Original Article

Substance Abuse, Self-Esteem and Self-Rated Academic Performance among Undergraduates in a Nigerian Private and Public University: A Comparative Study

Olaoye OA[1], Onabanjo TA[2], Jejelaye AO[3], Adejumobi AS[1], Olagunju KF[4]

[1]Department of Medical Rehabilitation, College of Health Sciences, Obafemi Awolowo University, [2]Department of Medical Rehabilitation, Obafemi Awolowo University Teaching Hospitals Complex, Ile Ife, Osun State, [3]Department of Occupational Therapy, Faculty of Medical Rehabilitation, University of Medical Sciences, Ondo State, [4]Physical Rehabilitation Unit, 44, Nigeria Army Reference Hospital, Kaduna, Nigeria

ABSTRACT

Background: This study compared the relationship between substance use, self-esteem, and academic performance among undergraduates in private- and public-owned universities.
Methods: Using a stratified random sampling technique, undergraduates from Oduduwa University, Ipetumodu; a private university (PrU) and Obafemi Awolowo University (OAU), Ile-Ife; a public university (PuU) responded to a structured, self-administered questionnaire in this cross-sectional survey. The procedure was explained to respondents and data were subsequently obtained. Data were analysed using descriptive and inferential statistics.
Results: An 81.9% response rate from 400 undergraduates with an overall mean age of 20.7 ± 2.14 years was recorded in this study. Over 20% of the respondents were observed to have either substantially or severely abused drugs with higher rates occurring among undergraduates in the PrU (14.2%) compared with PuU (6.5%). Overall mean drug abuse score was 5.95 ± 5.78 with a higher score occurring among undergraduates in PrU ($t = -4.37$; $P = 0.001$). More than half of the respondents indicated that drug use negatively affected their self-rated academic performance after its use. Respondents' self-rated academic performance after drug use (SAPAD) was weakly and moderately correlated with self-esteem (PrU: $\rho = 0.15$, $P = 0.003$; PuU: $\rho = 0.20$, $P = 0.004$) and drug use (PrU: $\rho = -0.61$, $P = 0.000$; PuU: $\rho = -0.52$, $P = 0.000$), respectively. A negative weak correlation existed between respondents' self-esteem and drug use (PrU: $R = -0.18$, $P = 0.009$; PuU: $R = -0.27$, $P = 0.000$) across the universities.
Conclusion: Undergraduates in the selected Nigerian universities have a low level of substance abuse with high self-esteem. Substance abuse among students attending PrU is higher compared to PuU. In addition, the self-esteem of undergraduates as an independent correlate of self-rated academic performance can be used to check substance abuse among university students.

Keywords: Nigeria, self-esteem, self-rated academic performance, substance abuse, undergraduates

INTRODUCTION

Substance abuse among undergraduates is prevalent and a potentially harmful activity that has become a source of concern for stakeholders globally.[1] Substance use refers to the non-medical self-administration of a substance despite its potential consequences in order to elicit mood-changing effects and intoxication.[2] These substances include stimulants, depressants, hallucinogens, cannabis and other sedatives. The increasing risks for dependence and abuse and other adverse physical and psychosocial outcomes that is associated with psychoactive substance abuse have over the years led to the enactment of local and international legislations to control the circulation and use of these substances. In Nigeria, substance abuse is becoming a major health risk behaviour among adolescents and youths.[3] A number of recent studies suggest that most Nigerian youths experiment with substances at some

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point, particularly alcohol, nicotine, codeine and tramadol.[4-6] Among this population who are university students, it has been established that not all substance users progress to problematic levels. However, it has been established that a substantial proportion of the students who experiment with one form of substance or another progress to problematic use of such substances.[7] Similarly, substance use may also increase the risks for the abuse of other substances. With substance abuse, there is a maladaptive pattern associated with the substance use which manifest in recurrent and significant adverse consequences related to its repeated use.[8] Individuals who abuse substances may experience harmful consequences of its use in the form of repeated failure to fulfil roles for which they are responsible, legal difficulties or social and interpersonal problems.

For undergraduates whose pre-dominant area of occupation is education, they may experience difficulty in fulfilling their societal roles and expectations as university students and as members of the university community. As a result of the detrimental consequence of substance dependence and abuse, such student's participation in academic, non-academic, extra-curricular, and vocational educational activities might be limited. The problem associated with substance abuse among undergraduates in Nigerian universities is a recognised phenomenon. These have been reported to include declining academic performance, increased prevalence of depression, fluctuating self-concept, economic loss and drainage. The other reported problems include increased suicidal rates, school drop-out rate, cultism in schools and increased delinquent and criminal behaviours (such as rape, vandalism and robbery among students).[9-11] University students largely experience independence and freedom from adult and parental supervision. As a result, they tend to be exposed to new values that may conflict with previously shared values which could motivate them into substance use.[12,13] Other reasons that have been adduced to substance abuse among Nigerian undergraduates even with an established high level of awareness and knowledge of its consequences include sheer curiosity, increased pocket money, academic stress and anxiety, loneliness and homesickness as well as parental substance use.[14]

In addition, how an individual perceives one's self-worth otherwise known as self-esteem could result in substance abuse.[15] Self-esteem has long been believed to play a very imperative role in the use of alcohol and other psychoactive substances among university students.[16] Self-esteem can be conceptualised as the extent to which one's self-evaluations are favourable or unfavourable. It refers to the ability to realistically acknowledge one's strengths and limitations and at the same time, accept oneself as worthy and worthwhile without conditions or reservations.[17] Conflicting reports exist in the literature regarding the association between self-esteem and substance use. For instance, Corbin *et al.*[18] indicated that alcoholics exhibited relatively high self-esteem, compared with non-alcoholics. Similarly, another study by Akhter[16]

found that cocaine users exhibit unusually high levels of self-esteem before an onset of substance abuse. Conversely, it has also been reported that depressive feelings, feeling of rejection and unworthiness as well as feeling hated make student to turn to substances.[19] Students are affected more by these emotions and their inability to cope given their adolescent stage of development can lead to addictive behaviour later in life. During this stage, identity formation is important and self-concept plays a major role. Low self-esteem can lead to a detrimental redefinition of self-concept and this, in turn, can lead the student to indulge in escapist behaviour such as drug and substance abuse. In alleviating the influence of addictive behaviour such as substance abuse, the enhancement of self-esteem has been posited as a vital component as it encompasses beliefs about oneself as well as the emotional responses to those beliefs.[20]

Even though psychoactive substance abuse and self-esteem have been the focus of previous research on academic performance among Nigerian undergraduates, the influence of the school type on the relationship among the aforementioned constructs is unexplored. Nigeria has experienced in recent years an increasing demand for tertiary education which has led to the establishment of new universities. Studies have, however, shown that there are marked differences in the characteristics of private- and public-funded universities and their students.[21,22] Therefore, it was necessary to explore and compare the relationship that exist among the three constructs (substance abuse, self-esteem and academic performance) between undergraduates in public-owned universities and those in private-owned universities.

METHODS

Study setting, study population and sampling

The population for this study consisted of undergraduates that were selected through stratified random sampling from a private (PrU) and public university (PuU) in Ile-Ife, Osun State. Oral history accounts recognised the study setting, Ile-Ife and environs, as the cradle of the Yorubas and the 'source of civilisation.'[23] Osun State is located in southwest Nigeria, which is the geo-political zone with the highest level of urbanisation, industrialisation and education in Nigeria's diverse geo-political setting. Furthermore, the state is documented as having a life-time high prevalence of substance use.[24] Using a prevalence of 27.5% based on a previous Nigerian study of psychoactive substance abuse among undergraduate,[14] and based on sample size formula for comparison of two independent proportions, we calculated a minimum sample of 214 per group with the use of Programme for Epidemiologist.[25] Adjusting for possible non-response, we arrived at a sample size of 244 per group. The undergraduates were recruited from the faculties of Sciences and Social Sciences of the Oduduwa University, Ipetumodu (OUI) and Obafemi Awolowo University, Ile-Ife (OAU). The OUI and OAU are one of the foremost private and public universities, respectively, in Southwest,

Nigeria. Distance learning students were excluded from participating in this study.

