PREVALENCE, SOURCES AND PATTERNS OF STRESS AMONG UNIVERSITY STUDENTS.

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ABSTRACT.

Stress may affect students' health and academic outcomes. This may result in health-risk behaviours and social problems e.g. substance abuse, which in turn may lead to other health issues. Globally, environmental stress contributes significantly to overall stress loads of individuals. Poor environmental conditions may interfere with optimal human functioning and academic outcomes. The magnitude of this problem is worrisome. The paper, a cross-sectional total population study was aimed at assessing perceived stress; identifying the sources of stress; and assessing how stressful the university environment was for the students. All the 200 level students (382; 236 males and 146 females), both medical and medical sciences students of faculty of medicine Ahmadu Bello University, Zaria, participated in the study. Quantitative and qualitative methods were used to collect the data. Descriptive statistics was employed to analyze the data using SPSS software version 20. Results revealed that more than 12 different sources of stress (both academic and non- academic issues) were identified, piling pressures on the students. Students' consensus existed across gender and course of study in rating the university environment as "very stressful". Stress was found to be highly prevalent among students; most prevalent among Nursing students (72.5%), followed by Human Physiology students (68.9%), then Human Anatomy students (64%) and finally Medical students (62.4%), it was also more prevalent among female-(75.3%) than male-(61.4%) students. Results were discussed in the context of stress management interventions to improve quality of life of the students, promote health and improve academic outcomes.

Keywords: *Perceived stress, sources of stress, environmental stress, stress rating.*

INTRODUCTION

Stress is a global health epidemic(World Health Organization[WHO] 2012), and accounts for 70-90% percent of visits to physician's office globally .The WHO survey estimates that mental disease including stress-related disorders, would be the second leading cause of disabilities by the year 2020. Stress contributes to more than 50 percent of all illnesses in the United States of America. It is a significant source of morbidity; causes new health problems and worsens existing illnesses. Stress- related illnesses afflict more than 20 percent of people globally. Available statistics indicate that about 110 million people die annually due to stress (Wiki Answers, 2013;Voltz,2013).This means that 7 people all around the world die every 2 seconds! It is a frequent reason for work absenteeism and leads to higher absenteeism than illness and injury. According to American Psychological Association (APA, 2012), stress keeps 40 percent of adults awake at night. It is a major contributor to physical and mental health problems with more than 40 different medical diagnoses directly attributable to it; including hypertension, joint disorders, asthma etc. Report on job stress in Nigeria indicates that Nigeria has a stress Index of 2.2, Ghana 2.33, China2.63, South Africa 2.35, Italy 2.4, Japan 2.4. The data were collected from Job Form and people rated their jobs on a scale of one to five(1-5) where one is the worst and five the best index.(Salary Explorer Report, 2013)

Acute stress is the leading cause of sudden death especially in young healthy people. Chronic stress may initiate health problems and worsen existing illness leading to poor health outcomes, difficulties in learning and other academic outcomes.

Previous studies(Simpson, Hopman and Singer, 2000) indicate that medical students were more likely to perceive themselves to become more ill than others.

Chronic stress can impair developmental growth in children by lowering the production of growth hormones from the pituitary gland (Kolk, 2007).Studies in southern Nigeria(Oku, Owoaje, Oku, and Ikpan 2015; Abiola, Polusny, Erbes, King, King and Litz, 2015), described stress as highly prevalent among university students in southern Nigeria.

According to Sely (1957), stress is a state within an organism subjected to a stimulus perceived as a threat. It occurs when demands being made on an individual are greater than their ability to cope. Psychologically, stress is a particular relationship between a person and environment that is appraised by the person as taxing or exceeding the individual's coping resources and engendering their well-being (Lazarus and Folkman,1984).It occurs when the demands being made on a person are greater than their ability to cope.
Globally, environmental stress contributes significantly to overall cumulative stress of individuals. It is a problem of serious magnitude.

Perspectives of Stress

Cohen, Kessler, and Gordon,(1997); described three perspectives of stress namely:

Psychological perspective; where emphasis was on peoples' subjective evaluation of their ability to cope with the demands presented to them by certain situations and experiences.

Biological perspective ; where emphasis was on the activation of certain physiological systems in the body that have been shown time and time again to be regulated by both psychologically and physically demanding conditions.

Environmental perspective – the emphasis was on the assessment of environmental situations or experiences that were objectively related to substantial adaptive demands.

