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Stressors among Undergraduate First-Year Medical Students at a Nigerian Private University: A Descriptive Cross-Sectional Study

Tunrayo Oluwadare¹, Ayodeii Fasoro², Tolulope Oio³

Corresponding Author: Ayodeji Fasoro; School of Health Sciences, College of Education, Health and Human Development, University of Canterbury, Christchurch, New Zealand AND Department of Public Health, College of Medicine and Health Sciences, Afe Babalola University Ado-Ekiti, Ekiti, Nigeria

Email: avodeji.fasoro@pg.canterburv.ac.nz

Quantitative Study

Abstract

Background: Stressors among medical students have been observed as a pervasive problem in recent times. This has continued to be a devastating challenge affecting students' academic performance as well as their general well-being. The main objective of this study is to examine the factors that cause stress among first-year undergraduate medical students at a Nigerian private university.

Methods: A descriptive cross-sectional study design was used. An adaptation of the Burge University Student Stress Scale was used to develop the questionnaire, 224 first-year medical students enrolled in the College of Medicine and Health Sciences of Afe Babalola University, Ado-Ekiti, Nigeria, were sampled. Data were collected and analysed using SPSS software.

Results: The mean age of the students was 17.30 ± 1.05 years. The majority were girls (72.2%), Christians (85.8%), less than 18 years old (69.8%), and received a monthly allowance of less than 60000 (85.4%) Nigerian Naira (₦). Getting good enough grades for the next level (65.1%), fear of failure (67.0%), fear of disappointing the family (62.8%), getting access to the internet (57.5%), food served at the university cafeteria (67.0%), electricity supply (61.3%), and water supply (71.7%) were some of the stressors identified. Conclusion: This study found the number of materials to study, getting good enough grades for the next level, fear of failing, and disappointing family amongst others as sources of stress among first-year medical students.

Keywords: Stress; Medical students; Cross-sectional study; University; Nigeria

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¹ Department of Community Medicine, College of Medicine and Health Sciences, Afe Babalola University Ado-Ekiti, Ekiti, Nigeria

² School of Health Sciences, College of Education, Health and Human Development, University of Canterbury, Christchurch, New Zealand AND Department of Public Health, College of Medicine and Health Sciences, Afe Babalola University Ado-Ekiti, Ekiti, Nigeria

³ Department of Public Health, College of Medicine and Health Sciences, Afe Babalola University Ado-Ekiti, Ekiti, Nigeria

Introduction

Medical training is exceptionally distressing when compared with other professional curricula (Salgar, 2014). Moreover, stress plays an inevitable role in medical students' life which may be as a result of different high inward and outward assumptions geared towards them. According to Fasoro, et al. (2019), stress is an imminent experience that emanates as a result of the composite interplay between humans and their environment (Fasoro, Oluwadare, Ojo, & Oni, 2019). This happens when resources available are inadequate to manage situational requirements and pressing factors. Medical students are notably susceptible to the difficulties and challenges accompanied by stress. Salam, et al. (2013) also describe stress as a situation whereby an individual is disturbed both physically and psychologically due to interaction with his/her domain which is observed as a peril to the health and comfort of such person (Salam, Yousuf, Bakar, & Haque, 2013). Stress among medical students can develop into a worrisome situation that may be viewed as a "profession failure" (Kadapatti & Vijayalaxmi, 2012). The rising rates of stress are observed to influence the health along with the educational achievements of students (Hamaideh, 2011). Acquiring medical knowledge has for a long time been universally perceived as including various stressors that can influence students' wellbeing (Oku, Owoaje, Oku, & Ikpeme, 2015).

Soliman (2014) opined that the degree of pressure among clinical undergraduate students relies upon the clinical educational program, assessment framework, and the organization of the clinical school. Some of the common stressors indicated in the academic context include heavy workload, inadequate time allocation, interpersonal relationships, and rivalry among equals (Fairbrother & Warn, 2003). Other determining elements comprise financial difficulties, changes in the living atmosphere, and regulating individual and educational life (Biron, et al, 2008; Chernomas & Shapiro, 2013; Jimenez, et al, 2010; Moscaritolo, 2009).

The academic institution plays a significant role in determining the stress undergone by medical undergraduates. Some of the challenges entail congested classrooms, institution marking strategy, lack of amenities (Awino & Agolla, 2008), boundlessness of schedule (Agrawal & Chahar, 2007; Sreeramareddy, et al, 2007), extended periods of study time, and assumptions for repetitive learning (Deb, et al, 2015). Parents and institutions constantly infuse the fear of non-success/failure which influences medical students' self-worth and composure. Ang and Huan (2006) indicated that raised expectations remained one of the causes of high stress levels (Ang & Huan, 2006).

