

## Burnout Syndrome and Associated Substance use amongst Undergraduates of a Tertiary Institution in Northern Nigeria

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### ABSTRACT

Studies show that academic burnout among undergraduates is highly prevalent and is a major aspect of students' mental health. Studies have also shown high prevalence of substance abuse among undergraduates however, few studies have explored the relationship between burnout and substance use among undergraduate students. An analysis of this will give more insight into this relationship and possible clearer perspective on intervention measures. The study was carried out among 933 undergraduates of BUK in the faculty of Education, Law and Medicine, using a descriptive cross sectional design. Study instruments consisted of a socio-demographic questionnaire, Maslach Burnout Inventory-students' survey (MBI-SS), Cage Drugs Questionnaire. Results revealed a high prevalence of burnout: 16.4%, 24.7% and 20.8% for Emotional Exhaustion, Cynicism and reduced Academic Efficacy respectively. Medicine students had higher burnout for Emotional Exhaustion, though not statistically significant ( $p=0.521$ ). Education students had the highest burnout on the Cynicism subscale (35.6%), followed by Medicine (20.4%), ( $p<0.001$ ). On the Academic Efficacy Subscale students from Medicine reported the highest burnout (30.4%) and law being the least (5.1%),  $p<0.001$ . Burnout increased among non-drug users compared to drug users. Burnout is highly prevalent among undergraduates. Overall law students were the least burnout. Non-drug users had more burnout compared to drug users. The need for the establishment of School Mental Health Programs for early detection and management of burnout, drug use and maladaptive coping behaviours among undergraduates is emphasized and encouraged.

**Keywords:** Burnout, Drug use, Nigeria, Undergraduates.

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## INTRODUCTION

**B**urnout is considered as a three-dimensional syndrome as measured by the Maslach Burnout Inventory-Human Services Survey (MSS-HSS):<sup>1</sup> Emotional exhaustion (EE) described as intense fatigue, lack of force to face a working day and feelings of being demanded beyond one's emotional limits; Depersonalization (DE) (or Cynicism) defined as emotional avoidance and indifference towards work; and Reduced Personal Accomplishment (PA) (or professional efficacy) is expressed as lack of perspectives for the future, frustration and feelings of incompetence and failure. Common symptoms are sleep difficulty, apprehension, difficulty in concentration, changes in appetite, irritability and despondency.<sup>2</sup> Maslach and colleagues were among early researchers on burnout, and developed the popular Maslach Burnout Inventory (MBI);<sup>1-3</sup> despite its non-recognition in DSM 4/5 and ICD 10/11, studies on burnout has increased and extended to almost every job, and even to non-occupational samples e.g. students. Literature on these non-occupational sample is rather scanty perhaps due to the traditional bias that burnout is a work-place phenomenon. Suffice it to say that students engaged in structural, coercive and competitive activities (attending classes, completing assignments etc.) that are directed towards a specific goal (i.e. passing exams). Hence, burnout may also exist in students, where it manifests as feelings of exhaustion because of study demands, and having a cynically detached attitude towards one's studies.

Attempts have been made to differentiate stress and burnout considering the arduous academic activities students go through. Smith and colleagues<sup>4</sup> considered burnout to be the result of unrelenting stress. While stress usually involves too much pressures that demand too much of you physically and psychologically; burnout, on the other hand, is about not being enough. Being burnt-out means

feeling empty, devoid of motivation, and beyond caring. People experiencing burnout often don't see any hope of positive change in their circumstances. If excessive stress is like drowning in responsibilities, burnout is being all dried up. One other difference between stress and burnout is that while you're usually mindful of being under a lot of stress, you don't always notice burnout when it sets in.<sup>4</sup> Several studies have shown increasing prevalence of substance use among undergraduate students<sup>5</sup> however, studies that seek to explore the relationship between burnout and substance use is sparse. This is very important considering the negative influence of drugs on people's lives and as a public mental health problem amongst undergraduates, with studies from U.S., Europe and Africa including Nigeria to support this.<sup>5-7</sup> Burnout studies among undergraduate students in Nigeria are generally sparse.<sup>8</sup> Despite the availability of the document on school's mental health program, only a few institutions have been able to domesticate it, a reflection of the level of awareness, commitment and compliance of the governing bodies and government in general. The few burnout studies among undergraduates in Nigeria essentially looked at the rates of burnout and explored its nature and relationship with academics and work in general.<sup>2,5,6</sup> This study went further to explore the relationship between burnout and substance use among undergraduate students of Bayero University, Kano (BUK)

## MATERIALS AND METHODS

This study was conducted between June and August, 2012. This manuscript is part of a larger study on burnout syndrome and its relationship to psychological morbidity, quality of life, substance use etc. with details of its methodology elaborated in a previous document.<sup>8</sup>

### Study Design

This was a descriptive cross-sectional study

### Sampling Technique

The first step was selection of the three faculties (Education, Law, and Medicine) by three consecutive Simple Random Sampling without replacement from a pool of eight faculties in BUK this was followed by a Systematic Random Sampling in which the first middle and final year classes were selected.

