

# CIGARETTE SMOKING AMONG UNDERGRADUATE STUDENTS IN SOUTH EAST NIGERIA

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**Abstract:** Cigarette smoking is the commonest form of tobacco use globally. Tobacco related morbidity and mortality is a public health challenge with millions of deaths occurring annually. The majority of the undergraduate students studied knew that smoking can affect the lungs (96.4%), the heart (91.6%), and can lead to poor academic performance (61.6%). Those who have ever smoked were 19.2%, while 6.0% were current smokers. Most started smoking at 16-20 years (79.2%), while a few (2.1%) started at ages 11-15. About half (43.8%) smoked 4-6 sticks per day, but as many as 14.5% smoked  $\geq 11$  sticks per day. The most reported predisposing factor to smoking was peer pressure (78.8%). Efforts at quitting smoking had been made by 37.5%. Some had knowledge of nicotine chewing gum (31.2%) and some had used it (8.3%). No association was found between respondents' sex and being a smoker. However, there was a significant association between knowledge of cigarette smoking as a cause of lung cancer and not smoking.

**Keywords:** Cigarette, tobacco, smoking, nicotine, undergraduate, students, Nigeria.

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## I. INTRODUCTION

Cigarette smoking is the act of inhaling smoke produced by the combustion of dried tobacco rolled in paper. Statistics indicate that out of 6.2 billion people world, 186 million are estimated to be age 13–15 years and currently in school. Out of the 186 million students, it has been found that 10% of the students used tobacco products. In addition to this the researchers found that the majority of the students who used tobacco, initiated use before they were ten years old.(1) People who start smoking early in life are more likely to develop a severe addiction to nicotine than those who start at a later age. It was also found that most adolescents who have smoked at least 100 cigarettes in their lifetime reported that they would like to quit, but are not able to do so.(2)

Some studies have shown that there are approximately 1.3 billion smokers in the world, of which 1 billion are men. The current prevalence of smoking contributes annually to 5.4 million deaths globally attributed to non-communicable diseases (NCDs), such as cancer, for which tobacco use is a risk factor.(3,4) It is predicted that if there are no dramatic changes in cessation rates, no new interventions and if children start smoking at expected rates, then the number of smokers will increase to 1.9 billion and will contribute to 8 million deaths every year attributed to tobacco use by 2030. Tobacco use is said to be the worst emerging global health disasters in modern times warranting immediate action to reverse its effects.(3)

A study done in Italy concluded that the strongest predictor of smoking was the lack of knowledge of adverse effects of smoking to health.(5) Among students in Ethiopia, there was a strong relationship between the level of knowledge regarding adverse effects of smoking and their smoking behaviour. The majority of students (90.8%), knew that smoking was a risk factor for lung diseases. A fifth of the respondents (20.3%), were smokers and of these almost all knew the risk of lung

cancer (87.5%). The students who believed that smoking was harmful to health had lower likelihood of being smokers compared to those who did not.(6)

Another study conducted among students in Kenyan secondary schools, found that knowledge of the adverse effects of smoking deterred a few students (15%) from taking up and maintaining the behaviour of smoking and 13.2% were willing to quit smoking for the sake of their health. Their awareness of the health effects of smoking was from reading the warnings on the cigarette packs or from the media. There was a high level of knowledge regarding the harmful effects of smoking and results showed that 87.8% of students were aware that smoking causes lung cancer. However, this knowledge did not play a significant role either in discouraging the uptake of smoking or encouraging the cessation of smoking among the smoking students. The level of knowledge of the adverse health effects of smoking was the same between smoking and non-smoking students.(7)

Some factors associated with cigarette smoking include the belief that students who smoke cigarettes have more friends and are more attractive. This view was held by a majority of students who smoked in India.(1) Similarly, a study conducted in Malaysia, found that a high percentage of female students believed that smoking caused weight loss. As a result, there was higher prevalence of smoking among female students which translated to the high prevalence of female smoking of about 21%.<sup>15</sup> In the Philippines, a study among female smokers found that many (76.4%) knew that smoking can affect zeal for undertaking daily routine, while about half (53.9%) will like to quit smoking and 79.5% knew about the detrimental effects of smoking on health. Tobacco was seen as a way of expressing feelings particularly anger and unhappiness.(8)

In Kenya, a study found that the perceptions of students regarding drugs contributed to their behaviour in drug use. Most students who had positive attitude towards drug use, used drugs.<sup>18</sup> In a study among medical students in Riyadh, Saudi Arabia, forty (19%) indicated that they smoked at the time of the study. All were males. Many (94%) knew that smoking could cause serious illnesses while 90% will advise their patients to quit smoking. A few (20%) believed that smoking has some beneficial effects like prevention of parkinsonism. Reasons for smoking were influence from friends (80%), stress (26%) and media advertisement (13%).(9)

