

Stress and Academic Programme Type: Perspective on Polytechnic Students in Nigeria

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Abstract This study examines the stress levels of students in Kaduna Polytechnic based on Marital status, College type, and programme of study. Stress among students of tertiary institutions is normally unavoidable parts of everyone's life that call periodic assessment. Three null hypotheses were formulated to guide the study. Stratified random sampling technique was utilized to select 250 students in the 2014/2015 academic session. The instrument for data collection was adapted from the well-known DHFS Wellness perceived Stress Scale developed by Cohen (1983) structured on a five-point rating scale. Its computed reliability using Cronbach alpha gave 0.70 coefficients. The data was analyzed using parametric statistics of t-test and one-way ANOVA. The results indicated that student's levels of stress are significantly high. Similarly academic programmes, College type and marital status significantly influenced the students' levels of stress. Based on these findings, some recommendations were made among which is institutional management and other stakeholders should provide psychological and academic counseling services to the generality of the students.

Keywords: stress, academic programme, perspective, wellness perceived stress scale

Cite This Article: Yahya Saleh Ibrahim, Shahimi bin Mohtar, Muhammad Abdullahi Sabo, Mohd Kamarul Irwan Abdul Rahim, and Ahmad Shabudin Ariffin, "Stress and Academic Programme Type: Perspective on Polytechnic Students in Nigeria." *American Journal of Public Health Research*, vol. 3, no. 6 (2015): 214-220. doi: 10.12691/ajphr-3-6-3.

1. Introduction

Stress is as old as human existence. It is an unavoidable phenomenon since it forms part of the human daily activities in the bit to meet the needs for human survival and progression. The pervasiveness of stress cut across myriads of every individual experiences irrespective of age, occupation, social status, race, cultural background amongst others [28]. Most working generations are today under one Stress or the other. This type of stress has been recognized as one of the fundamental source health challenges that affect both the individual employee and the organizations he is working under (International Labour Organisation (ILO), 1992, 1986). The alarming state of stress conditions in most working environment made the World Health Organization (WHO) to cite stress as a global epidemic [40]. The classification of stress refer to as 'Karoshi' in Japan above malaria fever call the attention of most academic environment to not only study it but to assign special importance to finding solution to its menacing consequences. Stress become an important subject for studies in academic circles especially in the field of Clinical Psychology and behavioural science [2,3,29]. Basically, attention was directed at studying the apparent factors or causes that has direct consequences on the healthy condition of the employees, students and the

organization or institutions, its harmful effects on wellbeing and how it affects students performance and organizations productivity.

For our educational system to achieve the much desired goals/objectives, it is necessary to assess and identify the levels of stress associated with our school environment and evolve strategies to tackle its escalation. Stress among students in tertiary institutions has a long time effects on the future of the country. These therefore call for serious investigation into the scourge to reduce its negative consequences on future working generations, research and development of the country at large.

2. Literature Review

It has been identified that the period of transition of students from secondary schools environment to tertiary education environment is a process that could cause serious psychosocial, academic and social shock that end up serving as stressor [37]. Added to it is the level of change from being guided to being independents, this serving as comparatively different educational system poses yet another source of stress for the students [7]. Tertiary institution environment have entirely different working surroundings, making the new students so often to face new methods of teaching-learning, new academic requirements, new type of relationship between students

and lecturers and even the relations among students from different ethno religious-tribal affiliations tends to serve source of stress concern (Saipanish, 2003). Assessing the issue further, Saipanish (2003) concludes that any type of stress associated with students can affect learning, memory and retention capability. Advancing on the effects of stress on students, Niemi & Vainiomaki opined that stress can cause physical and mental health problems with the tendency to diminish students' self-confidence and social relationship with fellow students and at worst back home. Silver and Glicker, extricates that stress has serious impact on students' academic performance and final accomplishment (Saipanish, 2003).

In Nigeria, most of our tertiary educational institutions are mixed in nature be it University, Colleges of education and Polytechnics or any monotechnics. Academic environments by virtue of their demand are considered as stressful atmosphere. Put in another way, due to the expected changes, students can potentially experience different types of stress that can affect their mental, social and physical health and their academic achievement.