### Study Location

BUK is a federal tertiary educational institution in Kano, Nigeria. It has two campuses, namely the Old Site in Gwale Local Government Area and the New Site located in Ungongo Local Government Area. The faculties of Medicine and Law are located in the old site while the faculty of Education is located in the new site.

### Study Population

Students of medicine, law and education who satisfied the inclusion criteria for the study participated in the study. Inclusion criteria: First year and final year students of Medicine, Law and Education; middle level students, i.e. 3<sup>rd</sup> and 4<sup>th</sup> year Medical students; 2<sup>nd</sup> and 3<sup>rd</sup> year Education students and 3<sup>rd</sup> year Law students. Exclusion criteria: Students outside Medicine, Law and Education; 2<sup>nd</sup> and 5<sup>th</sup> year medical students; 2<sup>nd</sup> and 4<sup>th</sup> year students of law; students who have a psychiatric illness and students who fail to give consent

### Sample Size Determination

This was based on the formula:  $N = z^2 P (1-P) \div d^2$ . Where N is the required sample size; Z was 1.96; P is known prevalence of burnout, 56% (0.56);<sup>9</sup> d is confidence interval set at 5% (0.05). Therefore,  $N = (1.96)^2 \times 0.56(1-0.56)/(0.05)^2 = 3.8416 \times 0.2464/0.0025 = 378$  (minimum sample size). In this study, it was multiplied by a factor of 2.47 to give a

total of 933 students. By increasing the sample size, attrition (10% of the minimum sample size, in this study 38 students) was automatically corrected for. This sample size of 933 was then divided proportionately among the three faculties as shown below

:

#### Medicine

Estimated population of medical students = 600; Total number of student in all 3 faculties = 1700. Therefore, proportion of medical students =  $600/1700 \times 933 = 329$ .

#### Education

Estimated population of education students = 600; Total number of students = 1700. Sample size =  $600/1700 \times 933 = 329$ .

#### Law

Estimated population of students of law = 500; hence  $1700. 500/1700 \times 933 = 275$

### Data Collection

Questionnaires were administered during lecture periods following due consultation and permission from the students' class representatives, lecturers, and corresponding heads of departments

### Instruments used during this study included

#### Socio-demographic questionnaire

This was designed to obtain information such as age, sex, marital status, ethnicity, living on campus, number of years spent in school, the current level and faculty, difficulty with lecturers, pressure of assignments etc.

#### Cage Drugs Questionnaire

This is a modified version of the original CAGE questionnaire for non-alcohol substance problems. It is a brief screening tool for other non-alcohol substance problems consisting of yes or no questions. Item are scored 0 (no) or 1 (yes). A total score of 2 or greater is considered clinically significant and will

require further investigation.<sup>10,11</sup> It takes less than 1 minute to complete and can be also be administered by a trained lay interviewer. Maslach Burnout Inventory-Student Survey (MBI-SS): This was modified from the Maslach Burnout Inventory-General Survey (MBI-GS) for use in student population by Schaufeli et al.<sup>12</sup> For instance, the item “I feel emotionally drained from my work” was rephrased: “I feel emotionally drained from my studies.” The instrument is a 15-item questionnaire consisting of 3 subscales: emotional exhaustion; cynicism; and academic efficacy; with each item on a 4-point scale as follows: “Almost never” (1), “Sometimes” (2), “Often” (3), “Almost always” (4). Higher levels of burnout are indexed by “often” and “Almost always”. All Academic Efficacy items (i.e. items 3, 6, 8, 9, 12 & 15) are reversed scored.<sup>12</sup> It takes about 10-15 minutes to self-administer. A validation study in a Nigerian population revealed: cronbach alpha=.86, split-half=.57 and odd-even=.92 with concurrent validity coefficients in the range of .01-.36.<sup>8</sup> The 16<sup>th</sup> edition of Statistical Package for Social Sciences (SPSS-17) was used to analyse data with statistical significance set at 0.05. Descriptive statistics were calculated for mean, and standard deviations as well as test of association using chi square test for categorical variables. ANOVA was used to compare means between the three faculties for quantitative variables. Ethical approval was obtained from the Ethics Committee of Aminu Kano Teaching Hospital (AKTH). Participants who declined participation on account of psychiatric illness were excluded from the study and referred to the psychiatric unit of AKTH for necessary assessment and treatment. Students' participation was entirely voluntary and confidential. Signed and informed consent was obtained thereafter.