A study conducted in 76 countries, located in the six WHO regions including African, American, Europe, South East Asian region and the Western Pacific region, analyzed the gender differences in tobacco use among young people in school. There was a lack of gender difference in prevalence of cigarette smoking and other tobacco use in half of the study area. On the other hand, there was significant gender difference in prevalence of cigarette smoking in the rest of the sites. In Sub-Saharan Africa, cigarette smoking prevalence among men was found to range from 8.0% to 27.3% with regional and country differences. However, cigarette use was largely found to be negligible among women in the same countries.(10)

Studies have suggested that the surrounding environment can influence a person's smoking behaviour. A study in Kenya found that urban areas had a higher prevalence of smoking when compared to other areas. This was associated with the density of cigarette retailers in those areas.(11) Among adults in China, a study found out that high concentrations of convenience stores were associated with higher levels of individual smoking and that communities with a high density of tobacco outlets have a higher smoking prevalence.(12)

A study carried out in Zambian schools found out that students who received pocket money were 2.3 times more likely to be smokers as compared to those students who did not receive pocket money. The current smoking habits of the students was also associated with them having parents or other family members who are also cigarette smokers.(13) The availability of cash to students, as pocket money and travel allowances, can be redirected into purchasing of drugs especially if the money is excessive.(14)

Important social factors that influence adolescent smoking are family, peers, media among others.(15) A study conducted in India found that tobacco use by parents was the most likely influence (56.2%) that led adolescents to initiate use. Adolescents, whose parents used tobacco, developed positive attitudes towards tobacco use and were more likely to be users of tobacco products. However, a related study found that a good percentage (57.6%) of parents discourage their offspring from smoking.(15) A study in Saudi Arabia showed that 23.5% were current smokers, 24.1% have ever smoked in the past, and 75.8% are non-smokers. Regarding regularity of smoking, 7.8% of men and 18.3% of females smoked occasionally, 6.2% of men and 8.5% of females smoked once daily and 42.7% of males and 14.6% females smoked 1-3 times weekly, 19.1% of males and 29.3% of females smoked 2-3 times a day. The 3 main psychosocial motives that encourage smoking habits from this research are for fun, for tension relief and imitation of parents particularly mothers.(17)

A study done in Zambia found that exposure to favorable tobacco advertisements is an important risk factor for smoking among adolescents, as students who saw pro-tobacco advertisements were more likely to be smokers than those who did not see such advertisements in the mass media.(13) In Kenya, studies found that a majority of students interviewed saw both anti-smoking messages and pro-cigarette advertisements on billboards, magazines and other media.(4) A study conducted among American high school students in grades 9–12 found that 18.1% of current smokers aged below 18 years purchased their cigarettes from stores or gas stations.(18)

Among dental students in India, 63% were aware of the term Nicotine Replacement Therapy (NRT) and its different forms, 9.4% have used NRT in form of dermal patch and a few have used nicotine gums. Most students were aware of effectiveness of NRT (54%). Use of transdermal patch was regarded to be most effective method of quitting smoking followed by chewing gum.(19)

## II. RESEARCH METHODS

### *Study area*

The study was conducted at Nnamdi Azikiwe University Awka, Anambra State, South East Nigeria. The university has a total of 14 faculties.

### *Study design*

The study was a descriptive cross-sectional study.

### *Study population*

The study population were students in the five Departments under the Faculty of Arts: Departments of English language and Literature, Theatre and Film Studies, Music, Educational Function, and History and International Relations.

### *Data collection instrument*

A semi-structured, self-administered questionnaire was used for data collection.

### *Sample size determination*

Using the Fisher's formulae, minimum sample size was calculated to be 249.48.

### *Sampling technique*

Stratified random sampling technique was used to determine the proportionate samples from the departments.

### *Data analysis*

Data was analyzed using Statistical Package for Social Science, version 20.0. Chi-square test was used to test associations between categorical variables at 5% level of significance.

## III. RESULTS

**Table 1: Sociodemographic characteristics**

Socio-demographic characteristics	N=250 n (%)
<b>Age group (yrs)</b>	
18-20	83 (33.2)
21-23	84 (33.6)
24-26	68 (27.2)
27-29	13 (5.2)
30-32	2 (0.8)
<b>Sex</b>	
Male	70 (28.0)
Female	180 (72.0)
<b>Religion</b>	
Christianity	247 (98.8)
Islam	3 (1.2)

<b>Marital status</b>	
Single	240 (96.0)
Married	10 (4.0)
<b>Department</b>	
Theatre and Film Studies	114 (45.6)
English and Literature	100 (40.0)
Music	23 (9.2)
Educational Function	10 (4.0)
History and International Relationship	3 (1.2)

**Knowledge of cigarette smoking as a risk factor for diseases**

Table 2 shows that the majority of the respondents knew that smoking can affect the lungs (96.4%), cause lung cancer (90.0%), and can affect the heart (91.6%). Fewer knew that smoking can lead to poor academic performance (61.6%).

