

Full Length Research Paper

The prevalence, knowledge of health effect and attitude towards smoking among undergraduates in a Nigerian University

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Smoking prevalence has been on the rise among university students in Nigeria despite the high awareness of harmful effects of smoking on health irrespective of the substance smoked, leading to death of millions annually. The aim of this study is to determine the prevalence, knowledge of health effect and attitude towards smoking among students of Alex Ekwueme Federal University Ndufu Alike, Ebonyi State. This was a cross-sectional descriptive study conducted at Alex Ekwueme Federal University Ndufu-Alike Ebonyi State between May and August, 2020. Structured questionnaires were distributed electronically to the participants. The data were analyzed using Statistical Package for Social Sciences (SPSS) version 23.0. Descriptive statistics were used to summarize data and data were presented in frequency tables. Pearson correlation and Chi-square were used to show relationship and compare between variables. The overall prevalence of smoking was 35.25%. Majority (70%) of the participants between the age group of 30 and 34 years were smokers. Among male students, the prevalence of tobacco smoking was 43% and it was 18% in female subjects. The two major factors that led to smoking among the students were curiosity (16.75%) and friends (16%). The smoking prevalence among the students include cigarette smoking-12.5%, shisha smoking-4.25%, cannabis smoking-7%, cigarette and shisha-2.75%, cigarette and cannabis-6.25%, cannabis and shisha-1.5% and all the three 1.0%. A moderate significant positive correlation exists between ever smoked and knowledge of health effect of smoking ($p < 0.05$). The overall smoking prevalence of cigarette, shisha and cannabis was high. A good knowledge of health impacts of smoking and positive attitude towards smoking was found among the students.

Key words: Prevalence, knowledge, smoking, cigarette, cannabis, shisha, students.

INTRODUCTION

Tobacco smoking ranked second amongst the leading risk factors for early death and disability (Emerole et al., 2013). It has been termed a worldwide silent epidemic (Lynskey and Hall, 2000; Ferrante et al., 2013), killing

more than 7 million people on annual basis (Ferrante et al., 2013), and remains the leading cause of preventable deaths globally (WHO, 2018). Eniojukan and Owonaro (2015) opined that smoking may decrease life

expectancy by 7 to 10 years.

Smoking of tobacco is on the increase despite the documented deleterious health impacts on the cardiovascular and respiratory systems, and other disorders (Abikoye et al., 2013). Cigarettes, cannabis and shisha smoking have been on the rise among youths globally (Lynskey and Hall, 2000; Amorha et al., 2017), of which university students are not excluded. Although previously considered a problem in Europe and North America, recent evidences portray a global problem and that it has become highly prevalent in low income countries despite increasing knowledge of its harmful effects (Forouzanfar et al., 2016). In Nigeria, studies have also noted the increasing proportion of young people engaged in smoking (Ukwayi et al., 2012; Emerole et al., 2013).

Cigarette contains over 7000 chemical substances and 69 out of it are implicated in development of carcinoma (Eniojukan et al., 2015). Cannabis is a generic term used to denote the several psychoactive preparations of the cannabis plant. The most obvious short-term health effect of cannabis is intoxication marked by disturbances in the level of consciousness, impaired cognition and motor coordination that often results to road traffic accidents and fatalities, anxiety and psychosis symptoms, acute effects on lungs and airways and acute cardiovascular effects (WHO, 2016). Shisha is a form of tobacco smoke in which the vapor passes through water before inhalation (Bartecchi et al., 1995; WHO, 2005). Shisha smoking is a threat to both the oral and general health of the public. It has been associated with adverse oral health outcomes (Bibars et al., 2015; El-Zaatari et al., 2015).