Stress can be regarded as one of the main aspects of our modern life, resulting from the rapid and dynamic changes in human life; hence the present age can be called ages of stress. Supporting this assertion Ongori and Agolla [25] and Agolla [2] opined that stress has become an imperative issue in studious sphere as well as in our civilization, because students suffer from academic stress resulting from testing, giving of home works, other assignments and other school requirements which may exceed their abilities. Parents too have their own stress resulting from child education, unemployment and modern life hassling, to the extent that the same person may suffer from different types of stress [18].

A large number of researches had been conducted assessing the levels of stress of students as well as looking at the relationship of stress factors among these students at tertiary institutions of learning and the effect on their academic performances [18]. Stress can be defined as a "state of mental or emotional strain or suspense" and also as "a number of usual reactions of the body (mental, emotional and physiological) interaction for self preservation". Researchers like Vermunt and Steensmen [39], and Topper [38] all have defined the term stress as "the perception of discrepancy between environmental demands (stressors) and individual capacities to fulfill these demands".

While Moronkola and Okanlawon [21] citing Communications Research Machines (1974) viewed stress as any stimulus that disturbs the biological or psychological equilibrium of an organism. Ensor, Means and Henkel [11] believed that the word stress is used often to describe man's reactions to the demands of modern and complex lifestyles. Although, the word stress connotes a negative reaction, it is not the pressure of living conditions of life but response to those pressures. The body reacts to excessive demand by attempting to maintain equilibrium among its internal processes.

Stress is an indispensable and inevitable concomitant of human existence. It is to some level an indispensable part of human lives in the sense that without some stress, we would be listless and apathetic creatures. It is also inevitable because it relates to an external event, be it pleasurable or anxiety producing [29]. When a student

responds to a stressor and it produces positive results, then such students have coped well and experienced the feeling of success [40]. A student response to a particular stressful situation makes a stress good or bad (positive or negative). When there is a good response (Eustress) to a stress then the student is on the positive side and when there is a harmful or bad response (Distress) to a stressor, then such student is on the negative side [38]. A student's ability to cope with life situations will make the same stressor to be either positive or negative [21].

While a number of studies confirm a no significant effects of demographic characteristics (age and gender) on student performance, Kruse et al, [18] found age and gender to have an effect on academic performance. In another study conducted by, Clarke and Ramsey the results of such research found age to correlate with performance in most institutions and programmes of study. In that research it was found that older university students perform better than younger students in certain courses. But in contrasts, in sciences courses like Mathematics and general Science, mature-age students were adversely affected as a results of decline in learning speed with advancement in age, but with the depth of learning increase.

Giving credence to this assertion, Ahmed, Riaz and Ramzon [5] expressed that stress in academic institutions can have both constructive and pessimistic consequences if not well coped with. Stress can exert effect in two dimensions; first it may be positive or negative. When stress leads to positive track it enhance performance of the students, give confidence and lead to excellent final results. Secondly if stress moves in a negative direction, student's performances and practice, physical and psychological well-being suffers [5].

Academic stressors include the student's acuity of the general knowledge base and the acuity of inadequate time to develop. Other stressors are numerous assignment to tackle, antagonism with other students, disappointments, insecurity in the campus, failures and poor relationships with other students or lecturers, family or problem at home [13]. Student encounter with some institutional happenings could be stressors such as each semester loaded with academic stress as continuous assessment, projects demanding money to execute, examinations, grade completion and large contents of subject matter to cover and master [18]. Other possible stressors students have to navigate are crowded lecture halls, semester system pressure and insufficient resources to execute academic work [24]. Thus that force desire to achieve well in the examination or time for examination and continuous assessment preparation are key stressors or environmental stress in academic institutions [12]. Indeed fear of academic failure related to these tasks is a definite stressor itself. Thus, academic, financial, time or health-related and self-imposed stressor can affect a student at a glance [21].