**Table 2: Knowledge of cigarette smoking as a risk factor for diseases**

Variable	N=250 n (%)
<b>Smoking can affect the lungs</b>	
Yes	241 (96.4)
No	5 (2.0)
Don't know	4 (1.6)
<b>Smoking can cause lung cancer</b>	
Yes	225 (90.0)
No	21 (8.4)
Don't know	4 (1.6)
<b>Smoking can affect the heart</b>	
Yes	229 (91.6)
No	17 (6.8)
Don't know	4 (1.6)
<b>Smoking can lead to poor academic performance</b>	
Yes	154 (61.6)
No	92 (36.8)
Don't know	4 (1.6)

**Cigarette smoking practices**

The majority of the respondents have never smoked (80.8%). However, 19.2% have ever smoked and 6.0% are current smokers. The majority commenced smoking at 16-20 years (79.2%), while few commenced smoking at 11-15 years (2.1%). Many (43.8%) smoked 4-6 sticks per day. Some (14.5%) smoked ≥ 11 sticks per day, as shown in Table 3.

**Table 3: Cigarette smoking practices**

Variables	N=250 n (%)
<b>Ever smoked</b>	
Yes	48 (19.2)
No	202 (80.8)
<b>Current smoker</b>	
Yes	15 (6.0)
No	235 (94.0)
<b>Age at onset of smoking (yrs)</b>	
	<b>(N=48)</b>
11-15	1 (2.1)
16-20	38 (79.2)
≥ 21	9 (18.7)
<b>Smoke before going to school</b>	
Yes	17 (35.4)
No	31 (64.6)

**Number of sticks smoked per day**

1-3	8 (16.7)
4-6	21 (43.8)
7-10	12 (25.0)
≥ 11	7 (14.5)

**Predisposing factors to cigarette smoking**

Table 4 shows that the most reported predisposing factor to smoking was peer pressure (78.8%). The least was school/academics (2.4%).

**Table 4: Respondents' opinion of the predisposing factors to cigarette smoking**

Variables	N=250 n (%)
<b>Peer pressure</b>	
Yes	197 (78.8)
No	53 (21.2)
<b>Anxiety</b>	
Yes	43 (17.2)
No	207 (82.2)
<b>Family</b>	
Yes	15 (6.0)
No	235 (94.0)
<b>School/academics</b>	
Yes	6 (2.4)
No	244 (97.0)
<b>Depression</b>	
Yes	17 (6.8)
No	233 (93.2)
7-10	13 (25.0)
≥ 11	8 (16.0)

**Respondents' effort at quitting cigarette smoking**

A number of respondents had tried to quit smoking (37.5%). Health concerns was the commonest reason given for wanting to quit smoking (43.8%). Some knew about nicotine chewing gum (31.2%) and 8.3% had used it. Thirty-seven (77.1%) found their families to be supportive of their effort at quitting (Table 5).

**Table 5: Respondents' effort at quitting cigarette smoking**

Variables	N=48 n (%)
<b>Number of times tried to quit smoking</b>	
Never	30 (62.5)
Once	13 (27.1)
Twice	2 (4.2)
Many times	3 (6.2)
<b>Aid on quitting smoking</b>	
Counselling	13 (27.1)
Exercise	3 (6.3)
Self-will	32 (66.6)
<b>Knowledge of nicotine chewing gum</b>	
Yes	15 (31.2)
No	33 (68.8)

<b>Ever used nicotine chewing gum</b>	
Yes	4 (8.3)
No	44 (91.7)
<b>Main reason for quitting</b>	
Health	21 (43.8)
Money	1 (2.1)
Family	11 (23.0)
Self-decision	25 (52.1)
<b>Family support</b>	
Supportive	37 (77.1)
Not supportive	11 (22.9)

*Test of association between variables*

Table 6 shows that there was no significant association between respondents' sex and being a smoker. However, there was a significant association between knowledge of cigarette smoking as a cause of lung cancer and not smoking ( $p < 0.001$ ), as shown in Table 7.

