Depression, Anxiety, and Stress among Medical Education Tutors: Issues for Academic Prospects

In-text: (Abdullahi, 2019)

Your Bibliography: Abdullahi, S. (2019). Depression, Anxiety, and Stress among Medical Education Tutors: Issues for Academic Prospects. In: T. Umar, ed., *Multifarious Issues in Nigeria Today: Multidisciplinary Approaches*, 1st ed. Akure: Science and Education Development Inst., Nigeria, pp.37-56.

Chapter Six

Depression, Anxiety, and Stress among Medical Education Tutors: Issues for Academic Prospects

Abdullahi Sabo Muhammad
Department of Education (Technical), College of Science and Technology, Kaduna Polytechnic, Kaduna

Abstract

The present study has been conducted to determine the prevalence levels of Depression, Anxiety and Stress among medical educators in Kaduna Polytechnic, Kaduna, Nigeria. Five research questions and hypotheses were formulated to guide the study. A descriptive survey research design was utilized for the study. Simple random sampling technique was used to select the participants. The instrument for data collection was adapted from an internationally-developed tool used in various similar researches (DASS 21) constructed by Lovibond and Lovibond, (1995). The tool consists of three sub-scales with seven items each measured on 3-point rating format with different classification levels. The data were analyzed using both descriptive and inferential statistics. The results indicated that DAS prevalence levels were high among medical educators. There was a significant relationship among DAS with the respondents. While Depression and stress tend to be high among medical educators, anxiety tends not to be prevalent. Based on these findings, recommendations were made among which is to provide medical educators, counseling experts, and psychotherapists with information which is useful in planning, designing and strategizing interventions to effectively and efficiently deal with problems confronting students in our schools.

Keywords: Depression, Anxiety, Stress, Medical Education, Tutors

Introduction

Today, there is an upsurge increase in students' population seeking admission into tertiary institutions in Nigeria. The situation is even more worst in professional programs compared to academic programs. According to Manpreet and Maheshwari (2011) the process of education is a very stressful experience. University students encounter a great deal of academic, personal and social stress during their academic activities. The medical school environment has been also recognized as a stressful one with the negative effects

on the academic performance, physical and psychological well-being of the students (Firth-Cozen, 2011). Students could be presented with failure to cope in anxious situations, test or performance anxiety, social phobia and sometimes severe forms of depression and panic disorders (Elzubeir, Elzubeir, and Magzoub, 2010).

Depression, anxiety, and stress are among the psychological problems that are common among students including Medical Education trainee-tutors. Supporting this assertion several studies have reported a higher prevalence of psychological problems such as stress, anxiety, and depression among medical students than even in general population and age-matched peers (Dahlin, Joneborg and Runseon, 2005; Abdullah and Gabr, 2014). Some researchers like Schmitter, Leidi, Beck, and Rammelsberg (2001) explained that by the fact that medical students face unique academic challenges that render them more vulnerable to stress and anxiety than students of the other disciplines. According to Yasin and Dzulkifli (2011) citing Porter (1990), up to 60% of university students left university without finishing their degrees, the majority of these students leave within the first two years due to inability to manage these psychological conditions especially, to cope with stress. Similarly, Steinberg and Darling (1994) reported that 50% of the university students consulted mental health service complained of difficulties in study

anxiety, tension, and depression. They reported that these conditions contributed to poor grades in courses.

It is an axiomatic fact that depression anxiety and stress were found to be interrelated to each other. The overlapping symptoms of these three psychological problems can lead to all sorts of academic problems that can give impact to academic achievement among medical education tutors. It is well known that stress is associated with the development of anxiety and depression, a positive relationship between stress, anxiety, and depression is well established (Kurebayashi, Prado and Silva, 2012; Manpreet and Maheshwari, 2015). In addition, according to the Psychological Foundation of Australia (PFA, 2014), these three problems indicate a composite state of negative emotional symptoms.

In terms of consequential effects, these problems can lead to poor psychological well-being that interferes with learning and limits the academic performance of students (Chemomas and Shapiru, 2015), and lower productivity, increase suicidal thoughts and minimize the quality of life (Manpreet and Maheshwari, 2015). In addition, it has been found that student's performance in school, college and university is influenced by the symptoms of depression (Fine and Carlson, 1994; Stark and Brookman, 1994), stress (Dusselier, Dunn, Wang, Shelly and Whalen, 2005) and anxiety (Auson, Bernstein and Hobfoll, 1984) which

could lead to difficulties in concentration, lack of motivation and interest, poor attendance and physical health such as headache and fatigability. These conditions will invariably influence a student's academic achievement.

Therefore, to detect these psychological problems among medical education students may lead to increased mental illness morbidity with undesired effects throughout their teaching careers and lives. Early detection of such problems shortens the duration of the episode and events, the social impairment in the long term (Pignone *et al.*, 2012). It is important to identify the prevalence of and risk factors of psychological problems among, this unique group of medical education tutors which not only affect their health but also their academic achievement. This research was therefore carried out to determine the prevalence of depression, anxiety, and stress among medical education tutors in Kaduna Polytechnic, Kaduna.