Independent studies have been conducted on the prevalence of smoking, awareness and predisposing factors among university students (Aslam et al., 2014; Lynskey and Hall, 2000; Amorha et al., 2017). To the best of our knowledge, no study have been conducted on the smoking prevalence, knowledge of the health effect, and attitude towards smoking among university students in AE-FUNAI (a rural university) in Ebonyi State. Thus, there is a need to bridge this gap in knowledge. It is therefore the aim of this study to determine the prevalence of smoking, the knowledge of the health effects of smoking and attitudes towards smoking among students of AE-FUNAI. Specifically, the study will determine these trends using cigarette, cannabis and shisha use among undergraduate students. This paper contributes to knowledge on studies on substance use by encompassing three forms of smoking (cigarette, cannabis and shisha) used among university students. The data obtained would be relevant to public health

sectors in Nigeria for documentation and use in other to increase the fight to prevent the increasing death rates of youths from smoking. The current study will provide answers to the following questions within our data: What are the prevalence rates of smoking among university students? What are their reasons for smoking? What is the degree of their knowledge of the health effects of smoking? What are the effects of smoking on their academic performance?

MATERIALS AND METHODS

This was a descriptive cross-sectional study among the students of Alex Ekwueme Federal University Ndufu-Alike (AE-FUNAI) in Ikwo Local Government Area of Ebonyi State. Ethical approval for this study was obtained from the Research and Ethical Committee of AE-FUNAI. Consent explanation form was issued to the participants electronically and informed written consent was obtained prior to recruitment.

Sampling and data collection

Using the Raosoft sample calculator[®], a minimum sample size of 370 was calculated. However, 500 students were surveyed to provide allowance for partially filled forms. Study was conducted over a 4 month period, from May to August. The participants were drawn from all faculties based on their willingness to participate. A self designed questionnaire was used in this study. These contained questions assessing demographics; cigarette, shisha and cannabis use status; frequency and duration of usage; determinants, deterrents and impact of usage. Questionnaires were administered online using google forms due to COVID-19 related restrictions. Questionnaires were pretested and changes made based on users' feedback before final use in this study to improve clarity and user inter phase. Forms were filled anonymously to ensure confidentiality of participants.

Data analysis

Data collected were analyzed using the Statistical Package for Social Sciences (SPSS) version 23.0 (SPSS Inc. Chicago, USA). Descriptive statistics were used to summarize data and data were presented in frequency tables and were compared using a Chi-square test. Pearson correlation was used to show relationship between variables. p -value < 0.05 was considered statistically significant.

RESULTS

A total of 400 students completed and returned the questionnaire electronically, indicating a response rate of 80.0%.

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Table 1. Socio-demographics of the participating students.

Characteristics	Number (n)	Percentage
Age (Years)		
15-19	70	17.5
20-24	221	55.25
25-29	66	16.50
30-34	37	9.25
35>	6	1.5
Gender		
Male	281	70.25
Female	119	29.75
Faculty		
Education	31	7.75
Sciences	48	12
Engineering and Technology	31	7.75
Basic Medical Sciences	118	29.5
Management and Social sciences	77	19.25
Agriculture and Humanities	95	23.75
Father's occupation		
Business	255	63.75
Civil servant	70	17.5
Retired civil servant	17	4.25
Teacher	15	3.75
Others	43	10.75
Mother's occupation		
Business	252	63.0
Caterer	13	3.25
Civil servant	69	17.25
Retired civil servant	16	4.0
Teacher	14	3.5
Others	36	9.0

Majority of the participants were males (70.25%), between the age group of 20 and 24 years (55.25%) with 29.5% of the respondents being students of the Faculty of Basic Medical Sciences. About 63.75% of the participants had fathers who were business men and 63.0% of them had mothers' occupation as business shown in Table 1.

The overall prevalence of smoking was 35.25%. Majority (70.2%) of the subjects of age group of 30-34 years were smokers. Among male students, the prevalence of smoking was 43% and in female subjects (18%). The highest prevalence of smoking (61%) was found among students of the faculty of Humanities. About 88.0% of the participants whose fathers' were retired civil

servants were smokers. Similarly, 94% of the students whose mothers' were retired civil servants were smokers. About 12.5% of the students smoke only cigarette while only 1.0% smoke cigarettes, cannabis and shisha. The socio-demographic characteristics of the smokers and non smokers were described in Table 2.

Table 3 depicts the smoking prevalence, knowledge of the health effects of smoking and attitude towards smoking. Curiosity (16.75%) and friends (16%) were factors that led to smoking. About 31.5% of the students were between 10 and 20 years of age when they started smoking. The smoking prevalence among the students includes: cigarette smoking (12.5%), shisha smoking (4.25%), cannabis smoking (7%), cigarette and shisha

Table 2. Socio-demographics of the smokers and non-smokers

Characteristics	Smoking status		p-value
	Smoker [N (%)]	Non-smoker [N (%)]	
Age (Years)			
15-19	34 (49)	36 (51)	
20-24	62 (28)	159 (72)	
25-29	19 (29)	47 (71)	<0.05
30-34	26 (70)	11 (30)	
35>	0	6 (100)	
Gender			
Male	120 (43)	161 (57)	
Female	21 (18)	98 (82)	<0.05
Faculty			
Education	5 (16)	26 (84)	
Sciences	14 (29)	34 (71)	
Engineering and Technology	2 (7)	29 (93)	
Basic medical Sciences	22 (19)	96 (81)	<0.05
Management and Social Sciences	40 (31)	37 (69)	
Agriculture	4 (57)	3 (43)	
Humanities	54 (61)	34 (39)	
Father's occupation			
Business	91 (36)	164 (64)	
Civil servant	20 (29)	50 (71)	
Retired civil servant	15 (88)	2 (11)	<0.05
Teacher	9 (60)	6 (40)	
Others	6 (13.95)	37 (86.05)	
Mother's occupation			
Banker	1 (33)	2 (67)	
Business	91 (36)	161 (64)	
Caterer	2 (15)	11 (85)	
Civil servant	20 (29)	49 (71)	<0.05
Retired civil servant	15 (94)	1 (6)	
Teacher	9 (64)	5 (36)	
Others	6 (8)	27 (82)	

(2.75%), cigarette and cannabis (6.25%), cannabis and shisha (1.5%) and all the three tobacco products (1.0%). The frequency of smoking was thus: smoking more than once daily (16.25%), smoking more than once weekly (9.25%) and smoking occasionally (5.5%). The students smoke when they are with their friends (14.75%) and when they are alone (11%). The reasons stated by the students for smoking include: it helps their study habit (12.5%), they love the feeling (9.5%) and it makes them feel relaxed (7.5%). Alcohol drinks (14%) and use of codeine containing syrup (12%) are other substances

used by the smoking students, and these substances are readily gotten from their fellow students (15.25%), friends (6.5%), supermarkets (5.5%) and clubs (5%). About 299 (104 smokers and 195 non-smokers) of the students have good knowledge that smoking can lead to cardio-obstructive pulmonary disease, lung cancer and exacerbate asthma and a number (64) of smoking students do not spend more time on smoking than before, while about 15% are not sure. Also, 30.75% of the smokers responded not to have borrowed money for smoking.

Table 3. Smoking prevalence, knowledge of health effects and attitude towards smoking.