The initial approach to stress management intervention is analyses of stressors and events that cause stress(Holmes and Rahe, 1967). The impression that individuals have about what causes them stress is important. Compared to work-related stress, studies of causes of stress among students have not been adequately attended to. There is need to investigate the major sources of stress, perceived stress and patterns of stress among university students so that adequate and effective stress reduction programs may be designed and implemented to address the stressors. Few studies if any have attempted to fill these gaps in knowledge using these special population-university students.

The research questions are;

1.   What do university students perceive to be major sources of stress in the university environment?

2.   What difference exists by course of study and perceived stress?

3.   What difference exists by gender and perceived stress?

4.   How do students rate university environment in terms of stress?

The main objective of the study was:

-        to assess the prevalence, sources and patterns of stress among university students in northern Nigeria.

METHODOLOGY

A cross-sectional, descriptive, total population study was conducted. The participants were 382 2nd year students –both medical and medical sciences (Human Anatomy, Nursing and Physiology) students-of faculty of Medicine, Ahmadu Bello University, Nigeria. Informed consent was obtained from the subjects and ethical clearance was also obtained from the assistant dean (pre-clinical) of the faculty. Altogether 440 structured questionnaires were distributed and self - administered by the respondents. But at the end, 382 questionnaires were duly completed and returned (a retrieval rate of 86.82%). The questionnaire, contained socio-demographic information and variables for the study, of the 382 students, 236(61.8%) were males; 146(38.2%) females; 32(8.4%) were married; while 350(91.6%) were single. Medical students were 117(30.6%), Nursing students 102(26.7%), Anatomy 89(23.3%) and Physiology 74(19.4%). They were mainly Hausas 213(55.7%) and Muslims245(64.1%).The age-range was between 18- and 42 years; mean age was 27 years and standard deviation, 7.1. Table 1 below indicates the socio-demographic characteristics of the respondents more appropriately.

Table 1: Socio-demographic characteristics of the participants

		Number	**%**
Sex	Male	236	61.78
	Female	146	38.22
Marital status	Single	350	91.62
	Married	32	8.38
Ethnicity	Hausa	213	55.76
	Yoruba	20	5.24
	Igbo	1	0.26
	Others	128	33.51
Religion	Muslim	245	64.14
	Christian	137	35.86
	Others	0	0.00
Course of study	MBBS	117	30.63
	Human Anatomy	89	23.30
	Human Physiology	74	19.37
	Nursing	102	26.70

Source: Survey data (2015).

Key Research Variables of the study.

The questionnaire also contained information on the 3 key major variables of the study:
1)   Global rating of stress measure was used to assess **perceived stress** and prevalence of stress. The question was '**To what extent do you feel**, you are under stress?' This had four different ratings:
1.   Not at all.
2.   I have little stress.
3.   I have substantial stress.
4.   I have too much stress.

'Not at all' and 'I have little stress' meant NO stress while 'I have substantial stress' and 'I have too much stress' meant presence of stress.

The internal consistency.

2)   Sources of stress were identified by asking the subjects to: 'List and describe everything in ABU environment that gives you stress/trouble'

3)   Environmental stress Rating was assessed by asking the students to: 'Rate the university environment on a scale of 0-10(zero to ten), where zero is NOT stressful and ten EXTREMELY stressful.

The internal consistency of the questionnaire as indicated by the Cronbach's alpha value was 0.81.

RESULTS

Statistical analyses were performed on the data using SPSS version 20.Only 382 subjects whose questionnaires were duly completed were used for analyses, even though it was administered to all the 2nd year students in the faculty of medicine.

Results revealed that a total of 18 different stress factors (both academic and non-academic issues) emerged, when all the sources of stress that were listed and described by all the subjects were pooled together. They include: Health, Fear, Time, Workload, Finance, Change, Inadequate facilities, Poor relationship, Insecurity, Family, Inconducive environment, and others (see Table 2). Results also indicated that stress was highly prevalent among university students-most prevalent among nursing students (72.5%), followed by Human Physiology students (68.9%), then Human Anatomy students (64%), lastly Medical students (62.4). (See Table 4).

Furthermore, results demonstrated that students unanimously rated the university environment as very stressful ($\bar{X}$=8), using a scale of 0-10, where 0 was NO stress and 10 extremely stressful.

Qualitative analysis;

A detailed content analysis was carried out to identify any systematic differences or patterns of perceived stress factors(sources of stress) by gender and by course of study(departments) of the participants(Tables 3 and 4).Comparing the two tables; females cited nine(9) stress factors more often than males –Health, Time, Academic Workload, Finance, Change, Poor Relationship, and Family pressure.

Medical students also cited three(3) stress factors more often than Medical sciences(Nursing, Anatomy, and Physiology) students.

Table 2: Sources of Stress listed and described by Course of Study(%).