Instrument

A three-sectioned self-administered questionnaire on substance abuse, self-esteem and self-rated academic performance was used as the survey instrument for this study. The questionnaire comprised open- and close-ended questions. The first section sought information on sociodemographic characteristics of the participants (such as age, gender, level of study and course of study) and their self-rated academic performance. Respondents indicated whether their academic performance had declined or improved after illicit drug use. The second section assessed substance use and abuse using the Drug Abuse Screening Test (DAST),[26] while the third section utilised the Rosenberg Self-Esteem Scale (RSES) to assess the self-esteem of participants.[27]

Drug Abuse Screening Test-20

The DAST is a 20-item self-report instrument that assesses problematic substance use among adolescents and adults on a dichotomous scale (No/Yes) with a total score ranging from 0 to 20. Affirmative responses to each of the items on the DAST-20 are valued as one point with the exception of items 4 and 5 whose positive responses are scored as 0. A cut-off score of 6 is generally used to indicate substance abuse or dependence problem. The higher the score obtained, the higher the level of substance abuse with cumulative drug abuse score categorised as low (1–5), intermediate (6–10), substantial (11–15) and severe (16–20). The psychometric properties of the DAST-20 have been extensively discussed by Yudko *et al*.[28] The scale is documented to be internally consistent with Cronbach's alpha coefficient ranging from 0.74 to 0.92 and reliable with test/retest reliability scores ranging from 0.71 to 0.78.[29]

Rosenberg Self-Esteem Scale (RSES)

The Rosenberg Self-Esteem Scale (RSES) is a 10-item self-report instrument that evaluates the global self-esteem of an individual. The RSES explores the positive and negative feelings of self-worth and self-acceptance of the individual through a 4-point Likert measure (1 = strongly disagree, 2 = disagree, 3 = agree and 4 = strongly agree) with a total score ranging from 10 to 40. A higher score on the RSES indicates a higher level of self-esteem. The scale has been extensively used in several studies[30-33] and its validity and reliability comprehensively reported to be acceptable.[27,33-36] The RSES had been validated and reported to be valid and reliable in the Nigerian adult population.[33,37]

Procedure

The Health Research and Ethics Committee of the Institute of Public Health, Obafemi Awolowo University, Ile-Ife, Nigeria, as well as the administrative heads of the departments where respondents were recruited gave approval for this study. The purpose of the study was explained verbally and in writing with a subject information sheet to eligible volunteers. This was done in their respective lecture rooms. Subsequently,

eligible volunteers provided both verbal and signed consents to participate in the study. Using a stratified random sampling, 488 undergraduates were enrolled in this study from the Departments of Biochemistry, Microbiology, Chemistry, Public Administration, International Relations and Political Science of OUI, Ipetumodu, a private university (PrU) and OAU, Ile-Ife, a PuU. The questionnaires were administered by hand to the undergraduates over a course of a 12-week recruitment period. A total of 400 eligible volunteers comprising 200 OUI undergraduates and 200 OAU undergraduates that were equally sampled from the faculties of Sciences ($n = 100$) and Social Sciences ($n = 100$) responded to this study, yielding a response rate of 81.9%. On completion, most of the questionnaires were collected on site, while those not collected on site were returned through the respondents' class representatives. Seventy-nine copies of the questionnaires were not returned, while nine copies were void because a significant part of the questionnaire was omitted or wrongly filled.

Data analysis

Descriptive statistics of mean, standard deviation, frequency and percentages were used to summarise data. A preliminary inferential statistic of Mann–Whitney U was used to ascertain if differences exist in the sociodemographic variables between OUI and OAU respondents. Subsequently, Pearson Chi-square test was used to determine the association between respondents' sociodemographic characteristics and each of academic performance, substance abuse and self-esteem across the two groups, while independent *t*-test was conducted to explore the difference in substance abuse and self-esteem between the two groups. Furthermore, the relationship among self-rated academic performance, substance abuse and self-esteem was determine using Pearson moment and Spearman correlation analysis. Data were analysed using SPSS version 22.0 (SPSS Inc., Chicago, IL, USA).