Several researchers like Malach-Pines and Keinan [20], Ongori [24], Ongori and Agolla [25], and Moronkola and Okanlawon [21] had identified the following signs and symptoms of stress among students: loss of appetite, lack of energy, taking over the counter medication, high blood pressure, loss of sleep, fidgeting, forgetfulness, frequent urination, over or less eating habits, prefer loneliness, having headache or backache, shouting or weeping,

feeling depressed, difficulty in concentration, agitation, nervousness, experimenting with or excessive smoking, drinking of alcohol and or use of psychoactive drugs among others.

The consequences of stress effects on students can be multi-dimensional. A number of scholars classify these stressors in relation to their intensity, regularity or duration of the stress [14]. Thus, the effects can be classify as (i) social or relational (inside and outside the institutions), which directly distress life in terms of accomplishing the actual target of being in the school, (ii) the psychological consequences of stress on students can be based on individual interpretation of what goes on around him/her, leading to internal conflicts, perception of life and expectation and values. Here the individual laces great demands on the extent that they find it difficult to overcome the problems, thus its attendant consequences. (iii) the physiological and health-related effect affects the emotion and cognitive body functioning of the individual in many ways that could to some degree caused common stress-induced diseases like diminished immunity, headache, anxiety, decreased sex derive, digestive problem, insomnia, hypertension, heart disease, etc. (iv) the academic effects may include decline in performances in GPA, truancy and absenteeism, inability to do and submit assignment and projects. This is supported by Ongori and Agolla [25].

In tertiary institution of learning, students are likely to be victims of stress which if not properly managed can lead to burnout phenomena. Coping strategies of stress to students include among other effective time management, collective support, positive re-appraisal and engagement in leisure and recreation pursuits [20,24].

3. Significance of the Study

Research into institutional stress should be regarded as an issue of serious educational importance that effects the student's entire population. Its attendant effects could be reflected in student social, academic and mental health. Thawabieh and Qaisy [37] reported that stress can lead to academic decline, poor relationship with peers and family members and overall dissatisfaction with life. This periodic research will serve as an assessment tool toward the identification of stressor among students that will help the educational administrators, lecturers, supervisors and guidance counselors and other health-related stakeholders to monitor and control the stress level of students. Each tertiary institution has to asses it students stress levels in order to provide them with the suitable mental health and conducive academic stress-free environment and efficient strategies and techniques to cope with the modern stressful life. The identification of institutional stressors will not only assists the student in their academic achievement but will go a long way in producing students that are:

1. Productive
2. Emotionally stable
3. Academically outstanding
4. Practical useful and
5. As well competent and cooperative in terms of team work formation and performance

This therefore makes the study relevant at this moment, where most institutions are faced with a number of

research challenges, targets and goal setting and performance improvement.

4. Hypotheses of the Study

The following Three null hypotheses were formulated and tested in this study. The hypotheses were all tested at .05 levels of significance.

H₁The College Units of study will not significantly influence the students' level of stress.

H₂The academic programmes of study will not significantly influence the student's levels of stress.

H₃Marital status will not significantly influence the student's levels of stress.

5. Research Methodology

5.1. Research Design

The researchers made use of descriptive survey research deign to gather the feelings and thoughts of representative samples of the accessible student's population in Kaduna Polytechnic as one of the Nigerian Tertiary institution of learning.