Several studies have illustrated that stress is significantly high among medical students in their first year, as they are newly exposed to a more challenging phase of life and experience. Melaku, et al. (2015) observed in their study that a high level of stress was common among the newly-admitted medical students who were in their first year of experience, while it decreased as they progressed in their year of study (Melaku, Mossie, & Negash, 2015). The possible reason for this could be as a result of gradual adjustment to the learning system and environment. The high stress level has been observed to be a leading cause of anxiety, depression, irregular diet, alcohol or illicit drug use, and other physical and health complications. This high level of pervasiveness among medical students shows that stress as an enormous medical condition cannot be overemphasized. A less stressful academic life could be determined by the early identification of modifiable stressors which thus, enhances their academic performance as medical graduates (Abouammah, Irfan, Marwa, Zakria, & Al Faris, 2020). This study aimed to identify stressors among first-year

undergraduate medical students at a private Nigerian university.

Methods

A descriptive cross-sectional study design was used. The study was conducted at Afe Babalola University, Ado-Ekiti, Nigeria, which is a privately owned university with over 6850 students. The university has two annexes and six colleges which are Postgraduate Studies, Law, Sciences, Social and Management Sciences, Engineering, and Medicine and Health Sciences. First-year medical students enrolled in the College of Medicine and Health Sciences were included in the study. Data were collected using a semi-structured validated questionnaire. An adaptation of Burge (2009) University Student Stress Scale was used to develop the questionnaire. The face and content validity were ascertained by experts in the departments of Public Health and Community Medicine, Afe Babalola University. The questionnaire comprises sections A and B. The socio-demographic characteristics such as age, ethnicity, gender, monthly income, and religion make up section A. The stress items in section B include 40 items on what students consider as stressors which are measured by a 4-point Likert scale ranging from "strongly disagree" to "strongly agree" with a score ranging from 1 to 4 for each item. "Strongly agree" and "agree" were recoded to "Yes" (1), while "strongly disagree" and "disagree" were recoded to "No" (0). To assess the internal consistency of the scale, the Cronbach's alpha test was run. The stress scale consisting of 40 items was found to be highly reliable ($\alpha = 0.887$).

The sample size was estimated using a single population proportion formula for a cross-sectional study design:

$$n = \frac{Z^2_{1-\alpha/2}P(1-P)}{d^2}$$

 $Z^2_{1-\alpha/2}$ = Standard normal value at 95% confidence interval (CI) = 1.96; P = Prevalence of excessive academic workload as a stressor among undergraduate medical students = 82.3% (Oku, et al, 2015); d = Marginal error = 5%; the estimated sample size was 224 respondents.

Ethical approval was sought and obtained from Afe Babalola University Ethical Committee before the respondents were approached. All procedures performed in studies involving human participants were in accordance with the ethical standards of the Institutional and/or National Research Committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. The purpose and benefits of the research were clearly explained to the respondents before the questionnaires were self-administered. Rights to refuse participation were spelt out to the students. The confidentiality of their responses and their anonymity was fully guaranteed. Data were collected and analysed using SPSS software (version 25.0, IBM Corporation, Armonk, NY, USA). Descriptive statistics were presented as frequencies with their percentages, and means with their standard deviation (SD).

Results

224 questionnaires were administered to the respondents. However, only 212 questionnaires were retrieved which gave a response rate of 94.6%.

Table 1 shows that the mean age was 17.30 ± 1.05 years. The majority were Christians (85.8%), less than 18 years old (69.8%), girls (72.2%), and received a monthly allowance of less than \$60000 (85.4%).

Table 1. Socio-demographic characteristics (n = 212)

Variable	Value		
Age (year)			
< 18	148 (69.8)		
18 and above	64 (30.2)		
Mean age	17.30 ± 1.05		
Gender			
Boys	59 (27.8)		
Girls	153 (72.2)		
Religion			
Christianity	182 (85.8)		
Islam	28 (13.2)		
Others	2 (1.0)		
Ethnicity			
Yoruba	53 (25.0)		
Hausa	12 (5.7)		
Igbo	56 (26.4)		
Others	91 (42.9)		
Monthly allowance*			
Less than ₩60000	181 (85.5)		
₩60000-₩99999	24 (11.3)		
№100000 and above	7 (3.3)		

Data are presented as number and percentage or mean ± standard deviation (SD) *N410 Nigerian Naira (NGN) = \$1 United States Dollar (USD)

Table 2 shows that the number of materials to study (69.3%), studying for tests and exams (61.3%), handling the academic workload (59.9%), getting good enough grades for the next level (65.1%), high-pressure periods, when lots of assessment is due (69.3%), getting everything done (68.9%), trying to live a balanced lifestyle (61.8%), fear of failing (67.0%), fear of disappointing the family (62.8%), getting access to the internet (57.5%), food served at the university cafeteria (67.0%), electricity supply (61.3%), and water supply (71.7%) were the stressors reported by the respondents.

Discussion

The aim of this study was to identify factors that cause stress among first-year undergraduate medical students at a Nigerian university. The academic domain brings into play unintended stress, especially among medical students because of the rigour and volume of work. Many medical undergraduate students experience stress at some point in their medical training. However, the sources and intensity of the stress might differ across levels. According to our findings, many of the students found the number of materials to study (69.3%) as a stressor, although this is a little higher than what was reported by a study conducted in Tamil Nadu, India, which found vastness of academic curriculum (61.5%) as a determinant of stress (Anuradha, Dutta, Raja, Sivaprakasam, & Patil, 2017). The slight difference in the result could be because of the fact that the latter study was done among undergraduate medical students and not just first-year students alone. This may reflect the difficulty that is associated with the transition from secondary to tertiary institution, where they are expected to shift from the traditional teacher-centred teaching methods to self-directed and student-centred teaching methods, and also take responsibility for their learning.

Handling the academic workload (59.9%) was identified as one of the stressors among first-year medical students; this is in congruence with a study conducted in Florida, USA, which reported that academic workload emerged as the top stressor across all years among medical students but found it to be the highest among first-year medical students (Hill, Goicochea, & Merlo, 2018).

Table 2. Stressors among undergraduate first-year medical students (n = 212)

Table 2. Sitessors among undergraduate first-year medica			
Items	Yes	No	Missing
	[n (%)]	[n (%)]	[n (%)]
Handling the academic workload	127 (59.9)	79 (37.3)	6 (2.8)
Studying for tests and exams	130 (61.3)	82 (38.7)	0 (0)
Sitting tests and exams	96 (45.3)	112 (52.8)	4 (1.9)
Attending classes	84 (39.6)	126 (59.4)	2 (1.0)
Amount of materials to study	147 (69.3)	62 (29.3)	3 (1.4)
Getting good enough grades for the next level	138 (65.1)	70 (33.0)	4 (1.9)
High-pressure periods, when lots of assessment is due	147 (69.3)	58 (27.4)	7 (3.3)
Group-work assignments	81 (38.2)	124 (58.5)	7 (3.3)
Not being able to manage my time effectively	113 (53.3)	97 (45.8)	2 (0.9)
Finding time for both university and leisure activities	117 (55.2)	93 (43.9)	2 (0.9)
Inconvenient timetabling	113 (53.3)	94 (44.3)	5 (2.4)
Getting everything done	146 (68.9)	61 (36.8)	3 (1.4)
Trying to live a balanced lifestyle	131 (61.8)	78 (36.8)	3 (1.4)
Trying to feel OK about myself	87 (41.1)	122 (57.5)	3 (1.4)
Fear of failing	142 (67.0)	69 (32.5)	1 (0.5)
Dealing with my personal issues	108 (50.9)	104 (49.1)	0 (0)
Not being able to think clearly	81 (38.2)	130 (61.3)	1 (0.5)
Feeling like I'm not intelligent enough to be in medical school	75 (35.4)	134 (63.2)	3 (1.4)
Not being sure whether I'm studying the right degree	75 (35.4)	129 (60.8)	8 (3.8)
Loneliness	37 (17.4)	170 (80.2)	5 (2.4)
My physical health	67 (31.6)	143 (67.5)	2 (0.9)
Fear of disappointing my family	133 (62.8)	77 (36.3)	2 (0.9)
Competing with other students	99 (46.7)	111 (52.4)	2 (0.9)
Not having enough support from others	63 (29.7)	146 (68.9)	3 (1.4)
Attitude of teaching staff towards students	95 (44.8)	115 (54.3)	2 (0.9)
Approaching teaching staff for help	108 (50.9)	103 (48.6)	1 (0.5)
Delays in marking and feedback	94 (44.4)	112 (52.8)	6 (2.8)
Lack of relevance of learning tasks to my career	92 (43.4)	113 (53.3)	7 (3.3)
Paying university fees	64 (30.2)	145 (68.4)	3 (1.4)
Family finances	55 (25.9)	151 (71.2)	6 (2.8)
Financial burden of studying "Medicine"	80 (37.8)	130 (61.3)	2 (0.9)
Lack of flexibility in the study options	98 (46.2)	104 (49.1)	10 (4.7)
Quality of university buildings and equipment	80 (37.7)	127 (59.9)	5 (2.4)
Lack of recreational activities on campus	86 (40.6)	122 (57.5)	4 (1.9)
Having to hang around in-between classes	69 (32.5)	136 (64.2)	7 (3.3)
Getting access to the internet	122 (57.5)	89 (42.0)	1 (0.5)
Food served at the university cafeteria	142 (67.0)	65 (30.6)	5 (2.4)
Electricity	130 (61.3)	81 (38.2)	1 (0.5)
Water supply	152 (71.7)	58 (27.4)	2 (0.9)
Accommodation	116 (54.7)	95 (44.8)	1 (0.5)
	-10 (0/)	, , ()	1 (0.0)