Depression among Medical Educators
There is a plethora of studies related to depression, anxiety, and stress among nursing or medical students. A depressed mood can be conceptualized as the experience of unhappiness or distress. Depression indeed may involve feelings of being sad, weak, melancholic, disappointed, frustrated, helpless and hopeless (Sarson and Sarson, 2012). Many depressed individuals, medical education tutors inclusive, may be

unable to perform well in academic life because they do not have courage in what they are doing. Medical educators may feel that they are not reaching the standard performance set for them. Consequently, they continuously feel disappointed and despairing, perceiving things negatively and thus consider themselves as failures. This condition if allowed to accumulate, definitely can contribute to many serious psycho-social problems in their academic life such as poor grades or dropping out of the programs. Buttressing further, Surtees, Wainright, and Pharoah (2002) in their survey, found these conditions reduced the likelihood of achieving a first-class degree among first-year students, although this relationship disappeared when adjustment was made for other factors such as homesickness. However, the study used nursing students and is in a university while this study is in a polytechnic and with Medical educators who are more matured and responsible.

Many clinical descriptive reports speculated that depression may be a constituting factor in poor academic performance (Fine and Carlson, 1994). Due to these reasons, several approaches have been conducted to investigate and determine the pattern of correlation between depression and academic achievement. For instance, Stark and Brookman (1994) cited by Yasin and Dzulfiflii (2011) obtained teachers and parents global ratings of students' academic performance and ratings of severity of students' depressive

symptoms. The former was an instrument used to measure students' Academic Performance and study habit, while ratings of severity of students' depressive symptoms were used to measure the depression level of the students. The result of the studies revealed that there was an inverse relationship between academic achievement and depression.

This research stand-point was further supported by the findings of Zaid, Chan, and Ho (2007) whose study on emotional disorders among medical students in one of the Malyasian private college discovered that students who experienced depression had lower academic performance. However, the study reviewed investigated Malaysian students and not Nigerian medical educators as was the case with the present study. Similarly, a study by Sharina, Lekhraij, and Nadarajan (2003) revealed that 41.9% of students in one of the Malaysian public institutions were found to have depression, and this had affected their academic performance. This then invariably shows that depression is capable of adversely affecting the performance of the students, implying that the higher the depression, the lower is likely to be the academic achievement of the students.

Anxiety among medical Educators
According to Yasin *et al.*, (2011) anxiety is a psychological disorder that is associated with significant suffering and impairment in functioning. Wilson,

Nathan, O'Leary, and Clark (1990) had earlier expressed that it is a blend of thoughts and feelings characterized by a sense of uncontrollability and unpredictability over potentially adverse life events. Series of researches had been conducted both in a laboratory and natural settings exploring the relationship between anxiety and academic performance. Individual students experiencing anxiety do show apprehensions that often interfere with performance in everyday life as well as academic situations. Generally speaking, anxiety is expected to exert a negative effect on performance.

A very consistent research finding shows that individual students or learners who have a high level of anxiety usually perform less well than those who have low anxiety on evaluative tasks (Vogel and Collins, 2001). Supporting this assertion, in a study conducted by Anson, Bernstein, and Hobfoll (1984) on the relationship between anxiety and academic performance, it was found that anxiety was significantly and negatively correlated with grades obtained by the students.

In addition, numerous studies have shown that socio-demographic data such as gender, family residence, father's educations, father's work and student grade of the previous year were associated with negative emotional symptoms (Amr, El-Gilan, El-Moafee, Salama and Jimenez, 2011). Furthermore, interest in the field of study and various

stressors such as fear of failure, self-reported anxiety, and depression, increased class workload, accommodation problems, congested classroom, students assignments, stress-related parent cares, stress from teachers and nursing staff, dissatisfaction about the training environment, boredom at work, fear of failure in examinations, conflict situations with colleagues, unavailability of professional counseling services, death of a family member or a close person, increasing arguments with family members and missing opportunities to meet loved ones were associated with negative emotional symptoms and may negatively affect academic performance of students (Akhu-Zahaya *et al.*, 2015; Amr *et al.*, 2011; Dahir and Mazloum, 2012; Rathnayoke and Ekanayka, 2016).

Similarly, the way and manner students perceive and experience their academic-related matters as important or less important is also one of the factors that could affect the performance of the students. Highlighting this Vogel and Collins (2000) expressed that if an individual's experience of the previous achievement is negative, then the anxiety level is higher and this leads to lower performance. Invariably, if the experience is positive, then the anxiety level is lower and this leads to higher performance. In brief, it is significant to consider motives, aptitudes, cognitive assessments of the task and past experience when analyzing anxiety and examining how it relates to academic performance among students.

In a related study, Andrews and Wilding (2004) revealed that 40% of a cohort of students in a University college that attended the students' health clinic for psychological problems is characterized by anxiety, tension, and poor concentration. Compared with the norm, the cohort of the students as a whole also had elevated neuritosim scores. Consequently, their distress levels were found to be associated with lower academic performance. However, the study investigated students in an Indian University and not Nigerian students in a polytechnic.

Another study on anxiety conducted by Seligman and Wuyak (2007) found that highly anxious students were significantly more likely to score lower on measures of academic achievement and peer acceptance for, longitudinal analyses revealed that highly-anxious students scored significantly lower on measures of academic achievement, aggression, and peer acceptance compared to their less-anxious peers.