## RESULTS

A total of 933 students participated in this study

comprising 275 (29.5%) Law students; 329 (35.5%) from Medicine and 329 (35.5%) from Faculty of Education. The socio-demographic characteristic of the participants is shown in Table 1. Females students were 295 (31.6%) with a male: female sex ratio of 1:3.17. There were more males in education 258(78.4%) than in medicine 218(66.3%) and law 162(58.9%) p-value <0.001. Medical students were the youngest with mean age of 23.29(±3.76) years and the difference was statistically significant (p<0.001). Education students had the oldest population. Two thirds of the respondents 623(66.8%) were of the Hausa ethnic group, followed by the Fulani's 167 (17.9%). The difference was not statistically significant (p-value 0.0892). Majority of the participants were single 781 (83.7%). Most participants from the medicine department were single 301(91.5%), the least being from education 244(74.2%) (p-value <0.001). Table 2 shows factors associated with burnout. Over half of the participants 512 (54.9%) described poor living conditions. Education students reported more poor living conditions 208(63.2%), while medical students reporting the least 142(43.2%), (p<0.001). Nearly two thirds 601 (64.4%) of the participants disliked weekend lectures while 332 (35.6%) had no problem with it. Medical students disliked weekend lectures the most 233(70.8%), (p<0.001). Most of the respondents 575 (61.6%) faced pressure from work and assignment overload as against 358 (38.4%) who do not. Medical students reported more academic overload 217(66.0%) with the least being education students 189(57.4%) p= 0.080. As many as 56.2% of students were combining their studies with jobs as against 409 (43.8%) who were not. About 157 (30.0%) of those who hold jobs reported that their jobs were putting a strain on their studies and was most reported by 95(39.6%) education students, (p< 0.001). Strained relationship was reported by 244(26.2%) students, with 115 (35.0%) being education students, and 63(19.1%) medical students

**Table 1: Socio demographic Variables of Respondents: Three Faculties Compared (N=933)**

	Education	Law	Medicine	Total N(%)	Test Stat	p-value
<b>Age</b>						
N	329	275	329	933		
SD	26.15	24.33	23.29		F=29.595	p<0.001**
	5.012	5.029	3.761			
<b>Sex</b>						
Male	258(78.4)	162(58.9)	218(66.3)	638(68.4)	F=27.429	p<0.001**
Female	71(21.6)	113(41.1)	111(33.7)	295(31.6)		
<b>M/Status</b>						
Single	244(74.4)	236(85.8)	301(91.5)	781(83.7)	F=38.410	p<0.001**
Married	81(24.6)	37(13.5)	28(8.5)	146(15.6)		
Others	4(1.2)	2(0.7)	0(0)	6(0.6)		
<b>Religion</b>						
Islam	315(95.4)	272(98.9)	311(94.5)	898(96.2)	F=8.317	p=0.016*
Christianity	14(4.3)	3(1.1)	18(5.5)	35(3.8)		

\*statistically significant at 0.05; \*\* statistically significant at 0.01 F=a nova; N= Number