Stress factors	MBBS (%)	NURSING (%)	ANATOMY (%)	PHYSIOLOGY (%)
Health	22 (18.8)	18(17.6)	5(5.6)	10(13.5)
Fear	67(57.3)	61(59.8)	41(46.1)	40(54.1)
Time	57(48.7)	50(49.0)	28(31.5)	25(33.8)
Workload	24(20.5)	57(55.9)	52(58.4)	44(59.5)
Finance	51(43.6)	45(44.1)	49(55.1)	39(52.7)
Change	26(22.2)	33(32.3)	25(28.1)	14(18.9)
Inadequate facilities	51(43.6)	55(53.9)	37(41.6)	38(51.4)
Poor relationship	50(42.7)	49(48.0)	45(50.6)	34(45.9)
Insecurity	18(15.4)	9(8.8)	5(5.6)	5(6.8)
Family pressure	21(17.9)	7(6.9)	18(20.2)	10(13.5)
Inconducive environment	45(38.5)	17(16.7)	28(31.5)	12(16.2)
Others	12(10.2)	6(5.9)	9(10.1)	5(6.8)

Source: Survey data (2015).

KEYS TO STRESS FACTORS

Some of the stress factors or stress elements listed and described include:

Fear- fear of examination results, failure, withdrawal from academic program, cadavers (corpses of humans to be dissected for studies in faculty of medicine).

Time-lack of time to socialize, early morning lectures, fixing of lectures during week-ends, no time to read, no time to take siesta etc.

Poor relationships-between lecturers and students, room- mates, boy -friends and girl- friends, class mates, Christians and moslems.

Change- new environment different from home, new culture.

Inadequate facilities –too many people in a class room and hostels (accommodation), lecture venues, laboratory facilities etc.

Others - wrong course, errors etc. .

Table 3: Sources of Stress By Gender And Percentage

Stress factors	Male (%)	Female (%)
Health	38 (16.1)	30 (20.5)
Fear	134 (56.8)	79 (54.7)
Time	102 (43.2)	68 (46.6)
Workload	90 (38.1)	63 (43.2)
Finance	101 (42.8)	77 (52.7)
Change	59 (25.0)	38 (26.0)
Inadequate facilities	110 (46.6)	71 (48.6)
Poor relationship	103 (43.6)	72 (49.3)
Insecurity	28 (11.9)	13 (8.9)
Family pressure	30 (12.7)	26 (17.8)
Inconducive environment	71 (30.1)	38 (26.0)
Others	20 (8.5)	12 (8.2)

Female students cited some stress elements more frequently than male students, e.g Health, Time, Workload etc(see qualitative analyses above)

Table 4: Prevalence of Perceived Stress among Students.

Stress	Medical students (%)	Nursing (%)	Human anatomy (%)	Human physiology (%)
Not at all	2 (1.7)	3 (2.9)	2 (2.2)	3 (4.1)
A little bit	42 (35.9)	25 (24.5)	30 (33.7)	20 (27.0)
I have stress	62 (53.0)	59 (57.8)	48 (53.9)	44 (59.5)
I have too much stress	11 (9.4)	15 (14.7)	9 (10.1)	7 (9.4)
Total	117	102	89	74

Perceived (psychological) stress was highly prevalent among different categories of students, more prevalent among medical sciences students(72.5% for Nursing; 68.9% Human Physiology; 64%, Human Anatomy; and 62.4% for medical students).

Table 5: Prevalence of Perceived Stress by Gender

Male	Female
61.4%	75.3%

Stress was more prevalent among female- (75.3%) than male-(61.4%) students

DISCUSSION

Findings of this study indicate that generally perceived (psychological) stress was highly prevalent among university students; more prevalent among non- medical students than medical students; and female than male students. This is consistent with reports of studies (Oku et al., 2015; Abiola et al., 2015) conducted in southern Nigeria, where 94.2% of medical students perceived medical training as "stressful" and over 70.3% perceiving it as "very stressful". However, their studies found stress to be more prevalent among medical- than among non- medical students. This is not consistent with the findings of this study.

The findings of the present study also indicate that more than 12 different sources of stress(both academic and non- academic) were listed and described by the students; and that the university environment was unanimously rated as "very stressful" by the students across gender and course of study. These suggest that this study actually assessed different aspects of stress and that different aspects of academic environment may generate stress-both academic and non- academic stress -in the students. A measure of perceived (psychological) stress may reflect current feelings of stress instead of cumulative stress. Exposure to a stressor does not always lead to stress.