Characteristics	Students	Smokers [n (%)]	Chi square (χ^2)	p-value
What led to your smoking				
Curiosity	67	67 (16.75)	400.00	<0.05
Friends	64	64 (16)		
Neighbors	2	2 (0.5)		
Family	2	2 (0.5)		
Never smoked	259	0		
Forced to smoke	6	6 (1.5)		
Age at first smoking (years)				
<10	7	7 (1.75)	400.00	<0.05
10-20	126	126 (31.5)		
21-30	8	8 (2)		
Never	259	0		
What do you smoke?				
Cigarette	50	50 (12.5)	400.00	<0.05
Shisha	17	17 (4.25)		
Cannabis	28	28 (7)		
Never	259	0		
Cigarette and Shisha	11	11 (2.75)		
Cigarette and Cannabis	25	25 (6.25)		
Shisha and cannabis	6	6 (1.5)		
All	4	4 (1)		
Under what circumstance do you smoke?				
When i am relaxed	27	27 (6.75)	400.00	<0.05
When i am stressed	11	11 (2.75)		
When i am with friends	59	59 (14.75)		
When i am alone	44	44 (11)		
Never	259	0		
Why do you smoke?				
It makes me to relax	30	30 (7.5)	400.00	<0.05
It makes me feel elated	9	9 (2.25)		
It gives me energy	9	9 (2.25)		
It is good for the health	3	3 (0.75)		
I love the feeling	38	38 (9.5)		
My friends are smoking	2	2 (0.5)		
It helps my study habits	50	50 (12.5)		
Never	259	0		
Which of the following do you also do				
Drink alcohol	56	56 (14)	400.00	<0.05
Use codeine containing syrup	12	12 (3)		
Use tramadol	1	1 (0.25)		
Use amphetamine	1	1 (0.25)		
All of the above	3	3 (0.75)		
Never	259	0		

Table 3. Contd.

None of the above	68	68 (17)		
Source of tobacco substances				
Fellow students	61	61 (15.25)		
Friends	26	26 (6.5)		
Supermarkets	22	22 (6.5)		
Clubs/bars/parties	20	20 (5)	400.00	<0.05
Market	6	6 (1.5)		
Never smoked	0	0		
None of the above	6	6 (1.5)		
Which of this can be caused by smoking				
COPD	22	22 (5.5)		
Lung cancer	7	7 (1.75)		
exacerbate asthma	4	4 (1)	86.34	<0.05
none of the above	68	4 (1)		
all of the above	299	104 (26)		
Do you spend more time smoking than before				
Yes	7	7 (1.75)		
No	74	74 (18.5)	391.31	<0.05
Maybe	60	60 (15.0)		
Never smoked	259	0		
Have you ever borrowed money to buy tobacco?				
Yes	7	7 (1.75)		
No	123	123 (30.75)	395.64	<0.05
Maybe	11	11 (2.75)		
Never smoked	259	0		
Have you ever missed lecture(s) while smoking?				
Yes	6	6 (1.5)		
No	125	125 (31.25)	395.64	<0.05
Maybe	10	10 (2.5)		
Never smoked	259	0		
What was your last CGPA				
<2.5	31	8 (2)		
2.5 - 4.0	274	110 (27.5)	8.86	<0.05
> 4.0	94	23 (5.75)		
Do friends and family complain of your smoking attitude?				
Yes	80	80 (20.0)		
No	50	50 (12.5)	395.64	<0.05
Maybe	11	11 (2.75)		
Never smoked	259	0		
Can you stay comfortable for three days without smoking?				
Yes	104	104 (26.0)		
No	29	29 (7.25)	395.64	<0.05
Maybe	8	8 (2.0)		

Table 3. ContD.

Never smoked	259	0		
Have you ever consider quitting smoking?				
Yes	102	102 (25.5)		
No	16	16 (4)		
Maybe	23	23 (5.5)	400.00	<0.05
Never smoked	259	1 (0.25)		
When you attempt quitting did you succeed				
Yes	61	61 (15.25)		
No	78	78 (19.5)		
Never smoked	260	1 (0.25)	395.64	<0.05
if you are to stop smoking today what will stop you				
Pressure from friends	33	33 (8.25)		
I am already addicted	7	7 (1.75)		
All of the above	49	49 (12.25)	400.00	<0.05
never smoked	260	0		
Duration of smoking?				
<10 years	109	109 (27.25)		
11-20 years	32	32 (8)		
Never	259	0	400.00	<0.05
Frequency of smoking				
Occasionally	25	25 (6.25)		
More than once daily	65	65 (16.25)	341.81	<0.05
more than once weekly	37	37 (9.25)		
Never	273	0		