RESULTS

The overall mean age of the respondents was 20.7 ± 2.14 with a range of 16–29 years. The respondents comprised 222 males (55.5%) and 178 females (44.5%). The majority of the respondents were between the age range of 19 and 21 years (53.0%), single (99.3%) and Christians (68%). Over 50% of the respondents indicated that substance negatively affected their self-rated academic performance after its use. The sociodemographic characteristics as well as SAPAD are presented in Table I. More than 20% of the respondents were observed to have either substantially or severely abused substance with higher rates occurring among the undergraduates in PrU (14.2%) when compared with PuU (6.5%). The findings further showed the mean substance abuse score to be 5.95 ± 5.78 with a higher score occurring among undergraduates in PrU (PrU = 7.19 ± 6.00, PuU = 4.71 ± 5.29; t = -4.37, $P = 0.001$). Most of the respondents were observed to have a self-esteem level ranging from moderate to high (98.3%). The frequency distribution of respondents' level of substance abuse as well as the level of

Table I: Sociodemographic characteristics and frequency distribution of respondents' self-rated academic performance

Variables	Mean or *n* (%)			t/χ^2	*P*
	Overall	PuU (OAU)	PrU (OUI)		
Age (years)*	20.7±2.14	20.8±2.03	20.6±2.22		
≤18	60 (15.0)	22 (5.5)	38 (9.5)	−1.22	0.207
19–21	212 (53.0)	113 (28.2)	99 (24.8)		
22–24	111 (27.8)	56 (14.0)	55 (13.8)		
≥25	17 (4.3)	9 (2.2)	8 (2.0)		
Gender					
Male	222 (55.5)	109 (27.2)	113 (28.2)	0.16	0.381
Female	178 (44.5)	91 (22.8)	87 (21.8)		
Marital status					
Single	397 (99.3)	197 (49.32)	200 (50.0)	3.02	0.124
Married	3 (0.8)	3 (0.8)	0		
Religion					
Christianity	272 (68.0)	143 (35.8)	129 (32.2)	2.25	0.082
Islam	128 (32.0)	57 (14.2)	71 (17.8)		
Faculty of study					
Sciences	199 (49.8)	100925.0)	100 (25.0)	0.01	0.920
Social sciences	201 (50.3)	99 (24.80)	101 (25.2)		
Course of study					
Biochemistry	67 (16.8)	33 (8.2)	34 (8.5)	0.06	0.930
Microbiology	66 (16.5)	33 (8.2)	33 (8.2)		
Chemistry	65 (16.30)	33 (8.2)	32 (8.0)		
Public administration	66 (16.5)	33 (8.2)	33 (8.2)		
International relations	71 (17.8)	35 (8.8)	36 (9.0)		
Political science	65 (16.3)	33 (8.2)	32 (8.0)		
Level of study†					
100 level	103 (25.8)	53 (13.2)	50 (12.5)	−0.36	0.721
200 level	96 (24.0)	47 (11.8)	49 (12.3)		
300 level	99 (24.8)	51 (12.8)	48 (12.0)		
400 level	102 (25.5)	49 (12.2)	53 (13.2)		
SAPAD					
Declined (yes)	216 (54.0)	98 (24.5)	118 (29.5)	4.85	0.235
Improved (no)	74 (18.5)	38 (9.5)	36 (9.0)		
Not applicable	110 (27.5)	64 (16.0)	46 (11.5)		

