, with students reporting challenges keeping up academically and socially due to financial pressures (Moore et al., 2021). Moreover, a longitudinal study at urban public colleges found that each additional unmet essential need; for instance, food, housing, health care, mental health increased odds of student attrition, including dropout, leave of absence, or academic probation, by 29%, with rising percentages for multiple unmet needs (43%, 57%, 82%). This supports the idea that basic needs are major stressors (Sanborn et al., 2024).

#### **4.0 Conclusion**

This study found that financial worries were the strongest predictors of GAD among medical students. The results emphasize the need for holistic interventions to address financial stressors among students pursuing medical courses. Such measures are vital for safeguarding students' well-being, resilience, and long-term professional readiness.

#### **5.0 Recommendations**

To mitigate the negative impact of financial worries on students' mental health and academic performance, the academic institutions offering medical courses should establish clear, transparent, and accessible financial aid mechanisms. This includes openly communicating the finance eligibility criteria, application procedures, and allocation processes to ensure fairness and build trust among students. Transparent systems reduce uncertainty, which can itself be a source of anxiety, and enable students to make informed decisions about managing their education costs.

In addition, academic institutions offering medical courses should strengthen counselling services tailored to students experiencing financial stress. Trained counsellors can help students develop coping strategies, manage stress, and explore alternative financial planning approaches. Integrating financial literacy programs into counselling sessions would further empower students by equipping them with skills to budget effectively, seek scholarships, and

reduce reliance on unsustainable financial practices

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