



## Students' knowledge and attitudes towards ill-effects of tobacco use in Jos metropolis of Plateau State, Nigeria

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### Abstract

**Objective:** Young people are vulnerable to a range of ill behaviours including tobacco use. Preventing tobacco use among youths may be an easier task than helping adults break the habit of smoking and overcome its ill effects. The objective of this study was to determine the knowledge and attitude of students towards the ill-effects of tobacco use on health.

**Method:** This was a cross-sectional study involving secondary and tertiary school students from the Capital Territory of Plateau State of Nigeria (Jos North, Jos South and Jos East). A two-stage sampling technique was used with four secondary schools selected from each of the three Local Government Areas (LGAs). Two tertiary schools were selected from Jos South and three from Jos North proportionally to the number of schools in the two LGAs. The second stage was the selection of 661 students from the selected seventeen schools using systematic sampling procedure. A self/interviewer-administered questionnaire on smoking habits, knowledge of the different forms of tobacco, ill-effects of tobacco use, and attitude towards quitting was used for data collection.

**Result:** The mean age was  $18.09 \pm 2.11$  years for secondary school students and  $30.65 \pm 8.72$  years for tertiary school students. The prevalence of tobacco use among secondary and tertiary school students were 13.6% and 22.4% respectively. More than half of the students use tobacco for social influence and cigarette was the major form of tobacco use. Majority (92.9%) of the students were generally aware of the fact that tobacco use has adverse effects on health but, the knowledge of the specific side effects was relatively low especially among current users. More than a quarter of the attempted quitters ( $n=68$ ) sought advice about quitting from friends rather than health professionals.

**Conclusion:** Knowledge of the specific hazards of tobacco use was low, especially among current users of tobacco. This study, there is an urgent need for education on tobacco and the initiation of cessation campaigns among the youths. Education on the ill-effects of unhealthy lifestyle such as tobacco use should be incorporated into secondary school curriculum. Oral health professionals, as major stakeholders, should be fully involved in these campaigns.

**Key Words:** Students, Tobacco, Smoking, Quitting

### Introduction

Tobacco is addictive and most secondary school children and adolescents regularly come in contact with it. It has been documented that adolescents and youths constitute the major target population of the tobacco industry and tobacco advertisements<sup>(1)</sup>. School-age is a time when many long-term lifestyle and behavioural choices are being cultivated<sup>(2)</sup>. This population is thus vulnerable to a range of ill-behaviours and activities, including tobacco use<sup>(3)</sup>.

In developing countries, traditionally, and until recently, young people smoked surreptitiously in respect to social taboos, but this situation is no longer the same<sup>(4)</sup>. Tobacco use is the largest single preventable cause of death in the world today, and is responsible for many cancers, coronary heart disease, peripheral vascular disease, chronic bronchitis and emphysema<sup>(5)</sup>. Tobacco use is now a global health problem. Evidence of the harmful effects of tobacco use has existed for 200 years at first in relation to oral cancer<sup>(6)</sup>.

Tobacco in any form contains carcinogens and nicotine, an addictive chemical that can keep the user "hooked"<sup>(7,8)</sup>. It is widely taken in different ways such as smoking tobacco (cigarette, cigar, pipe and hooker) and smokeless tobacco (snuff, chewing); of which cigarettes are the most commonly used<sup>(9)</sup>.

The practice is addictive, and can produce a variety of effects. These include mild euphoria, relaxation, relief of depression and boredom, appetite suppression, hypersalivation, increased peristalsis, and staining of teeth<sup>(10)</sup>. Even low doses of exposure to tobacco increases the risk of acute myocardial infarction<sup>(11)</sup>.

There are 1.2 billion smokers globally, of which more than 50% are young people<sup>(12)</sup>. Malaysia has about five million smokers and 20% are younger than 18 years old<sup>(12)</sup>. The prevalence of tobacco smoking among Nigerian youth is 18.1%<sup>(13)</sup> and a high smoking prevalence of 33.9% was shown among adolescents in a rural setting in Northeast Nigeria<sup>(14)</sup>. While a smoking prevalence of 9.4% was



reported for senior secondary school students in Southwestern Nigeria<sup>(15)</sup>. Most smokers begin at early stage of life and persist through adulthood<sup>(12)</sup>. Tobacco smoking is a growing public health problem in developing countries and the awareness of some of the dangers caused by smoking is low among Africans in general<sup>(14)</sup>.

This study was aimed at determining the knowledge and attitude of students towards ill-effects of tobacco use and to make recommendations on the basis of our findings which would contribute to the prevention of tobacco use among students or young people.

#### Materials and method

This was a cross-sectional study involving secondary and tertiary school students from Jos, Capital Territory of Plateau State of Nigeria consisting of Jos North, Jos South and Jos East. A two-stage sampling technique was used with four secondary schools selected from each of the three Local Government Areas (LGAs). Two tertiary schools were selected from Jos South and three from Jos North proportionally to the number of schools in the two LGAs. The second stage was the selection of 661 students from the selected seventeen schools using systematic sampling procedure. A self/interviewer-administered questionnaire on smoking habits, knowledge of the forms of tobacco, ill-effects of tobacco use, and attitude towards quitting was used for data collection.

Some of the schools visited within the LGAs are located in areas where there are no available infrastructures and far distance to the city. These areas were considered as "rural" areas in this study, while the LGA Headquarters were considered as "urban" areas.

Prevalence of tobacco use was determined from active use of tobacco products. Those who answered yes to the question "Do/did you ever take tobacco?"

Awareness was determined from a "yes" response to the question "Do you know of any side effects of tobacco?"

Knowledge was determined from the ability to choose correct answers from the options that were given in the questionnaire on ill-effects of tobacco use on oral and systemic health. Four correct options were included among ten options that were given to students in the questionnaire. Two options representing ill-effects of oral health and the other two representing ill-effects of systemic health. Students who were able to choose the two correct options for ill-effects on oral health had a good knowledge of the ill-effects of oral health. The same was also determined for knowledge of ill-effects of systemic health.

Attitude towards tobacco use was limited to those that have ever used tobacco. Attempt to quit tobacco use was seen as a good attitude. Seeking advice on how to quit tobacco use was also seen as a good attitude.

#### Ethical considerations:

Authorization was obtained from Plateau State Ministry of Education for secondary school students. Also, for the tertiary institutions, authorization was sought from the heads of the selected tertiary schools. The purpose of this study was clearly explained to the participants and their verbal consent obtained prior to data collection.

#### Data analysis

Statistical analysis was carried out using the Statistical Package for Social Sciences (SPSS) version 14.0. Also relevant hypotheses were tested using chi-square.

#### Result

##### Demographic profile of the students

A total of 661 respondents were interviewed, 469 secondary school students (252 male and 217 female) and 192 tertiary school students (113 male and 79 female) with the mean age of  $18.09 \pm 2.11$  years and  $30.65 \pm 8.72$  years for secondary and tertiary schools respectively. