

Burnout as Correlates of Psychophysiology.

Esther Aduke Ayeni (Ph.D)

Department of Psychology, University of Lagos, Akoka, Nigeria

adukeayeni@yahoo.com, Tel: +234-0805-891-3672

Abstract

The main objective of this study was to investigate the relationship between burnout and psychophysiology among lecturers in a tertiary institution in Nigeria. It also aimed at estimating the prevalence of burnout and examining both gender and age differences in the manifestation of burnout and psychophysiology. Three hypotheses were formulated and tested to realize the objectives. (1) There will be a significant positive correlation between the scores of the participants in MBI and PSC. (2) There will be a significant difference between male and female participants in the manifestation of burnout and psychophysiology. (3) There will be a significant difference between age groups in the manifestation of burnout. The study was carried out in University of Lagos, Akoka-Lagos, Nigeria using 550 participants (340 and 310 male and female participants respectively). Two instruments (MBI and PSC) were used to collect data. Participants' age ranged from 25 to 68 years. Three major findings resulted from the study. First, a significant correlation was found between the scores of MBI and Psychophysiology. Second, a significant positive difference was found between male and female participants in the manifestation of burnout and psychophysiology. Third, different age groups manifested burnout differently. Some of the recommendations made include: (1) public enlightenment on causes of burnout should be taken seriously by both government agencies and NGOs. (2) Organizations should put in place activities for employees' relaxation and incentives for belongingness.

Key words: Burnout, stress reaction/ level, correlate, lecturers.

1. Introduction

Burnout is a state of emotional, mental and physical exhaustion caused by prolonged and excessive stress. It reduces an individual's productivity, saps his/her energy and leaving him/her to feelings of helplessness, hopelessness and resentful. It is negatively associated with job satisfaction. The unhappiness and detachment it causes can also threaten an individual's job, relationship and health. It occurs when an individual feels overwhelmed and unable to meet constant demands.

This study investigated burnout among the university lectures for four reasons. First is the yearly teaming population of students' intake without a correlating increase in the availability of equipments and structures. Second is the economic state of the nation as a whole. There is an increase in inflation making it difficult to meet personal obligations for many lecturers. This may lead to the taking of extra work else where which is an added responsibility and subsequently extra stress. Third is the deteriorating attitude of most students to hard and honest academic work. The implication is that the moral level of these lecturers is reduced because of the lack of motivation from their students. Four, the Nigerian government through its yearly budget gives little value to education. This is reflected in the downward trend of money allocated to education despite the people's agitation. University lecturers' responsibilities apart from teaching and research may also include administrative work. While the professors may be engaged in high level of administration, many of the younger lecturers are Course Advisors. This extra work takes a substantial part of their time leaving less time for research work. The little time for research work implies less productivity and few opportunities for promotion. Few (if any) work had been done in Nigeria on burnout and stress level/ reaction among university lecturers. It had the following

2. Previous Research.

Many studies have been done on burnout in different areas of life. Evers, Welko and Andre carried out a study which explored students' and teachers' perceptions of teacher burnout in relation to the occurrence of disruptive student classroom behavior and the teachers' competence to cope with this kind of behavior. The researchers found among other things that (i) students' perceptions did not differ according to their age. (ii) A significant difference between the perceptions of male and female students in respect of emotional exhaustion and depersonalization, but not in respect of personal accomplishment. (iii) According to the students' perceptions, a considerable percentage of variance in each of the three burnout dimensions was explained by teachers' competence to cope with student disruptive behavior. (iv) It appears that teachers' and students' report differed significantly with respect to depersonalization, personal accomplishment and competence to cope with disruptive student behavior. Hakanen, Bakker and Schaufeli (2005) in their study on burnout and work engagement among teachers using 2038 Finnish teachers reported the following findings. First, burnout mediated the effect of high job demands on ill health. Second, work engagement mediated the effects of job resources on organizational commitment. Third, burnout mediated the effects of lacking resources on poor engagement. Alex (2011) explored the relationship between ethnic identity, emotional empathy, multicultural sensitivity and dimensions of burnout among 227 school teachers from urban and suburban private elementary schools in the northeastern United States. These teachers work with students from diverse ethnic groups. His findings include: (i) school teachers who reported their own traits, attitudes and behavior in a socially desirable way and higher levels of emotional empathy tends to experience lower levels of negative attitudes and feelings toward their students. (ii) Also that personal accomplishment and depersonalization were the two outcome variables strongly associated with all five predictor variables. Kyriacou (1989) pointed out from his study among other things that shortage of teaching equipment, poor facilities and large classes may be the major causes of burnout for teachers. Other researchers like Thommasen,

Lavanchy, Connelly, Berkowitz and Grzybowski (2001); Kumar, Fischer, Robinson, Hatcher and Bhaget (2007) and Ng'Eno (2007) found high levels of emotional exhaustion among their research participants.

3. Hypotheses.

Some hypotheses were formulated to verify the assumptions of this study.

H1. There will be a positive correlation between burnout and stress level/ reaction as measured by MBI and PSC respectively.

H2. There will be a significant difference between male and female participants in the manifestation of burnout and stress level/ reaction.

H3. There will be a significant difference between age groups in the manifestation of burnout.

4.1 Research Method.

4.1.1 Hypothesis 1: This postulates that there will be a positive correlation between burnout and stress level/ reaction as measured by MBI and PSC respectively. The correlation matrix was computed to verify if there was any correlation between the measures of MBI and PSC.

** Correlation is significant at $P < .01$, $df = 548$, $r = .16$

Table 1: Correlations Matrix for participants' scores in PSC and MBI.

	PSC	MBI_A	MBI_B	MBI_C	MBI
PSC	1				
MBI_A	.471**	1			
MBI_B	.516**	.677**	1		
MBI_C	.202**	-.130**	-.019	1	
MBI	.514**	.734**	.731**	.525**	1

4.1.2 Hypothesis 2 states that there will be a significant difference between male & female participants in the manifestation of burnout and stress reaction/ level. To test this hypothesis, the means and standard deviation of all the participants were computed. Female participants have slightly higher mean score and SD than male participants in all the measures (PSC and MBI with its subscales). It must also be noted that both the male and female participant's mean scores in all the measures are higher than the norm of the scale.

Table 2: Means and Standard Deviations of Participant's scores in MBI and PSC across Gender.

Subscales	Male participants (n=340)		Female participants (n=210)		Total (n=550)	
	Mean	SD	Mean	SD	Mean	SD
PSC	61.75	41.47	63.29	42.46	62.08	42.05
MBI_A	23.12	8.69	23.20	9.53	23.15	9.21
MBI_B	10.14	5.44	11.59	5.80	11.34	5.58
MBI_C	26.51	9.58	27.46	9.77	26.87	9.66
MBI	61.21	15.53	61.49	16.27	61.31	15.97

4.1.3 Hypothesis 3 says there will be significant difference between different age groups in the manifestation of burnout. The participants were divided into three age categories – young adults (25-39 years), middle adults (40- 54 years) and old adults (55- 68 years). Computed result shows that the third age group (55 – 68 years) had the highest mean scores and SD in the measures of MBI and its subscales. This was followed by age group 40 – 54 years while age group 25 – 39 years had the least mean scores in the measures.

Table 3: Means and Standard Deviations for Participants’ scores in SAS across Age Groups.

Measures	25-39yrs (n=123)		40-54yrs (n=334)		55-68yrs (n=93)		Total (n=550)	
	X	SD	X	SD	X	SD	X	SD
MBI_A	22.18	9.20	23.27	8.95	24.02	10.12	23.15	9.21
MBI_B	10.56	5.05	11.32	5.59	12.43	6.07	11.34	5.58
MBI_C	25.80	9.56	26.74	9.77	27.23	9.89	26.87	9.66
MBI	59.45	16.52	61.74	15.26	62.27	17.66	61.31	15.97

5. Results of Hypotheses Testing.

5.1 Hypothesis 1

The first hypothesis was accepted because a positive and significant correlation was found between PSC and MBI and its three subscales ($P= 0.01$, $df=548$, $r=16$).

Further analysis was done using Multiple Regression and the results are shown in tables 4a, b and c

Table 4a: Regression Analysis Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.560 ^a	.313	.308	34.97437

a. Predictors: (Constant), burnout, MBI_C, MBI_B, MBI_A

This result in Table 4a shows that all the measures accounted for 31% of the variance in stress reaction (psychophysiology).

In order to find out if the contribution of the measures is significant, ANOVA of multiple regressions was computed. The result is presented in Table 4b.

Table 4b: ANOVA Summary for the Multiple Regression Analysis

Model		Sum of Squares	Df	Mean Square	F
1	Regression	304910.202	4	76227.551	62.318*
	Residual	667870.789	546	1223.207	
	Total	972780.991	550		

a. Predictors: (Constant), burnout, MBI_C, MBI_B, MBI_A

*Significant at $P<.05$, $df = 4/546$, Critical $F =2.45$

Table 4c: Relative Contribution of independent measures to the prediction of Stress Level

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-11.040	6.180		-1.786	.075
	MBI_A	1.621	1.688	.355	.960	.337
	MBI_B	3.083	1.754	.410	1.758	.079
	MBI_C	1.083	1.699	.249	.637	.524
	Burnout	-.464	1.688	-.176	-.275	.783

a. Dependent Variable: psychophysiology scale

Regression analysis was used to determine the measures which best predict stress level/ reaction (as measured by PSC). The result shows that all the measures accounted for 31% of the variance in PSC. ANOVA of multiple regression revealed the significance of the contribution of the measures (f- value = 62.318, critical f- value = 2.45; df 4/546 at P<. 0.05).

5.1.2 Hypothesis 2 is also supported.

Table 5: Means and Standard Deviations for Male & Female Participants' Scores in MBI and PSC and their t-statistics.

Subscales	Male participants (n=340)		Female participants (n=210)		t-values
	Mean	SD	Mean	SD	
PSC	61.75	41.47	63.29	42.46	2.51*
MBI_A	23.12	8.69	23.20	9.53	1.57
MBI_B	10.14	5.44	11.59	5.80	1.98*
MBI_C	26.51	9.58	27.46	9.77	2.01*
MBI	61.21	15.53	61.49	16.27	1.99*

* Significant at P<.05, df = 548, Critical t =1.96.

Significant mean differences were found between male and female participants in the measures of PSC, MBI and two of its subscales (MBI-B& MBI –C).

5.1.3 Hypothesis 3. Also accepted is this hypothesis which stated that a significant difference will be found between different age groups in the manifestation of burnout.

Table 6: ANOVA Summary for the three age groups in MBI and its subscales.

MEASURES	Between Groups SSQ		Within Groups SSQ		Total SSQ	F
	SS	MS	SS	MS		
MBI_A	530.64	265.32	46516.30	85.03	46707.89	3.12*
MBI_B	185.61	92.81	16978.62	31.04	17164.23	2.99*
MBI_C	527.62	263.81	51170.10	93.55	51697.72	2.82*
MBI	851.46	285.30	139865.19	255.70	140716.66	3.33*

*Significant at P< .05 , df= 2/547, Critical F= 2.62

One – way Analysis of Variance (ANOVA) was computed to find out whether the observed differences in mean scores of the participants across the three age groups are statistically significant. From the result according to the calculated F – value of 3.33; 3.12; 2.99 and 2.82 against a critical F – value of 2.62 at PC 0.05; $df = 2/547$, significant mean differences were found among the three age groups confirming hypothesis three.

5.2 Scope of the research.

The research was carried out in a tertiary institution- University of Lagos, in Somolu Local Government area of Lagos state. The study established the correlation between burnout and stress level/ reaction among the academic staff of the University. It investigated the gender differences in the manifestation of burnout and stress reaction. The age differences in the manifestation of burnout was also explored. Only one institution was used because it is a self sponsored study with limited resources.

5.3. Sample The participants were lecturers from the University of Lagos. They comprise 340 male and 240 female participants. Their ages range from 25 to 68 years with a mean of 45.5 years (SD-8.3years).

5.4 Source of Data.

Two instruments were used to gather information. The first is Psychophysiological Reaction developed by Omoluabi (1996). It has a 5 point likert type response format. The values of the numbers shaded in all the items are added to get respondent's total scores.

The second is Maslach Burnout Inventory (MBI) developed by Maslach, Jackson and Leiter (1996). It is a widely used rating scale for measuring burnout. It has three subscales; emotional exhaustion, depersonalization and reduced personal accomplishment. It consists 22 statements on a scale of 0-6. The higher the respondent's score on depersonalization, emotional exhaustion and reduced personal accomplishment scale, the higher the burnout level. MBI has been found to be reliable, valid and easy to administer.