**Table 6: Test of association between sex and smoking**

Variables	Smoking		Total	X <sup>2</sup>	P value
	Yes	No			
<b>Sex</b>					
<b>Male</b>	24 (34.3%)	46 (65.7%)	70 (100.0%)	14.262	0.239
<b>Female</b>	24 (13.3%)	156 (86.7%)	180 (100.0%)		
<b>Total</b>	48 (19.2%)	202 (80.8%)	250 (100.0%)		

**Table 7: Relationship between the knowledge of cigarette as a cause of lung cancer and being a current smoker**

Variables	Smoking causing cancer		Total	X <sup>2</sup>	P-value
	Yes	No			
<b>Currently smoking</b>					
<b>Yes</b>	3 (20.0%)	12 (80.0%)	15 (100.0%)	86.879	Fisher's exact
<b>No</b>	222 (94.5%)	13 (5.5%)	235 (100.0%)		
<b>Total</b>	225 (90.0%)	25 (10.0%)	250 (100.0%)		<0.001*

\*Statistically Significant

**IV. DISCUSSION**

In a study among medical students in Riyadh, Saudi Arabia, 19% indicated that they smoked at the time of the study. All were males.(9) A study in Saudi Arabia showed that 23.5% were current smokers and 24.1% have ever smoked in the past.(17) Regarding regularity of smoking, 19.1% of males and 29.3% of females smoked 2-3 times a day.(16) A fifth of the students in an Indian study were smokers (20.3%).(16) A multi-country study done in the six WHO regions found a lack of gender difference in prevalence of cigarette smoking in half of the study area. On the other hand, there was significant gender difference in prevalence of cigarette smoking in Sub-Saharan Africa where cigarette smoking prevalence among men was found to range from 8.0% to 27.3% but was found to be negligible among women in the same countries.(10) All the studies show that about a fifth of respondents were smokers. Similarly, our study found that 19.2% have ever smoked, while 6.0% were current smokers. However, about two-thirds were males while one-third were females. A similar proportion to that of the study done in Saudi Arabia(19), as 19.7% smoked 1-3 sticks a day.

The majority of students in Ethiopia (90.8%), knew that smoking was a risk factor for lung diseases. Almost all the respondents who were smokers knew the risk of lung cancer (87.5%).(16) For the students in Kenyan secondary schools,

there was a high level of knowledge regarding the harmful effects of smoking and results showed that 87.8% of students were aware that smoking causes lung cancer.(7) In the Philippines, a study among female smokers found that many (76.4%) knew that smoking can affect zeal for undertaking daily routine and 79.5% knew about the detrimental effects of smoking on health.(1) In the study done in Saudi Arabia 94% knew that smoking could cause serious illnesses.(19) Overall, knowledge of the harmful effects of smoking was high in all studies including our study were 96.4% and 91.6% knew of the possibility of harm to the lungs and heart, respectively. This similarity in results is most likely due to the widespread publicity on the harmful effects of cigarette smoking.

Reasons for smoking among respondents in Saudi Arabia were influence from friends (80%), stress (26%) and media advertisement (13%).(19) Similarly, our study found that the most influence for smoking was peer pressure (78.8%). A study done in India found that a good percentage (57.6%) of parents discourage their offspring from smoking.(15) The majority of our respondents also received support from their family in their bid to stop smoking (77.1%).

In a study among dental students in India, 63% of the students were aware of the term Nicotine Replacement Therapy (NRT) and its different forms, 9.4% have used NRT in form of dermal patch and a few have used nicotine gums. Most students were aware of effectiveness of NRT (54%). Use of transdermal patch was regarded to be most effective method of quitting smoking followed by chewing gum.(19) A smaller proportion of our respondents knew about nicotine chewing gum (31.2%) and 8.3% had used it.

A study done in Italy concluded that the strongest predictor of smoking was the lack of knowledge of adverse effects of smoking to health.(5) Similarly, among students in Ethiopia, there was a strong relationship between the level of knowledge regarding adverse effects of smoking and their smoking behaviour. The students who believed that smoking was harmful to health had lower likelihood of being smokers compared to those who did not.(16) On the contrary, for students in Kenya, knowledge of adverse health effect did not play a significant role either in discouraging the uptake of smoking or encouraging the cessation of smoking among the smoking students. The level of knowledge of the adverse health effects of smoking was the same between smoking and non-smoking students.(7) A study conducted in Malaysia, found that a high percentage of female students believed that smoking caused weight loss. As a result, there was higher prevalence of smoking among female students which translated to the high prevalence of female smoking of about 21%.(8) Our study also found a significant association between knowledge of cigarette smoking as a cause of lung cancer and not smoking, but no significant association between sex and prevalence of smoking.

Health education on the risks of cigarette smoking should be done regularly among adolescent groups and the general public. People should also be thought stress management strategies so that they do not resort to smoking for that purpose. Nicotine replacement therapies should be made available in the hospitals for prescription during management of nicotine withdrawal symptoms.

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