**Table 2: Factors Associated with Burnout: Three Faculties Compared (N=933)**

Factors	Faculty			Test Statistic; df	p-value
	Education N(%)	Law N(%)	Medicine N(%)		
<b>Poor living conditions</b>					
Yes	208(63.2)	162(58.9)	142(43.2)	X <sup>2</sup> =29.295	df=2 p<0.001*
No	121(36.8)	113(41.1)	187(56.8)		
<b>No. of Years in School</b>					
1	120(36.5)	90(32.7)	108(32.3)		
2	49(14.9)	15(5.5)	1(0.3)		
3	81(24.6)	68(24.7)	42(12.8)	X <sup>2</sup> =4.004	df=10 p<0.001*
4	69(21.0)	4(1.5)	51(15.5)		
5	5(1.5)	86(31.3)	15(4.6)		
≥6	5(1.5)	12(4.4)	112(34.1)		
<b>Problem with weekend lectures</b>					
Yes	179(54.4)	189(68.7)	233(70.8)	X <sup>2</sup> =22.496	df=2 p<0.001*
No	150(45.6)	86(31.3)	96(29.2)		
<b>Difficult with Lecturers</b>					
Yes	115(35.0)	83(30.2)	88(26.7)	X <sup>2</sup> =5.253; df=	df=2 p=0.072
No	214(65.0)	192(69.8)	241(73.3)		
<b>Pressure with assignment</b>					
Yes	189(57.4)	169(61.5)	217(66.0)	X <sup>2</sup> =5.044; df=	df=2 p=0.080
No	140(42.6)	106(38.5)	112(34.0)		
<b>Work strain on studies (employed)</b>					
Yes	95(39.6)	38(25.2)	24(18.0)	X <sup>2</sup> =21.243	df=2 p<0.001*
No	145(60.4)	113(74.8)	109(82.0)		
<b>Pressure from home</b>					
Yes	115(35.0)	77(28.0)	72(21.9)	X <sup>2</sup> =13.867	df=2 p<0.001*
No	214(65.0)	198(72.0)	257(78.1)		
<b>Marital strain on study</b>					
Yes	115(35.0)	66(24.0)	63(19.1)	X <sup>2</sup> =22.213	df=2 p<0.001*
No	214(65.0)	209(76.0)	266(80.9)		

df: Degree of freedom; \* Significant level 0.05; X<sup>2</sup> = chi square

(p<0.001). Table 3 compared the mean burnout scores of participants for the three faculties. The total mean score for cynicism was 7.01(±2.83) with education students exhibiting the highest score 7.76(±3.0). Medical students had the least score 6.57(±2.68), (p<0.001). The total mean score for AE

was 13.65(±5.37) with law students exhibiting the highest score 17.70(±4.70) and medical students again had the least score 11.00(±4.01), (p<0.001). The total mean score for EE was 10.7 (±3.07) with medical students having the highest burnout 10.8 (±3.17) while law students had the least burnout score 10.53 (±2.96). The differences were not statistically significant, p=0.546. Table 4 shows drug use of participants. More than half of participants 553(59.3%) did not use any substance of abuse, while 380(40.7%) used one or more drugs. Medical students used drugs the least (14.6%) followed by law students (22.2%), (p<0.001). Table 5 shows the relationship between burnout and drug use of participants. The mean score for the AE component of burnout was 16.06(±5.30) among drug users compared to 11.99(±4.77) among non-users.

**Table 3: Mean Burnout Scores of Participants: Three Faculties Compared (N=933)**

Burnout Variable	Faculty	N	Mean Burnout	Statistics	
				±SD	F p-value
Emotional Exhaustion	Education	329	10.75	3.07	0.605 0.546
	Law	275	10.53	2.96	
	Medicine	329	10.80	3.17	
Cynicism	Total	933	10.70	3.07	18.88 <0.001*
	Education	329	7.76	3.00	
	Law	275	6.62	2.62	
Academic Efficacy	Medicine	329	6.57	2.68	163.65 <0.001*
	Total	933	7.01	2.83	
	Education	329	12.91	5.10	
	Law	275	17.70	4.70	
	Medicine	329	11.00	4.01	
	Total	933	13.65	5.37	

\*statistically significant at 0.01; SD = standard deviation; N =Number; F = Anova

**Table 4: Drug Uses of Participants on Cage Drugs Questionnaire: Three Faculties Compared (N=933)**

Drug Use	Faculties N (%)				Statistics		
	Education	Law	Medicine	Total	X <sup>2</sup>	df	p-value
Non-Users	211(64.1)	214(77.8)	281(85.4)	706(75.7)	2.530	2	<0.001*
Users	118(35.9)	61(22.2)	48(14.6)	227(24.3)			

\*Statistically significant at 0.01

**Table 5: Relationship between Burnout and Drug Use of Participants (N=933)**

Burnout Component	Drug Use	N(%)	Mean	SD	t-test	p-value
EE	Users	380(40.7)	10.80	3.03	-0.820	0.412
	Non-users	553(59.3)	10.63	3.10		
Cynicism	Users	380(40.7)	7.01	2.85	-0.013	0.990
	Non-users	553(59.3)	7.01	2.82		
AE	Users	380(40.7)	16.06	5.30	-12.22	<0.001*
	Non-users	553(59.3)	11.99	4.77		

\*Statistically significant at 0.01; SD = Standard Deviation

EE = Emotional Exhaustion; AE = Academic Efficacy

The difference was statistically significant ( $p < 0.001$ ). Drug users had more burnout on AE than non-users.