6. Summary and Concluding Remarks.

This is the first study that has examined burnout and stress level/ reaction among Nigerian University Lecturers as far as this researcher knows. All the lecturers used live within Lagos Metropolis. Their status ranged from professional cadre to Assistant lecturers. Participants age ranged from 25 to 68 years with a mean of 45.5 years (SD=8.73 years). The finding reveals a high percentage (53.63%) of stress level reaction, (49.63%) each in dehumanization and reduced personal accomplishment and a less but still high percentage of 29.27 in emotional exhaustion. This finding is significant because it indicates that the majority of the University lecturers are experiencing high stress reaction, have feelings of dehumanization and reduced personal accomplishment and are emotionally exhausted. These negative feelings -inability to cope with existing stressors, emotionally over – extended and exhausted by their work, a negative, cynical attitude, impersonal feeling towards students and feelings of inefficiency, incompetence and inadequacy will definitely have negative effect on their relationship with their students. This means that these participants feel their work has low productivity and so are achieving little. This is in agreement with Thommasen, Lavanchy, Connelly, Berkowitz & Grzybowski (2001) and Kumar, Fisher, Robinson, Hatcher & Bhagat (2007) who found high levels of emotional exhaustion among their participants. It is also consistent with Mg' Eno'S (2007) and Kyriacom (1989) findings among school teachers.

A positive significant correlation was found between level of stress/ stress reaction (as measured by PSC) and all the measures of burnout – emotional exhaustion, dehumanization (or depersonalization) and reduced personal accomplishment. In other words, lecturers who have high level of stress reaction also experience feelings (1) of being

emotionally over extended and drained; (2) uncaring and excessively detached; and (3) of incompetence. Also found was a positive correlation between emotional exhaustion and depersonalization while emotional exhaustion and depersonalization in one hand and depersonalization and reduced personal accomplishment are negatively correlated.

Female participants demonstrated slightly higher mean scores in stress reaction, emotional exhaustion, depersonalization and reduced personal accomplishment. Significant differences were also found in the manifestation of stress reaction, depersonalization and reduced personal accomplishment. The extra marital responsibilities of the female participants may account for this gender difference. Women apart from their professional responsibilities are also expected to care for their family members in form of cooking, keeping the home, caring for children and shopping. The family roles coupled with the professional responsibility may give the female participants more stress and burnout. This finding is in agreement with previous studies (Kumar et al , 2007 and Evers, Tomic and Brouwer, 2004). However , Demirel, Guler, Toktamis, Ozdemir and Sezer (2005) gave a contrary report.

The participants were divided into three age categories – 25 – 39 years, 40- 54 years and 55- 68 years. Age group 55- 68 years manifested the highest level of burnout. There was a significant difference in the manifestation of burnout among the different age groups. One would have expected the old lecturers to have adapted well to their job and so have less burnout. This was however not so among the participants. Years of accumulated stress, changes in Government policies on education over the years, the explosion of students population, deterioration of facilities, shortage of teaching equipments coupled with undisciplined behavior of students may be responsible for this finding. These are lecturers who were employed when education was highly valued by all stakeholders – government, parents and students. This finding is consistent with previous findings based on teachers (Kyriacou ,1989; Ng'Eno, 2007; Demirel et al, 2005 etc). The younger age group probably started work when the educational system was deteriorating and the stress was already part of the system. Also, they are younger and may be able to cope more with the stress they are exposed to than the older ones.

7. Conclusion

Burnout and stress reaction (as measured by MBI and PSC respectively) were correlated. The high prevalence on both burnout and stress level/ reaction is of great concern as this may subsequently lead to other psychological and physical problems as reported by Bailey (2006). Such complications include increased risk for cardiovascular diseases, developing myocardial infarction, ischemic heart disease, stroke and sudden cardiac death. Others include poor health behaviours, sleep disturbances, metabolic syndrome and increased concentrations of pro-inflammatory cytokines. A significant positive correlation was found between stress level/ reaction, emotional exhaustion, depersonalization and reduced personal accomplishment. Male and female participants also report significant differences in the scores of MBI with female participants manifesting higher levels in all the measures. The age group (55-68 years) reported highest manifestation of emotional exhaustion, depersonalization and reduced personal accomplishment.

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