5.2. Population and Samples of the Study

The population of this study comprises of all students who had registered for the new 2014/2015 academic session in Kaduna Polytechnic (Federal). The institution is the largest Polytechnic in West Africa, offering close to 100 different academic programmes with about 22,000 student's population spread across five Colleges, comprising of 40 academic departments. The study used stratified random sampling technique to select five Schools; thereafter five departments from which the 250 students sample size were randomly selected based on the proportionate population of each department. To perform an experimental research involving human or animal respondents, the sample size is an important factor to consider so as ensuing ethical demand. Any research that uses an under-sized sample exposes the respondents to potentially inappropriate treatments which reduce the chances of advancement of knowledge. So also is an over-sized sample, with an unnecessary number of respondents exposed the respondents to a potentially wrong treatment, by denying a potentially beneficial respondents opportunity to participate [19]. The accepted number for a "sample size should be larger than 30 and less than 500. In the case of a dub sample research at least 30 participants are appropriate [19]. In choosing sample size consideration must be given to a sample that will represent most of the characteristics of the population under investigation. A survey with 100 respondents with margin error of 10% could be a starting point, with the hope of having 60 respondents this will provide a 95% chance that between 50 (60 - 10) and 70 (60 + 10) of the population participation (Shaiful, 2003). The higher *N* is, the smaller will be the margin of error, so also is the measurable results [1]. Despite all these a quality sample size must consider the rate of response. This is so because incomplete as well as illegible responses are not useful observations. To make sample appropriate all these must

be taken into account [28]. The choice of 250 respondents for this study was premise on all these considerations.

5.3. Instrument for Data Collection

The researchers strictly comply with the adopt/adapt strategy of instrument used. A structured questionnaire was adapted to collect data for the study. The research tool is made up of two sections. Section A represents demographic information of the respondents such as College Units, academic programmes, gender, age, and marital status. While the section B is the internationally and widely used DHFS Wellness Perceived Stress Scale developed by Cohen. This research instrument is a ten-items questionnaire used to measure a person’s perception of stress over the past month and to determine the likelihood of whether perceived stress contributed to their being more susceptible to stress-induced conditions inimical to their health. It is structured on a five-point rating scale with 0= “Never”, 1= “Almost Never”, 2=“Sometimes”, 3=“Fairly Often” and 4=“Very Often”. Higher perceived stress scale scores are associated with higher levels of stress and indicate a greater likelihood for stress interfering with things like life style changes, vulnerability to comprised health and increased susceptibility to stress-induced-illness [16]. The researchers had calculated Cronbach alpha coefficient of 0.70 for this scale, which is reliable for this study [23]. This is the interpretation classifications of stress levels as given by the developers of the scale.

Total score	Your Perceived Stress Level is:	Health Concern Level
0-7	Much Lower than Average	Very Low
8-11	Slightly Lower than Average	Low
12-15	Average	Average
16-20	Slightly Higher than Average	High
21 and over	Much Higher than Average	Very High

5.4. Data Collection Procedure

The copies of the questionnaire were administered personally by the researchers and assisted by colleague lecturers during their lecture periods in the different department sampled. The students were specifically briefed on what was expected of them during the data collection process which last about ten minutes. This process ensured that high return rate is achieved.

5.5. Methods of Data Analysis

Source of Variation	Sum of squares	Df	Mean of squares	F	P-value
Between groups	205.957	4	51.89		
Within Groups	5786.207	245	23.617	2.180	.072
Total	5992.164	249			

Source: Field Survey.

The students were divided into the five College Units of study. The results indicated that that there was statistically significant difference among the College Units of study F

The empirical data obtained were collated, cleaned and analyzed using both descriptive and inferential statistics. Before embarking on the analysis, based on the scoring instructions of the scale, questionnaire items numbers 4, 5, 7 and 8 were reverse scored because they are positively worded before summing the items for each respondent. The demographic data were analyzed using descriptive statistics while the three hypotheses were tested using parametric statistical techniques of t-test, and one and two-way analysis of variance (ANOVA). The analyses were facilitated with the use of computer statistical software of Statistical Package for Social Science (SPSS) version 20.

6. Result Presentation

6.1. Demographic Variables

The descriptive statistics of the respondents revealed that out of the 250 samples, 56(22%) are from CST, 40(16%) each are from CES and COE, 64(26%) are from CBMS while 50(20%) are from CASS. Majority of the respondents 187(75%) are offering ND academic programmes, 27(11%) HND and 36(14%) B.ED(Tech). Majority of the respondents 136(54%) are males while the rest 14(46%) are females. Out of the total number of respondents, 113(45%) belong to the age bracket of 21-25years followed by 49(20%) between 26-30years, 44(18%) belong to 16-20 years age bracket. In terms of marital status, majority, 170 (68%) are single, 68(27%) are married while 12(5%) are separated.