It could be seen with all the reviewed literature that anxiety can directly positively or negatively influence student's academic achievements. It was reported that anxiety could affect students' academic achievement in the sense that students with high anxiety level perform poorer compared to those with low anxiety.

Stress among Medical Educators

Depression, anxiety and stress levels in the academic community are considered as significant indicators for medical health. Thus, failure to detect and address these psychological problems properly will, unfortunately, lead to increase psychological morbidity with undesirable impact on student's performance, their profession and lives. Stress is a mechanism of an internal or external demand made-up on the body (Dusselier, Dom, Wang, Shellas and Whalen, 2003). It is considered as a state of the individual that results from their interaction with the environment that is perceived as too demanding and a threat to their well-being. The stressors are not only physical but may also be social, psychological, emotional and academic in nature. With respect to the source of stressors, the top ten stressors chosen by the students were namely academic and personal factors (Redeef, Faisal, Ali and Ismail, 2014).

Academically speaking, stress was found to be part of a student's life and could impact how students cope with the demands of academic life. It is a fact that students often report experiencing academic stress at predictable times each semester with the greatest sources of academic stress resulting from taking and studying for examinations, grades completion, and the large amount of content master in a student's amount of time (Rawson, Blamer and Kendall, 1999).

Research shows that there exists a relationship between stressful life events and poor academic performance among college students and there is a connection between health-related quality of life and stress (Dusselier *et al.*, 2005; Misra and McLeani, 2000). Because stress often adversely affect psychological and physical health, undergraduates' students reported that stress was the most common health factor impacting their academic performance (Dwyer and Cummings, 2011). Buttressing further, Sefree, Yasin and Dzulkifli (2011) specified that 50% of University students who consulted mental health service complained of challenges in study, anxiety, tension, and depression which contributed to poor grades in courses. Demakis and McAdams (1994) found that undergraduate students who reported heightened levels of stress had significantly more physical health problems and less satisfaction towards academic achievement compared to those reporting lower levels of stress. The perceptual notion of stress by the students could also play significant roles as far as it seriousness is concerned. When stress is perceived negatively or becomes excessive, according to Murphy and Archer (1996), students experience physical, psychological impairment. Indeed, excessive stress levels among students were found to reduce the effectiveness of their study which invariably contributes to bad habits and results in negative long-term consequences which include

absenteeism, poor academic performance and dropping out of school (Yasin and Dzulfifli, 2011). Wintre and Yefle (2000) further revealed that increase in stress during the first year predicated decreased overall adjustment and made the students more vulnerable to many social and physiological problems, thus contributed to lower grade point average (GPA) in the final year. The findings reviewed in the previous studies found that stress influence academic achievements. The presence of stress could adversely affect a student's performance in their academic life. Consequently, the higher the stress level, the lower the academic performance.

Related to this research, students who are experiencing psychological problems such as depression, anxiety, stress, being unhappy, sad, they may face problems in managing their academic performance. Consequently, this may lead to educational dissatisfaction. Educational satisfaction leads to happiness and contentment. Happiness according to Demirbati (2011) can be described as often being in a state of joy or as a state of satisfaction. In previous studies, many variables have been shown to be related to happiness (Seligman, 2008). Happiness and educational satisfaction leads to progress.

Psychological stability is indeed an important predictor that could contribute to high academic achievement. Students need to cope with

psychological and psycho-social changes that are connected to the development of autonomous personal life and additionally they have to cope with the academic and social demands that they encounter in their studies and on their preparation for professional careers. The relationship between students' expectation and their satisfaction with the quality of the services provided by educational institution plays an important role in shaping their reputation of academic institutions. Understanding and knowing the expectations of students may constitute a source of information for higher education institutions and these could be involved in the creation of their strategy of developing their service quality. Hence, it is very much crucial to periodically assess and examine the psychological well-being of students. It is against this background that this present study intends to investigate and determine the prevalence levels of depression, anxiety, and stress among students in Nigerian polytechnic.

Research Questions
Four research questions were formulated to guide this study.
1. What is the prevalence level of Depression, Anxiety and stress among Medical trainee- students?
2. What is the difference between the depression, anxiety and stress levels of PHC and DNE medical trainee-students?
3. What is the difference between the depression, anxiety and stress levels of

male and female medical trainee-students?

4. To what extent will age bracket influence the depression, anxiety and stress level of medical trainee-students' students?

Research Hypothesis

The following null hypotheses were postulated and tested at .05 alpha levels

1. Medical Students prevalence levels of depression, anxiety and stress will not be significantly high.

2. There is no significant difference in the depression, anxiety and stress levels of PHC and DNE medical trainee- students.

3. There is no significant difference in the depression, anxiety and stress levels of male and female medical trainee-students

4. The depression, anxiety and stress levels of medical trainee-students will not be influenced significantly by their age brackets.

Methodology

Research Design: This research was a quantitative work that used descriptive survey design. According to Cohen, Manion, and Morrison (2014), surveys collect data at a particular point in time with the intention of describing the nature of existing conditions or identifying standards against which existing conditions can be compared or determine the relationships that exist between specific events. In the context of this work, the variables of interest are prevalence levels of depression, anxiety, and stress.