Another very important finding of this study was that the students although exposed to the same academic setting, medical- and non-medical students; male- and female students reported different patterns of stress. This is consistent with theories of stress and coping (Cox, 1978), which stated that stress was a perceptual phenomenon. Those who reported high levels of stress may have lacked access to coping resources e.g. economic resources, social support e.t.c., more so as financial and relationship difficulties topped the list of significant sources of stress described by the students. The amount of stress experienced may be influenced by the individuals' ability to cope with stressful events and situations. Some situations that may be motivating to one person could feel stressful to another person due to their different perceptions of the same situation or event.

CONCLUSION

The findings of this study support the position that stress is individualized as are stress coping strategies. This is because stress is a perceptual phenomenon arising from a comparison between the demands on a person and their coping resources (Cox, 1978).What is experienced is determined not by events or changes in the environment but what is perceived and responded to.

Some situations or events that may be motivating to one person could feel stressful to another due to their different perceptions of the same situation or event.

RECOMMENDATIONS

The data regarding sources of stress, perceived(psychological) stress, and patterns of stress specific to university students may assist University Health Services(Sickbay), Counseling Centre, Public Health Department e.t.c to target specific needs of students.

Stress management interventions may help to reduce stress loads of students: improving quality of life and academic outcomes. The attention of the university authorities was therefore called to the following recommendations:

The university work-study scheme should be revived as financial difficulties were among the top stressors listed by the students.

Students' support, welfare and counseling committees should be formed in all the faculties to cater for the specific needs of the students.

Teaching methods should be improved using ICT (Information Communication Technology) materials.

Lecture time-tables and rescheduling of lectures should be done with students' participation.

Stress theories; principles and strategies of stress management should be integrated into the existing university curriculum especially, General Studies(GENS.) curriculum.

The university environment should be restructured to reduce its stress- inducing elements.

Above all, more resources should be allocated to Counseling centre and faculties for periodic stress management interventions.

LIMITATION

This study reflects findings from only one faculty of the university, therefore the results may not be generalized to other institutions in the country. More studies are needed to extend the present study to other faculties and institutions especially in the northern parts of the country.

REFERENCES

Abiola, T. Polusny, M.A. Erbes, C.R., King D.K., King L., and Litz B.T., (2015): Psychological Distress due to academic stress among Clinical Students, in a Nigerian University. *Nigerian Journal of Basic and Clinical Studies. 12(2)*, 81-85

American Psychological Association (2009): How Does Stress Affect Us? *American Psychological Association (APA) Report.*

American Psychological Association (2012): Stress in America Survey, *American Psychological Association (APA) Report.*

Centre for Disease Control (2007): *Survey Data and Documentation Reports*, Center for Disease Control (CDC),

Cohen, S., Kessler, R.C. and Gordon, L.U., (1997): *Measuring Stress: A Guide for Health and Social Scientists.* Oxford: Oxford University.

Cox, T (1978): *Stress*. London: MacMillan

Holmes, T. and Rahe, R. (1967): Health Risks Due To Stressful Events. *Journal of Psychosomatic Research, 11,* 213- 218.

Kalia, M. (2002): Assessing the Economic Impact of Stress-the modern day epidemic. Pub Med, June: 51(6 supply): 49-53.

Kolk, V. and Bassel, T. (2007): *The Experience Of Mind, Body And Society.* New York: The Guild Press.

Lazarus, R.S. and Folkman, S. (1984): *Stress, Appraisal and Coping.* New York: Springer Publishing

Oku, A.O., Owoaje, E. T.,Oku, O. O. and Ikpan B.M.,(2015) : Prevalence of Stress, Stressors and Coping Strategies among Medical Students in a Nigerian University. *African Journal of Medical and Health Sciences, 14:* 29-34.

Raj, R.S., Simpson, C.S., Hopman, W.M. and Singer, M. A.(2000): Health-related Quality of Life among Final Year Medical students. *Canadian Medical Association Journal, 162 (4)* : 509- 510.

Sely, H. (1957): *The Stress of Life.* McGraw-Hill,

Salary Explorer Report (2013): Job Stress Index. *Retrieved. January, 2015http://www.salaryexplorer.com*

Voltz, L. (2013):7 People Die from Stress Every 2 Seconds. Richmond Hypnosis Center Report, April 12, 2013. *Retrieved on 10/7/2015 http://www.richmondhypnosiscentre.com*

Wiki Answers (2014): How Many People Die In A Year Because Of Stress? *Retrieved on 6/3/2014http://www.answers.com.>Answers.com>WikiAnswers...*

World Health Organization (2012): *Stress: A Global Epidemic*. World Health Organization (WHO), Global Burden of Disease Survey.