The results of data analyses are presented hypothesis-by-hypothesis.

Ho¹: The College Units of study will not significantly influence the students’ level of stress.

The study also hypothesized that the students’ levels of stress does not vary according to their College Units of study. Since we have five different College Units of study, this hypothesis was analyzed using One-way analysis of variance (ANOVA). The results of the analysis are presented in Table 1

Table 1. One-way analysis of variance on the influence of College Units of study on students stresses levels.

College Units	N	Mean	Std. Dev.
C.S.T	56	15.11	4.93
C.E.S	40	14.25	4.22
C.O.E.	40	16.15	5.09
C.B.M.S	64	16.81	4.55
C.A.S.S.	50	16.30	5.42
TOTAL	250	15.81	4.91

Source: Field Survey.

(4,245) =2.180, P=.072 >0.05 in terms of their stress levels. Since the P-value of .072 is greater than the .05 level of significance, the null hypothesis which stated that

the student's levels of stress do not vary according to their College units of study was therefore not retained. The actual difference in the mean scores among the College Units of study was quite big considering the fact that is more than half. This implies that the stress level of students varies in respective of their College Units of study.

Ho²: The academic programmes of study will not significantly influence the student's levels of stress.

Table 2. One- way ANOVA of the influence of academic programmes of study on students levels of stress

Academic programmes	N	Mean	SD
ND	187	15.43	5.16
HND	27	18.56	2.89
B.Ed (Tech)	36	15.72	4.10
Total	250	15.81	4.91

Source: Field Survey.

Table 2b

Sources of variation	Sum of squares	Df	Mean of square	F	P-value
Between Groups	230.361	2	115.180	4.94	.008
Within Groups	5761.803	247	23.327		
Total	5992.164	249			

Source: Field Survey.

The one-way ANOVA results between-groups analysis of variance was conducted to explore the influence of academic programmes of study on student's levels of stress. The students' representatives were classified into three groups. The results indicated a statistically significant difference in the students stress scores for the three programmes, $F(2,247) = 4.94$, $P=.008 > .005$. Despite reaching statistical significance, the mean score difference between HND and the other two groups was quite clear. The effect size calculated using eta squared was .03. Post-hoc comparison using the Tukey HSD indicated that the mean score for HND Group ($M=18.56$, $SD=2.89$) was significantly different. B. Ed Group ($M=15.72$, $SD=4.10$) and ND Group ($M=15.43$, $SD=5.16$) did not differ significantly from one another. Based on this,

the second null hypothesis was thereby rejected. This implies that there was significant difference among the groups.

HO³: Marital status will not significantly influence the student's levels of stress.

Table 3. One-way ANOVA of the influence of marital status on students levels of stress

Marital status	N	Mean	SD
Single	170	15.38	4.88
Married	68	15.72	4.52
Separated	12	22.50	1.88
Total	250	15.81	4.91

Source: Field Survey.

Table 3b

Sources of variation	Sum of squares	Df	Mean squares	F	P-value
Between Groups	569.567	2	284.783	12.97	.000
Within Groups	5422.597	247	21.954		
Total	5992.164	249			

Source: Field Survey.

Table 3 show the one-way ANOVA analysis between groups conducted to determine the influence of marital status on student's levels of stress. Participants were divided into three groups of marital status (Single, Married and separated). The results reveals a statistically significant difference $F(2,247) = 12.97$, $P=.000 < .005$. In spite of reaching statistical significance, there was a clear actual difference in mean scores for Separated group compared to the other two groups. The effect size calculated using eta squared was .09 (medium). Post hoc analysis using Turkey HSD indicated that the mean score for Separated Group ($M=22.50$, $SD=1.88$) was significantly different compared to either Married Groups ($M=15.72$, $SD=4.52$) and Single Group ($M=15.38$, $SD=4.88$). Based on this analysis, the third null hypothesis was therefore rejected for the alternative hypothesis. This then implies that there is a statistically significant difference among the three groups in terms of marital status influencing the student's levels of stress.