Area of the Study: The research was conducted among two academic programs, Diploma in Primary Health Care Tutors (PHCT) and Diploma in Nursing Education (DNE), in Kaduna Polytechnic, Kaduna.

Participants: The participants in this study are the entire Medical Education tutors in the two programs numbering 90 during the 2016/2017 academic session. This consisted of 41 DNE two, and 45 PHC. However, only 70 copies of the questionnaire were returned. It is thus a census study.

The instrument for data collection: A structured and adapted questionnaire was used as a tool for data collection in this work. The tool consists of two parts. Section A elicited the demographic profile of the Medical Educators while section B measured the different research constructs as described below:

(1) The Depression, Anxiety and Stress Scale (DASS 21): The DASS is an internationally developed tool and used in various similar studies (Abdullahi and Gobir, 2014; Safree, Yasin and Dzulfifli, 2011). The DASS is designed to assess aspects of depression, anxiety, and stress

using a multidimensional approach in adolescents and adults (Lovibond and Lovibond, 1995). The DASS is a set of three-self report scales designed to measure the negative emotional states of DAS.

The DASS 21 is a set of a self-administered instrument with well-established psychometric properties in clinical and non-clinical samples and has been shown to differentiate between the three states of DAS. This tool measures the current symptoms of DAS. The Depression scales assess dysphasia, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia and inertia. The Anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety and subjective experience of anxious effects. The Stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient.

Each of the three scales consists of 7 items answered using a 0 – 3 rating options, where 0 = did not apply to me and 3 = applied to me very much or most of the time. The DASS 21 as used in this research implies the total score for each scale is obtained by summing up the scores the respective scale items and multiplying it by 2 (i.e. the range of possible scores for each scale is 0-21 multiply by 2 for the DASS 21 compared to DASS 42). Consequently, the minimum score is 0 and the maximum score is 42.

The scores considered in the normal range differ across the scales. It is 0-9 for Depression, 0-7 for Anxiety and 0-14 for Stress. Scores above these ranges indicate the degree of the problem from mild to extreme. The final score of DASS can be categorized as shown in Table 1.

Table 1: Severity of Depression, Anxiety and Stress Scale.

RATING	DEPRESSION	ANXIETY	STRESS
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Sever	28-42	20-42	34-42

Source: Lovibond and Lovibond (1999) and Grawford and Hary (2003).

The developers of the scale calculated the internal consistency for each scale of DASS as Depression = .91, Anxiety = .84 and Stress = .90. This then shows that it is a reliable scale to be used for data the collection as these reliability estimates are above the recommended threshold

level of .70 (Nunnally, 1994, Gliem and Gliem, 2003; Field, 2010).

Ethical Consideration: This research meets the expected ethical standards; the principle of confidentiality, informed consent permission (from an authority, participants) and right to withdraw from the study were followed by the researchers.

Data Collection: The copies of the questionnaire were administered to the respondents in a classroom situation. The researcher briefed the respondents on the purpose of the research and the procedures involved. Participants were then informed about the right not to participate in the study, for participation is voluntary. Confidentiality of the participant's information given was guaranteed. They were given ample time to complete all sections which lasted about 15 minutes.

Data Analysis: Data were analyzed using both descriptive and inferential statistics. The descriptive statistics used include frequency, percentage, mean and standard deviations. The parametric tests of one sample (population and independent t-tests, ANOVA) were used to test the hypotheses. All hypotheses were tested at .05 alpha levels. The statistical analysis was facilitated with the help of IBM SPSS version 23.

Results

Table 2: Demographic characteristics of respondents (N=70)

Variables	Frequency	Percentage
Program: (a) PHC	30	43
(b)DNE	40	57
Gender: (a) Male	29	41
(b) Female	41	59
Age Brackets (a) 27-30 Years	11	16
(b) 31-40 years	33	47
(c) 41-50 years	21	30
(d)51-60 years	5	7
Marital Status (a) Single	6	9
(b) Married	60	86
©Separated	4	6
Working Experiences (a) 1-5 years	12	17
(b) 6-10 years	18	26
(c) 11-15 years	21	30
(d) 16-20 years	9	13
(e) 21 years and above	10	14

The total no of respondents was 70, with 30(43%) been PHC medical educators while 40(57%) been DNE medical educators. Gender distribution reveals that 29(41%) are male while 41(59%) are female. The age brackets statistics reveals that 11(16%) is between 27 – 30 years old, 33(47%) between 31-40 years, 21(30%) between 41-50 years while 5(7%) are between 51-60 years. Marital status data have shown that 61(9%) are single respondents, 60(86%) are married while 4(6%) are separated. Working experiences shows that 12(17%) had between 1-5 years working experiences, 18(26%) between 6-10 years, 21(30%) between 11-15 years, 9(13%) between 16-20 years while 10(14%) from 20 years and above.

Hypothesis-by-hypothesis presentation

HO1: Medical Students prevalence levels of depression, anxiety, and stress will not be significantly high.

The respondent's scores on the DAS scale measured by the7 items each were summed-up and multiplied by 2. Based on the scale scoring interpretation levels, a level of Depression, Anxiety and Stress prevalence levels to be considered significantly high, it should be higher than (Depression = 9, Anxiety = 7 and Stress = 14 respectively) out of a maximum of 42 scores. This comparison was done using t-test of One-sample (also known as population t-test). The results are presented in Table 3.

Table 3: Population t-test analysis of medical educator's prevalence levels of DAS

Measures	N	Sample Mean	Sample SD	Reference test-value	T	P - value	Remark
Depression	70	1.30	.73	9	-88.34	<.001	S
Anxiety	70	1.66	1.05	7	-42.66	<.001	S
Stress	70	1.13	.41	14	-259.94	<.001	S

The empirical data analysis revealed statistically low significant prevalence levels of DAS among the medical students. With Depression, the results produced (M=1.30, SD = .73, $t(69)$ = -88.34, p<.001, anxiety produced (M=1.66, SD = 1.05, $t(69)$ = -42.66, p<.001 while stress revealed a statistically significant results of (M=1.13, SD = .41; $t(69)$ = -259.94, p<.001. With these results, the first null hypothesis was therefore not supported and thus has to be rejected. This then implies that the prevalence levels of depression, anxiety, and stress among medical education students are significantly low. A closer look reveals significant negative t-values for DAS and comparatively, the reference test values higher than the sample mean values. Furthermore, Table 3 tends to shed more light showing the distributions of the DAS prevalence levels based on the scale classification criterion.

Table 4: Prevalence levels of Depression, Anxiety, and Stress among medical educators

Category	Frequency	Percentage	Mean ± SD	Cronbach Alpha (α)
DEPRESSION: (a) Normal	58	83	1.3(SD ±.73)	.83
(b) Mild	5	7		
(c) Moderate	5	7		
(d) Severe	2	3		
(e) Extremely Severe	-	-		
ANXIETY (a) Normal	45	64	1.66(SD ± 1.05)	.72
(b) Mild	11	16		
(c) Moderate	9	13		
(d) Severe	3	4		
(e) Extremely Severe	2	3		
STRESS: (a) Normal	63	90	1.13(SD ± .41)	.76
(b) Mild	5	7		
(c) Moderate	2	3		
(d) Severe	-	-		
(e)Extremely Severe	-	-		

Table 4 shows the distribution of the medical educators spread across the DAS. The analysis reveals that 58(83%) of the medical educators' depression is normal, 5(7%) each are mild and moderate while 2(3%) are facing severe depression. In terms of Anxiety, 45(64%) are normal, 11(16%) are suffering from mild anxiety, 9(13%) moderate anxiety, 3(4%) suffering from severe anxiety while 2(3%) suffering from extremely severe anxiety. With stress, 63(90%) of the medical educators have normal stress, 5(7%) are suffering from mild stress, 2(3%) from moderate stress. Comparatively, it could be seen that 12(17%) are suffering from depression, 25(36%) are suffering from Anxiety while 7(10%) are suffering from Stress.

HO2: There is no significant relationship between depression, anxiety, and stress among medical educators.

Table 5: Mean, Standard deviations and inter-correlations matrix of the variables

VARIABLE	MEAN	SD	DEPRESSION	ANXIETY	STRESS
DEPRESSION	1.30	0.73	1.0		
ANXIETY	1.66	1.05	.781**	1.0	
STRESS	1.13	0,41	.830**	.737**	1.0

**Correlation is significant at .01 levels (2-tailed)

In testing this second null hypothesis, Pearson product moment correlation coefficient was utilized and the results revealed a significant moderate positive relationships between depression and anxiety r(68) = .781, p < .001, depression and stress r(68) = .830, p < .001, and anxiety and stress r(68) = .737, p<.001.

With these results, the second null hypothesis is hereby not supported and hence rejected. It implies that there is a significant relationship among medical educators as it relates to DAS.

HO3: There is no statistically significant difference between DAS levels of PHC and DNE Medical educators.

Table 6: An independent t-test on whether there are differences in the DAS level of PHC and DNE

Measures	Program	N	M	SD	Df	T	P-value	Remark
Depression	PHC	30	1.53	0.94	68	2.19	.034*	S
	DNE	40	1.13	0.46				
Anxiety	PHC	30	1.80	1.32	68	0.92	.362	NS
	DNE	40	1.55	0.78				
Stress	PHC	30	1.27	0.58	68	2.21	.034*	S
	DNE	40	1.03	0.16				

Independent sample t-tests were conducted to test this hypothesis between depression, anxiety and stress and PHC and DNE medical educators. The results yielded significant findings. Firstly, there was a significant difference in scores of PHC medical educators (M=1.53, SD=0.94) and DNE medical educators (M=1.13, SD=0.46), $t(69)$ = 2.19, p=.03. The magnitude of the difference in

the means (mean difference =.41, 95%CL: .032 - .185) was moderate (eta squared =.066 based on Cohen, 1988). With the second part dealing with Anxiety the results revealed a no significant difference in the scores of PHC educators (M=1.80, SD=1.32) compared to the DNE educators (M=1.55, SD=0.78; $t(68)$ = .92, p=.36. The magnitude of the difference in the means (mean difference = .250,

95%CL: -.297 - .792) was very small (eta squared = .014).