The Table 3 also showed that 30.25% have never missed lecture and about 33.25% had last CGPA greater than 2.5. Additionally, the table showed that more than 20.0% of the smokers' family and friends complain about their smoking attitude. About 26.0% of the smoking students can stay for three consecutive days without smoking and are ready to quit smoking (stating reasons that it is harmful and unlawful (15.75%), waste their time (7%) and they no longer enjoy it (0.5%) and wastes money (1.5%) whereas about 2.5% are not ready to quit smoking and never considered smoking. 19.5% out of the 35.25% of the smokers in the study do not succeed when they attempt quitting whereas 15.25% do succeed. Reasons for difficulty in quitting smoking include pressure from friends (8.25%), already addicted (1.75%) and both reason 12.25%. *p* value was statistically significant (<0.05) across all the variables studied.

Table 4 shows that a moderate positive correlation exists between ever smoked and knowledge of the health

effect of smoking. The correlation was statistical significant ($p < 0.05$).

DISCUSSION

In our present study, the percentage prevalence of smoking was 35.25%. The finding is in consonance with previous reported smoking prevalence of 31.6% in a study in Enugu, Nigeria (Amorha et al., 2017). However, the reported prevalence of cigarette smoking was lower when compared to that of other studies on the prevalence of tobacco smoking among university students in Nigeria and abroad (Abikoye et al., 2013; Amorha et al., 2017; Ferrante et al., 2013; Fawibe and Shittu, 2011; Safaa et al., 2017; Pinchevsky et al., 2012). The high prevalence of tobacco smoking could be due to peer pressure. The findings on cigarette smoking prevalence (12.5%) in this study is similar to the value (12.9%) reported in a study in

Table 4. Relationship between smoking and knowledge of health impact of smoking.

Characteristics	Smokers	r-value	p-value
Knowledge of the health effect of smoking	-	0.287**	<0.001*

CGPA = Cumulative grand point average; r-value = Pearson's correlation; *=significant at $p < 0.05$.

Niger Delta University, Nigeria (Eniojukan and Owonaro, 2015). In contrast, lower values (0.2 to 29.5%) were reported in a systematic review on cigarette smoking among Nigerian youths (Oyewole et al., 2018). The reason for the high prevalence of cigarette smoking could be due to peer pressure and that most of the smoking students believe that smoking helps to improve their study habits and these smoking substances are readily gotten from friends. Moreover, proximity of supermarkets that sell the substances on the campus and availability of tobacco substances at clubs/night parties may also influence the availability. The prevalence of smoking of shisha (4.25%) and cannabis (7%) in this study was very low when compared with other foreign studies (12-16%) (Al-Naggar et al., 2014; Muzammil et al., 2019; Adu-Gyam and Brenya, 2015). Cannabis is a banned substance in the country and this may account for the low frequency.

The male gender has the greater percentage of smokers (43%) when compared with females (18%). This finding is consistent with several published works on smoking in Nigeria and overseas (Amorha et al., 2017; Ferrante et al., 2013; Fawibe and Shittu, 2011; Muzammil et al., 2019; Awopeju et al., 2013). Higher smoking prevalence in males may be due to the social acceptability of the smoking habit among men or a feeling of maturity (symbol of manliness) or peer influence. While lower prevalence in females may be attributed to family values or cultural norms or religion. In this study, age debut for smoking was between 10 and 20 years. This finding is in accordance with several published works on smoking which reported that most smoking students initiated smoking before entering the university (age < 16) (Abikoye et al., 2013; Ferrante et al., 2013; Muzammil et al., 2019; Abdu-Raheem, 2013). Age group of 20 to 24 years has the highest number of respondents as well as number of smokers. This finding agrees with other similar studies in Nigeria (Amorha et al., 2017; Eniojukan and Oworano, 2015; Awopeju et al., 2013). Such increase in number of smokers in this age group could be because of peer influence and this age group is highly associated with the bloom of youth. The major reasons for smoking initiation among the smoking student was curiosity and a feeling that it helps them to study well and this finding is similar to the study of Alghabban (2009) among university students in Kerbala and Abdu-Raheem (2013). In contrast, Peto et al. (1994) stated that loving the feeling and feeling relaxed or pleasure are reasons for smoking

among university students.