χ^2: Pearson Chi-square value, *P* value significant at *P*<0.05. *Independent sample *t*-test was used, †Mann-Whitney U-test was used. SAPAD: Self-rated academic performance after drug use, PuU: Public University, PrU: Private University, OAU: Obafemi Awolowo University, OUI: Oduduwa University, Ipetumodu

self-esteem is summarised in Table II. Respondents' SAPAD was found to be associated with gender across the two university sites (PrU: χ^2 = 16.34, *P* = 0.000; PuU: χ^2 = 11.71, *P* = 0.001). The risk of a decline in SAPAD among females was approximately two times (PrU: odds ratio [OR] 1.99, confidence interval [CI] 0.86–4.60; PuU: OR 1.67, CI 0.65–3.17) that of their male counterparts. In the same vein, level of substance abuse had a significant association with respondents' gender (PrU: χ^2 = 35.78, *P* = 0.000; PuU: χ^2 = 31.80, *P* = 0.000) across the two universities with an OR for substance abuse, approximately three times more for male respondents compared to female respondents (PrU: OR 3.05, CI 1.71–5.46; PuU: OR 2.94, CI 1.51–5.71). Among respondents that were <19 years of age, the OR for substance abuse was approximately three and two times that of respondents within 19–21 years of age in PrU and PuU, respectively (PrU: OR 2.64, CI 1.16–6.00;

PuU: OR 2.23, CI 0.63–8.30). It was also about six times and four times that of respondents within the 22–24 years of age in PrU and PuU, respectively (PrU: OR 6.26, CI 2.49–15.72; PuU: OR 4.10, CI 1.08–15.50). Furthermore, the level of self-esteem of respondents had significant association with each of their faculty (PrU: χ^2 = 30.09, *P* = 0.004; PuU: χ^2 = 24.09, *P* = 0.014) and course of study (PrU: χ^2 = 145.86, *P* = 0.000; PuU: χ^2 = 138.03, *P* = 0.003) [Table III]. The results of the Chi-square test of association between respondents' sociodemographic characteristics and each of SAPAD, level of substance abuse and self-esteem are summarised in Table III. Respondent's SAPAD was positively correlated with self-esteem (PrU: ρ = 0.15, *P* = 0.003; PuU: ρ = 0.20, *P* = 0.004) and negatively correlated with substance use (PrU ρ = −0.61, *P* = 0.000; PuU: ρ = −0.52, *P* = 0.000). Furthermore, negative correlation was found to exist between respondents'

Table II: Frequency distribution of respondents' level of drug abuse and self-esteem

Variables	PuU (OAU)			PrU (OUI)			t
	Mean±SD or *n* (%)	Minimum	Maximum	Mean±SD or *n* (%)	Minimum	Maximum	
Level of drug abuse	4.71±5.29	0.0	20.0	7.19±6.00	0.0	20.0	−4.37*
None	42 (10.5)			30 (7.5)			
Low	100 (25.0)			68 (17.0)			
Intermediate	32 (8.0)			44 (11.0)			
Substantial	10 (2.5)			29 (7.2)			
Severe	16 (4.0)			29 (7.2)			
Level of self-esteem	29.07±4.93	13.0	40.0	28.68±4.92	18.0	40.0	−0.79
Low	4 (1.0)			3 (0.8)			
Moderate	133 (33.2)			148 (37.0)			
High	63 (15.8)			49 (12.2)			

t: Independent sample *t*-test value, *P value significant at $P<0.05$. SD: Standard deviation, PuU: Public University, PrU: Private University, OAU: Obafemi Awolowo University, OUI: Oduduwa University, Ipetumodu

Table III: Chi-square test of association between respondents' sociodemographic characteristics and each of their self-rated academic performance, drug abuse and self-esteem

Variables	PuU (OAU)						PrU (OUI)					
	Academic performance		Drug abuse		Self-esteem		Academic performance		Drug abuse		Self-esteem	
	χ^2	P	χ^2	P	χ^2	P	χ^2	P	χ^2	P	χ^2	P
Age range	25.29	0.703	66.50	0.007*	53.60	0.629	4.744	0.096	106.29	0.000*	65.35	0.293
Gender	11.71	0.001*	31.80	0.000*	31.17	0.204	16.34	0.000*	35.78	0.000*	21.85	0.803
Marital status	2.97	0.614	8.718	0.730	14.36	0.463	-	-	-	-	-	-
Religion	2.03	0.229	34.34	0.212	19.45	0.074	0.36	0.572	20.87	0.263	12.66	0.913
Faculty	4.69	0.108	25.39	0.386	24.09	0.014*	0.80	0.383	22.23	0.569	30.09	0.004*
Course of study	29.92	0.056	115.70	0.545	138.03	0.003*	13.52	0.605	140.46	0.558	145.86	0.000*
Level of study	8.84	0.756	80.81	0.151	100.66	0.361	4.19	0.682	53.79	0.005	53.94	0.336