The third t-test analysis on Stress produced a significant difference between the scores of PHC educators (M=1.27, SD=.58) and that of DNE educators (M=1.03, SD=0.16; $t(68)$ = 2.21, p=.034. The magnitude of the difference

in the means (mean difference =.242, 95%CL: = .019 - .464) was very small (eta squared = .015).

HO4: There is no statistically significant difference between the DAS levels of male and female medical educators.

Table 7: An independent t-test on whether there are differences in the DAS level of male and female medical educators

Measures	Gender	N	M	SD	Df	T	p-value	Remark
Depression	Male	29	1.34	0.67	68	0.43	.67	NS
	Female	41	1.27	0.78				
Anxiety	Male	29	1.62	1.05	68	-0.24	.81	NS
	Female	41	1.68	0.06				
Stress	Male	29	1.14	0.44	68	0.16	.88	NS
	Female	41	1.12	0.40				

In testing null hypothesis four, independent t-tests were employed to test the constructs of DAS against gender (male and female). The results produced a non- statistically significant differences in the levels of DAS of both male and female educators.

Commencing with Depression, there was no significant difference in the scores of male educators (M=1.34, SD= 0.67) compared to female educators (M=1.27, SD=0.78; $t(968)$ = .43, p=.67). The magnitude of the difference in the means (mean difference =.077, 95%CL: -.279 to .432) was very small (eta squared =.014).

Similarly with Anxiety, there was no significant difference in the scores of male educators (M=1.62, SD = 1.05) compared to the female educators (M=1.68, SD= 1.68; $t(68)$ = -.24, p=.81). The magnitude of the difference in the means (mean difference = -.062, 95%CL: -.573 to .449) was very small (eta squared). The third construct of Stress also revealed a no statistically significant difference in the scores of male educators (M=1.14, SD=0.44) when compared with the female educators (M=1.12, SD=0.40; $t(68)$ = .16, p=.88). The magnitude of the difference in the means (mean difference = .076, 95% CL: -.186 to .216) was also very small (eta squared = .014). With these results, the fourth null hypothesis is thus supported and hence upheld. It

then implies that there is no significant difference in the levels of depression, anxiety, and stress between male and female educators in Kaduna Polytechnic.

HO5: The DAS levels of Medical Educators will not be influenced by their age bracket significantly.

The One-way ANOVA was conducted to explore whether DAS levels of medical educators will not be influenced by their age bracket groups significantly. The results presented in Table 8 indicated a

no statistically significant difference among the four age bracket groups as it relates to DAS. Results of depression indicated no significant influence $F(3,66)$ = .73, p=.54 . While the result of Anxiety revealed $F(3,66)$ = .23, p=.88. Lastly Stress indicated $F(3,66)$, = .86, p=.47. With these results, the fifth null hypothesis is therefore supported and thus sustained. It then implied that DAS levels of medical educators were no significantly influenced by their age bracket groups in Kaduna Polytechnic, Kaduna.

Table 8: One-way ANOVA of the influence of age bracket groups on DAS levels of medical educators.

Age Bracket Groups		N	Mean	Standard Deviation
Depression:	(a) 21-30 years	11	1.27	0.91
	(b)31-40 years	33	1.18	0.53
	© 41-50 years	21	1.48	0.87
	(d)51-60 years	5	1.40	0.89
Anxiety:	(a) 21-30 years	11	1.82	1.33
	(b)31-40 years	33	1.61	0.97
	© 41-50 years	21	1.71	1.10
	(d)51-60 years	5	1.40	0.89
Stress:	(a) 21-30 years	11	1.09	0.30
	(b)31-40 years	33	1.06	0.35
	© 41-50 years	21	1.24	0.54
	(d)51-60 years	5	1.20	0.45

ANOVA

Source of Variance		SS	df	Ms	F	Sign
Depression:	Between Groups	1.171	3	.390	.725	.541
	Within Groups	35.529	66	.538		
	Total	**36.700**	**69**			
Anxiety:	Between Groups	0 .771	3	.257	.226	.878
	Within Groups	75.001	66	1.136		
	Total	**75. 771**	**69**			
Stress:	Between Groups	0.445	3	.148	.860	.466
	Within Groups	11.397	66	.173		
	Total	**11.843**	**69**			

Discussion of Findings

This empirical research examined the prevalence of depression, anxiety, and stress and their interrelationship among medical educators in Kaduna Polytechnic. Kaduna. The first finding of this study indicated that the prevalence levels of DAS were low among the respondents. Comparatively, 12(17%) of the students reported mild to severe depression, 25(36%) reported mild to extremely severe anxiety while 7(10%) reported mild to moderate symptoms of stress. These findings are in agreement with similar researches conducted among nursing students (Rothnayake and Eilanyaka, 2011; Dahlin *et al.*, 2005; Abdullahi *et al.*, 2014). In addition, researchers like Schmitter *et al.* (2008) explained that by the fact that medical students face unique academic challenges that render them more vulnerable to stress and stress than a student of other disciplines.