Almost 75% of the students (smokers and non-smokers) have good knowledge of health impacts of smoking. Pearson correlation between ever smoked and knowledge of health impacts showed there exists a positive correlation and the result is statistical significant. Our finding corresponds with the result of Amorha et al. (2017), where almost half of the students had good knowledge of smoking and its health impact.

Greater number of the smoking students possess good attitude toward smoking from the present study. Almost all the smokers responded never to have borrowed money for smoking. However, 19.5% of the smokers in the study do not succeed when they attempt quitting and only 15.25% do succeed. The positive attitude towards smoking could be attributed to complaints from the majority of friends and family members of the smoking students against their smoking attitudes. The finding of positive attitude towards smoking in this study is in correspondence with the study of Eniojukan and Owonaro (2015). However, our result disagrees with lots of independent studies in Nigerian and abroad which show a greater negative attitude of university students to smoking irrespective of its health impact (Amorha et al., 2017; Fawibe and Shittu, 2011; Al-Naggar et al., 2014; Oyewole et al., 2018; Eld et al., 2016; Dar-Odeh et al., 2010). Pressure from friends and already addicted to smoking are two major reasons for difficulty in quitting smoking in this present study.

Strengths and limitations

This study was a cross-sectional on online self-reports from the subjects and reporting bias and subjective perceptions may occur. The study was conducted among undergraduate students in a rural community. The result obtained from this population may be of limited application for the youths in urban area as a whole. There is a possibility of the occurrence of type I error due to the numerous related variables studied.

This study is the first study on the prevalence of smoking, knowledge of the health effect of smoking and attitude towards smoking in students in Ebonyi State. The study portrayed the prevalence of smoking, knowledge of the health effect of smoking and attitude towards smoking among students of a rural-based university and thus may be generalized to similar institution with similar characteristics.

The high prevalence of smoking reported in this study highlights the need for the ministry of education to intensify anti-smoking campaigns in the universities. The reasons identified from the smoking students should be taken into account when formulating strategies for anti-smoking programmes. Also, our findings would be relevant to public health sectors in Nigeria and World Health Organization for documentation and use in order to increase the fight to prevent the increasing death rates (in millions) of our youths from smoking. The mass media needs to play crucial role in anti-smoking campaigns.

Conclusion

Our study has shown that overall smoking prevalence of cigarette, shisha and cannabis is high when compared with other related published studies in Nigeria. Our findings showed a very good knowledge of health impacts of smoking and positive attitude towards smoking among the university students. Also, this study showed that curiosity is the main reason for smoking initiation, others include friends, peer-influence, etc. However, some of the smokers are finding it hard to quit and therefore need help to stop smoking. These findings may be useful in policy making and help contribute to knowledge on substance use among university students.

Recommendation

From our results, it is apparent that a sizeable proportion of the students are willing to stop smoking, some have attempted and failed. So we are recommending that schools should set up anonymous services to help in supporting students who are willing to quit smoking.

We also recommend that more awareness campaigns and establishing a curriculum that will contain tobacco use/other substances abused (e.g. cannabis) and its health impacts in all faculties to educate students in the institution. Also, banning selling of tobacco/other substances abused and its products in and outside the campus can be beneficial as it will help reduce death toll from smoking and diseases associated with smoking.

We further recommend that parents should devote more time to stay with their children irrespective of their occupation and tight schedule as this may help reduce increasing smoking attitudes among young ones since our result showed that age of smoking initiation among students is between 10 and 20 years, which is in correspondence with other published studies.

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CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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