χ^2: Pearson Chi-square value, *P value significant at $P<0.05$. PuU: Public University, PrU: Private University, OAU: Obafemi Awolowo University, OUI: Oduduwa University, Ipetumodu

Table IV: Relationships among self-rated academic performance after drug use, drug abuse and self-esteem

Variables	PuU (OAU)			PrU (OUI)		
	SAPAD (ρ)	Drug abuse (r)	Self-esteem (r)	SAPAD (ρ)	Drug abuse (r)	Self-esteem (r)
SAPAD	1	-	-	1	-	-
Drug abuse	−0.52**	1	-	−0.61**	1	-
Self-esteem	0.20**	−0.27**	1	0.15**	−0.18**	1

Variables	DAST-20 total score			
	SAPAD (P)	Self-esteem (P)	SAPAD (P)	Self-esteem (P)
Age	0.982	0.782	0.883	0.130
Gender	0.285	0.928	0.165	0.710
Course of study	0.690	0.119	0.255	0.001*
Level of study	0.023*	0.006*	0.001*	0.044*

*P value significant at $P<0.05$, **P value significant at $P<0.01$. ρ: Spearman correlation coefficient, r: Pearson moment correlation coefficient. SAPAD: Self-rated academic performance after drug use, PuU: Public University, PrU: Private University, OAU: Obafemi Awolowo University, OUI: Oduduwa University, Ipetumodu

self-esteem and substance use (PrU: R = −0.18, P = 0.009; PuU: R = −0.27, P = 0.000) across the two university sites [Table IV]. The course of study (P = 0.001) as a contextual factor was a significant mediator in the correlation between drug abuse score and self-esteem among respondents in PrU, while respondents' level of study significantly influenced the relationship between drug abuse and each of SAPAD (PrU: P = 0.023; PuU: P = 0.006) and self-esteem (PrU: P = 0.001; PuU: P = 0.044) in the two university sites [Table IV].

DISCUSSION

Substance abuse among students in tertiary institutions of learning is a foremost challenge that has elicited concern for

stakeholders worldwide and Nigeria in particular.[1] This study compared substance abuse, self-esteem and self-rated academic performance between undergraduates in a Nigerian public and PrU. The demographic profiles of the undergraduates were found to be comparable with the demographics profile reported in similar studies conducted among tertiary students within Nigeria.[14,38,39] Although a higher proportion of the undergraduates in this study were male when compared to the studies by Johnson *et al.*[14] and Imaledo *et al.*,[39] this may be attributed to societal culture over the decades which favors male attendance in institutions of learning. Nevertheless, concerted effort by all the levels of government is now bridging the preponderance for male child education in Nigeria.

From this study, no difference exists in self-reported academic performance after substance abuse between the two undergraduate groups. The findings further showed that the undergraduates across the two universities were low substance users, however significantly higher rates of substance abuse were found among undergraduates in PrU as compared with their counterparts in PuU. Low substance abuse rates among undergraduates are mostly related to the legal prohibition of illicit substances, cultural values against substance abuse, especially among young adults. To affirm the findings of this study, Zamboanga *et al.*[40] reported that adolescents with high self-esteem are less likely to have abused substances. Among undergraduates who have used substances, having a high self-esteem could have enabled them to limit the extent of usage. Due to higher cost of accessing tertiary education in private universities as compared to public universities globally and in Nigeria, it could be assumed that PrU students have a higher socioeconomic status compared to their counterparts in public universities. Better socioeconomic status may provide financial access to illegal/illicit substance which on the other hand might be difficult to procure by students from the lower socioeconomic background.[41,42] On the other hand, institution's characteristics such as school size and location as well as recreational facilities which often times are well designed and established in public universities could have influenced students' social networks, which may, in turn, limit opportunity for illegal substance use. A general decline in self-rated academic performance was reported in more than half of the undergraduates after engaging in substances. This is in consonance with the findings of Adekeye *et al.*,[43] Peltzer and Pengpid,[44] Bradley and Greene[45] as well as Fatoye.[42] Compelling literature evidence has over the years had linked lower academic performance to illicit substance use among university students. Substance abuse by the undergraduates might have elicited psychological disturbances which could have subsequently led to poor academic performance.