Moreover, this study found a strong positive correlation between depression, anxiety, and stress. This result Is similarly consistent with findings of previous studies conducted in other countries (Kurebayahi *et al.*, 2012; Manpreet and Maheshwari, 2015). These three problems indicate a composite state of negative emotional symptoms among medical educators. These negative emotional symptoms lead to poor psychological well-being that interfere with learning and limit the academic performance of these students (Fine and Carlson, 1994, Dusselier *et al.*, 2005: Anson *et al.*, 1984) which could to difficulties in concentration, lack of motivation and interest, poor attendance and physical health such as headache and fatigability. Therefore, early recognition of students under poor psychological states is very important in enhancing their psychological health. Thus, interventions need to be in place to improve the psycho-social health conditions of medical educators who will assist in nurturing the country's health care workers.

The findings in relation to hypothesis three reveal significance in depression and stress while anxiety was not found to be significant among the respondents. This indeed is not surprising because earlier in the entire respondents were found to have low depression, anxiety, and stress, possibly due their exposure and maturity. With these results, in spite of the fact that the PHC students had a greater mean in terms of anxiety compared to the DNE students, the t-test results were not statistically significant.

The fourth finding of this study reveals that there was no statistically significant difference in DAS between male and female students. The finding of this research is contrary to that of Abdullah and Gabr (2014) who found that males were found to be more prone to depression than females (54% vs. 46%), this liability was inverted regarding anxiety and stress, where females were more vulnerable to anxiety and stress

than males (55% vs. 45%) and (62% vs. 38%) respectively. However, this research finding is parallel with that of (Tech, et al., 2015) who did not find any significant association between age, sex, and study course with depression, anxiety, and stress.

Lastly, the findings of the fourth hypothesis revealed a no statistically significant influence of age brackets of medical educators on their DAS levels. This finding is in agreement with the research findings of Tech *et al.*, (2015) who revealed that there is no significant correlation between the demographic factors of (age) with depression, anxiety and stress. On the other hand, this research finding is contrary to the findings of Rathnayake *et al.*, (2016) who revealed that age was found to be significantly associated with depression, anxiety, and stress. In addition, Papazisis *et al.*, (2008) also found that anxiety was higher among students in senior classes than junior classes. Usually, parallel to this increasing age, students in senior classes face many problems and challenges in their academic and personal life compared to younger students. Heavy academic work load, completing all practical components, assignments, final research project with deadlines, passing all examinations without carry over(s), preparing for new roles are all factors than can trigger DAS. These factors may contribute to high DAS symptoms among the medical educators. Therefore, they may need some attention in counseling services and other stress interventions' and management in the school.

Conclusion

The results of this research reveal that Medical Educators are also at risk of depression, anxiety and stress. The low prevalence levels of DAS Are similar to what was found in other students. The findings of this descriptive study may help identify through psychological assessment, those who are at risks of developing DAS among this special group of students. These results may also serve to provide medical educators, counseling experts and psychotherapists with information which is useful in planning, designing and strategizing interventions to effectively and efficiently deal with problems confronting students in our schools.

References

Abdullah, A. R., and Gabr, A. M. (2014). Depression, anxiety, and stress among first-year medical students in an Egyptian public university. *Int. Research Journal of Medicine and Medical Sciences*, 2(1), 11-19.

Akhu-Zaheya, L. M., Shaban, I. A. and Khater, W. A. (2015). Nursing students perceived stress and influence in clinical performance. *International Journal of Advanced Nursing Studies*, 4(2), 44-48.

Amr, A., El-Gilany, A., El-Moafe, H, Salama, L. and Jimenez, C. (2011). Stress

among Mangoura (Egypt) baccalaureate nursing students. *Pan African Medical Journal*, 8(26), 334-340.

Amr, A., El-Gilany, A., El-Moafee, H., Salam, L., and Jimanez, C. (2011). Stress among Mansoura (Egypt) baccalaureate nursing students. *Pan African Medical Journal,* 8(26), 123-130.

Andrews, B. and Wilding, J. M. (2004). The relation of depression and anxiety to life stress and achievement in students. *British Journal of Psychology,* 95(4), 509-522.

Anson, A. Bernstein, J and Hobfoll, S. E. (1984). Anxiety and performance in two ego threatening situations. *Journal of Personality Assessment,* 48(2), 168-172.

Chernomas, W. M. and Shapiro, C. (2013). Depression, anxiety and stress among undergraduates nursing students. *Int. Journal of Nursing Education Scholarship,* 10(1), 255-266.

Dahlin, M, Jonebong, N. and Runeson, B.(2005). Stress and depression among medical students: a cross-sectional study. *Med Education,* 39 594-604.

Dalir, Z. and Mazlouim, S. B. (2012). Relationship between mental health and interest in field of study in nursing and midwifery students. *Life Science Journal,* 9(3), 1916-1921.

Demakis, G. T. and McAdams, D. P. (1994). Personality, social support and well-being among first year college students. *College Students Journal,* 28(2), 235-343.

Dusselier, I., Down, B., Wang, Y. Shelley, M.K. and Whelan, D. F. (2005). Personal, Health, academic and environmental predictors of stress for residence hall students. *Journal of American College Health,* 54, 15-24.

Dwyer, A. L. and Cummings, A. L. (2001). Stress, self-efficacy, social support and coping strategies in University students. *Journal of American College Health,*54, 15-24.