## DISCUSSION

The prevalence of burnout in this study was: 16.4% for Emotional Exhaustion (EE); 24.7% for Cynicism; and 20.8% for Academic Efficacy (AE) which indicates high EE, high cynicism and reduced AE respectively. To be burnout means to have high EE, high cynicism and a reduced AE. These findings are similar to those from other burnout studies among undergraduates<sup>2,13,14</sup> which implies that burnout is a frequent occurrence among undergraduates. When burnout rates were compared between the different faculties, Education students showed more cynicism towards their studies, while law students were the least cynical. High Cynicism means to become detached and unconcerned about one's work. Plausible reasons for these differences in burnout may be due to poor living conditions, combining jobs with education, pressure from home, and relationship difficulties. It is also known that educational courses are not usually first line choices for many undergraduates. Such students are generally not likely to show much interest in their studies and as a result become more cynical about their studies and academic activities. In a similar vein, there seem to be a low premium placed on the teaching profession and education related courses in Nigeria. Thus, these students are sometimes viewed even by their colleagues in the university as dull, unintelligent, and unserious and many other ill-conceived perceptions. This leaves many of these students with low self-esteem and double mindedness towards their studies with its attendant consequences on academic performance. The data above showed that as length of academic activity increased, burnout also increased. This is similar to findings in other studies on burnout involving medical students.<sup>9,13-15</sup> The rate

of drug use in this study was as high as 40.7%. Findings from studies in Nigeria among undergraduates have ranged from as low as 24.5% to as high as 84.5%.<sup>5,16-18</sup> This study revealed a less likelihood for burnout among those using drugs. This is in contrast with findings in some studies which found a positive correlation between drug use and burnout among undergraduates.<sup>19</sup> Possible explanation for our finding here could be that: students engage in use of commonly available drugs like alcohol, nicotine and cannabis at leisure and not severe enough (dependent) to affect their academics; students may use drugs to medicate their burnout symptoms and therefore feel less burnout in the short term; response bias can also not be completely ruled out considering the sensitive nature of the subject of drugs making some students to hold back information. It has been suggested that quite a number of students are medicating their distressing symptoms of social phobia, depression, anxiety and low self-esteem with psychoactive substances. A number of studies have identified the use of alcohol and other substances as maladaptive coping strategies against stress and burnout among undergraduates<sup>5,14,15,20</sup> in addition to use of Psychoactive substance use to stay awake and study. There are generally more studies detailing this complex inter-relationship among medical students compared to their peers in other disciplines. Medical students appear to be more vulnerable to this complex interplay of burnout than their peers in other disciplines given their unique academic demands, exposure to patient care, diseases and deaths in the course of their training. Another reason for the excess of research findings among medical students in this important area could be that majority of the researchers are primarily from the medical and allied profession making research within their own environment more convenient rather than having to study university students from other disciplines.

## CONCLUSION:

Burnout is highly prevalent among undergraduates of Bayero University Kano, with education students having more Cynicism and medical students having less Academic Efficacy. The study also found out that burnout increases significantly with increasing length of academic activity. Drug users were less likely to be burnout than non-drug users. The detection of burnout among undergraduates has implication for the establishment of mental health clinics in academic institutions hence the need for families and university authorities to put in place strategic and effective programmes to improve students' mental health and adjustment in later life.

## Recommendation

There is need for more studies on burnout among undergraduate populations in Nigeria especially among non-medical students. There is need for studies that seeks to explore the relationship between burnout and academic performance, type and severity of drug use and quality of life. There is also need for studies that will seek to establish the relationship between school mental health programs and the rate of occurrence and severity of burnout.

## Limitations of the Study

:This study is not without limitations: This research is a onetime cross sectional study with no follow-ups and hence cannot proffer aetiological factors for burnout; the instrument used for eliciting drug use does not indicate the type and extent of drug use, hence correlations of burnout with extent of drug use or its effects cannot be inferred; most of the participant failed to record their Cumulative Grade Point Average (CGPA), it would be gratifying to evaluate the relationship between burnout, drug use and CGPA.

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## Conflicts of Interest

None declared.

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