7. Discussion of Findings

The first finding is that students irrespective of their College Units of study and academic programmes do experience similar magnitude of stress, implying that there is no difference among the College Units. This finding is not in consonant with the finding made by Thawabieh and

Qaisy [37] who found that gender, College and study level are statistically significant factors in causing stress. The findings of the study conducted by Khan [17] revealed that self-esteem and stress are strongly correlated with each other but gender has no significant impact on students' GPA. In another study the results reveals that Male students' more than female students experienced greater stress due to absence of social support. This is as a result of female students having a better social support received from their families compared to male students who are usually left to fend for themselves in schools [35,36]. This therefore supported the results of this research. The second finding of the research work indicated that academic programmes do influence the student's levels of stress, indicating that despite the fact that HND students are fewer in number; their mean stress level is the highest. This is in agreement with the finding of Thawabieh and Qaisy [37]. In another study conducted in Uganda the results reveals that, new students experienced the most academic stress associated with financial short supply ($\chi^2 = 10.71$; $p = .03$), followed by academic overload and time shortages with ($\chi^2 = 10.23$; $p = .04$) and social expectations ($\chi^2 = 10.79$; $p = .01$) compared with the old students. Study habits also reveals that those with intrinsic motivation scored ($M = 6.52$; $SD = 1.18$) among the respondent while a habit of studying at least a chapter was the lowest study habit among the Ugandan students with ($M = 3.86$; $SD = 1.35$). The result

of the third hypothesis reveals the results of stress level by faculty type. The chi-square results indicated that students of development studies had better study habits and less stress compared with other faculties with ($\chi^2 = 8.75$; $p = .03$). This results also translated into a better grade with GPA/CGPA 4.40 - 5.00 category for those in development studies and ($\chi^2 = 11.47$; $p = .01$) GPA/CGPA categories for those in the other faculties with bad study habit and high stress level. The third findings indicated that marital status do influence the students levels of stress with the Separated group having a higher mean score value for their stress levels. It is obvious that students who are separated from their parents are bound to face series of psychological, economic, financial problems and thus require periodic counseling services to either reduce or overcome their troubling distracters [37]. This study is in tandem with study conducted for matured students i.e, aged, married, and females to have performed woefully as results of these demographic characteristics in basic science like mathematics. This results presented by Krausel, et al [18], signifies that marital status serve as a stressor to most matured students in schools. In another study by Nuako, K. Charlotte, Agnes, & Juliet [22] for evening nontraditional students in Ghana reveals as follows; that office work, family responsibility and educational career made most female married students more stressful than their unmarried counterparts. Added to this married students without own means of transportation are more stressful than those with personal cars. This is independent of gender type. Those with family supporting their educational career experienced less stress compared to those without such support. The study uses Two-Way ANOVA and T-Test [22].

8. Conclusion and Recommendations

Based on the findings of this study the following recommendations are made:

1. Students need to accept and recognize their individual limitations. Many a time's student's impost irrational time pressure on themselves, thinking I must do this now or never. Learn how to schedule time to handle assignments, projects, read for tests and examination, etc without creating much pressure for selves.
2. Students need to develop positive focus. They should take time each day to develop and perform self-analysis leading to self-actualization.
3. Students in stress management classes are taught to walk-away from stressful situations and return after calming down as a method for controlling stress.
4. Students should endeavor to seek professional counseling from experts – counselors and health professionals. Non-prejudiced listening can help them sort out the contradictions in their lives, to identify faulty thinking and to accomplish their realistic goals.
5. Periodic researches assessing the stress levels of students should be a continuous activity a means to an end and not an end in itself.
6. The need to evolve a good social support system in the various institutions will go a long way in

guaranteeing students social relationship intertwining with academic activities with less stressful conditions.

7. Lower cost accommodation and conveniences away from that of the younger students will go a long way in reducing stress level for nontraditional students (married men and women and older students).
8. Children center for evening and weekend student remain very important stress relieving agents and as well source of employment and revenue for the institution and the community where the institution is located.

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