The self-esteem of the undergraduates in both private and public universities was found to be similar with majority of the undergraduate having moderate to high self-esteem. This finding is comparable with previous reports of Egwurugwu *et al.*[46] and Okwaraji *et al.*[47] The nature of the Nigerian university curriculum that mandates entrepreneurship training

for undergraduates irrespective of program of study might have influenced the students' self-esteem. Entrepreneurial education and skills training have been avowed to provide more creative freedom, higher self-esteem and an overall greater sense of control over one's life.[48-50] Similarly, it could be argued that the foundation of the education received by the undergraduates in Nigerian tertiary institutions that is based on the principle of valuing people and themselves, having autonomy and assertion in the interpersonal relationship have positive effect on the students' self-esteem.

The age and gender of the undergraduates in both groups were significantly associated with substance abuse. Substantial literature evidence supports this finding with age being attributed as a strong predictor of substance abuse among undergraduates.[14,43,51] As most of the undergraduates in this study are adolescents and young adults, they could be assumed to be in the process of development and change. The young adult age population have been found to experiment with newly developed aspect of their physical and emotional selves pre-disposes them to substance use and addiction.[52] Across gender, male students have been indicated to be more prone to substance use than female students.[53,54] Furthermore, the use of psychoactive substances is asserted to be more tolerable for young adults that are male in most Nigerian cultures.[55] Love-Quick,[56] on the other hand, published a contrary report that found no association between substance use and gender among American college students.

In examining the association between self-esteem of the undergraduates and their sociodemographic characteristics in both groups, the program of study as well as the faculty to which the undergraduates belong was associated with self-esteem. In literature, contradictory results have been reported in many studies regarding the relationship between university students' sociodemographic characteristics and their self-esteem. For instance, in the studies by Egwurugwu *et al.*[46] and Okwaraji *et al.*,[47] similar findings with this study were reported with Nigerian undergraduate gender having no association with their self-esteem while Naderi *et al.*,[57] on the contrary reported an association between gender and self-esteem of undergraduates in Iran. The association between the self-esteem of the undergraduates and each of their faculty and course of the study suggests that undergraduates in the faculty of science and those in the departments of biochemistry and microbiology have a higher self-esteem compared with their counterparts.

Across the two universities, the academic performance of the students was observed to increase as their self-esteem improves while an increase in the level of substance abuse reduces the academic performance and self-esteem of the undergraduates. These findings are in consonance with previous literature.[14,42,44,58-60] For instance, the study by Johnson *et al.*[14] and Jagnany *et al.*[60] reported a decline in self-rated academic performance of undergraduates who used psychoactive substance while the study conducted by Jirdehi *et al.*[58] and

Saadat *et al.*[59] revealed a positive relationship between academic performance and self-esteem. As substance abuse is a maladaptive coping mechanism by the undergraduates who are vulnerable, it is not surprising that its resultant effect would negatively affect the academic performance and self-esteem of users. Similarly, how the undergraduates perceived their self-worth will, in turn, affect their confidence and performance in their study. Undergraduates with high self-esteem are less likely to have abused substances and those who have used substances with high self-esteem are more likely to have limited their extent of usage.

CONCLUSION

Undergraduates in the selected Nigerian universities have a low level of substance abuse with high self-esteem. Substance abuse among students attending PrU is higher compared to PuU. In addition, the self-esteem of undergraduates as an independent correlate of self-rated academic performance can be used to check substance abuse among university students.

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There are no conflicts of interest.

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