Elzubeier, M. A Elzubeir, K. E. and Magzoub, M. E. (2010). Stress and coping strategies among Arab medical students towards a research agenda. *Educ. Health* (Abingdon), 23(1), 355.

Fine, J. M. and Carlson, C (1994). A system ecological perspective on home-school intervention. In J. M. Fine and C. Carlson (Eds.). *The handbook of family-school interventions: A system perspective.* Massachusetts: Allyn and Bacon.

Firth-Cozens, J. (2001). Medical student stress.*Med Education*, 35, 6-7.

Kurhayashi, L. F. S., Prada, J. M. and Silva, M.J.P. (2012). Correlations between stress and anxiety levels in nursing students. *Journal of Nursing Education and Practice,* 2(3), 128-134.

Lovibond, H. S. and Lovibond, P.F. (1995). *Manual for depression, anxiety, stress scale*. Sydney: Psychology Foundation.

Manpreet, K. and Maheshwari, S. K. (2015). Depression, anxiety and stress among postgraduate nursing students. *Int. Journal of Therapeutic Application,* 21, 12-18.

Misra, R. and McKein, M. (2000). College students academic stress and its relation to their anxiety, time management and leisure satisfaction. *American Journal of Health Studies,* 16(1), 41-52.

Murphy, M. C. and Archer, J. (1996). Stressors on the college campus: A comparison of 1985-1993. *Journal of College Student Development,* 37, 20-28.

Papazisis, G., Tsiga, E., Papanikolous, N., Vlasiadis, I and Sapountzi-Krepia, D. (2008). Pyshcological distress, anxiety and depression among nursing students in Greece. *International Journal of Caring Sciences,* 1(1), 42-46.

Pignone, M.P, Gaynes, B.N. Ruston, J. L., Burchell, C. M., Orleans, C.T. Mulrow, C. D. and Lohr, K. N. (2002). Screening for depression in adults: a summary of the evidence for the U. S. Preventive Services Task Force. *Ann. Intern Med.,* 136, 765-776.

Psychological Foundation of Australia. (2014). Overview of the DASS and its uses.http://www2.psy.unsw.ed.au/dass/over.htm.

Radaef, A. S. Faisal, G. G. Ali, S. M. and Ismaial, M.K.H.M. (2014). Sources of stressors and emotional disturbances among undergraduates Sciences students. *Malaysian Int. Journal of Medical Research and Health Science,* 3, 401-410.

Ramson, H. E. Bloomer, K. and Kendall, A. (1999). Stress, anxiety, depression and physical illness on college students. *The Journal of Genetic Psychology,* 155(3), 321-330.

Rathaayake, R. N. and Ekanyake, B. N. (2016). DAS among undergraduate nursing students in public university in Sri Lanka. *International Journal of Caring Sciences.* 9(3), 1020-1032.

Sarson, J. G. and Sarson, B. R. (2000). *Abnormal Psychology: The problem of maladaptive behavior*. Upper saddle River, N.J: Prentice Hall.

Schmitter, M., Liedi, M. Beck, J and Rammelsbeing, P. (2008). Chronic stress in medical and dental education. *Med Tech,* 20, 97-99.

Sefree, M. D., Yasin, M. D., and Dzulkifli, M. A. (2011). Differences in Depression, anxiety and stress between low and high achieving students. *Journal of Sustainability Science and Management,* 6(1), 169-178.

Seligman, I. D. and Wujek, I. A. (2007). Correlates of separation anxiety symptoms among first semester college students: An exploratory study. *The Journal of Psychology,* 141(2), 135-146.

Sherina, M. S., Lekhraj, R., and Nadarajan, R. (2003). Prevalence of emotional disorder among medical students in a Malaysian University. *Asia Pac Pan Med.,* 2, 213-217.

Stark, K. D. and Brookman, C. S. (1994). Theory and family-school intervention. In J. M. Fine and C. Carlson (Eds.). *The handbook of family school intervention: A system perspective.* Massachusetts: Allyn and Bacon.

Steinberg, T. and Darling, M. (1994). The broader-context of social influence in adolescence. In R. K. Silhereisen and E. Todt (Eds.). *Adolescence in context: The interplay of family, school, peers and work in adjustment.* New York: Springer-Verlag Inc.

Surtees, P. G. Wainwright, N. W. and Pharaoh, P. D. P. (2002). Psychosocial factors and sex differences in high academic attainment at Cambridge University. *Oxford Review of Education,* 28, 21-38.

Vogel, H. and Collins, A. (2006). The relationship between test anxiety and academic performance. *Journal of Abnormal and Social Psychology*, 67, 523-532.

Wilson, G. T. Nathean, P. E., O'leary, K. D. and Clark, L. A. (1996). *Abnormal psychology: Integrating perspective.* Boston: Allyn and Bacon.

Wintre, M. G. and Yaffe, M. (2000). Five-year students' adjustment to university life as a function of relationship with parents. *Journal of Adolescent Research,* 5(1), 9-37.

Zaid, Z. A., Chan, S. C. and Ho, J. J. (2007). Emotional disorder among medical students in Malaysian private school. *Singapore Medical Journal,* 48, 895-899.