However, the comparability of both studies is limited because of the instrument used. It is understandable that because of the vastness of the academic curriculum, handling it might pose a measure of stress, especially for first-year medical students who are just transiting from secondary to tertiary institutions. Our study found that getting good enough grades for the next level (65.1%) was a factor that caused stress. A study also reported performance in formative and summative examination (66.0%) as a source of stressor among the first-year medical students (Salgar, 2014). Some other studies also found performance in college and university level examination as the major stressor and found academic performance as one of the stressors which had a median severity of 5, as such it was rated severe (Gazzaz, et al, 2018; Sarkar & Saha, 2015). However, these two latter studies might not be completely comparable because of the different instrument that was employed. Notwithstanding, identifying getting

a good enough grade as a stressor can be attributed to the fact that the number of students who apply to study medicine most times far outweighs the quota and as such, a weeding system is put in place, especially from 1st year to 2nd year to drop those who do not attain good enough grade.

In our findings, we report that trying to live a balanced lifestyle (61.8%) is a stressor. Hill, et al. (2018) reported that conflict with work-life balance emerged as the top stressor across all years among medical students, but it was found to be the highest in first-year medical students. With the unexpected burden of the new environment and new dimension of responsibilities, indeed trying to get their rhythm might constitute stress. Fear of failing (67.0%) was identified as a significant stressor, which is similar to performance anxiety for upcoming examinations felt by 59% of the medical students in India (Bala, et al, 2018). Gade, et al. (2014) also identified fear of failing as a stressor among first-year medical students at NKP Salve Institute of Medical Sciences and Research Center, Nagpur, India (Gade, Chari, & Gupta, 2014).

This study reported fear of disappointing the family (62.8%) as a stressor among first-year undergraduate students; this is in agreement with a study conducted by Salgar (2014) who reported that the most common stress factor reported by participants was high parental expectations (80.9%). The difference in the result might be due to the different environments in which the study was conducted. Many other studies, although done among non-medical undergraduate students, also reported high parental expectation 71.3% (Srivastava, et al, 2020) and 84.2% (Suleyiman & Zewdu, 2018) as a source of stress. This shows that parental expectation has the capability of inducing stress either consciously or subconsciously. Food served at the university cafeteria (67.0%) was identified as a prominent source of stress. The study conducted by Gade, et al. (2014) also identified food in the canteen and hostel as a stressor among medical students. Food served can be a stressor among first-year medical students because of the paradigm shift from homemade food to non-homemade food that could be considered to taste differently and be monotonous. This is compounded by the fact that most private universities like where this study was conducted do not allow students to prepare their meals.

Electricity supply (61.3%) was reported as a stressor among the first-year medical students in this study; this is in contrast with a qualitative study conducted by Khadija Qamar among medical students which found that 73.0% of students were satisfied with the hostel facilities (Qamar, Khan, & Kiani, 2015). The study environment and the method of data collection might be responsible for this. Electricity supply is erratic and a major challenge in most developing countries like Nigeria. Although the private university where the study was conducted has a self-generating electricity supply, the supply to student hostels is often regulated to conserve energy.

Conclusion

This study observed the number of materials to study, getting good enough grades for the next level, fear of failing, and disappointing family amongst others as sources of stress among first-year medical students. Time is changing and so are the increased responsibilities bestowed on medical undergraduates; as such, it is pertinent that educators rise to the occasion and ensure a supportive and conducive learning environment that will foster better student adjustment.

Conflict of Interests

Authors have no conflict of interests.

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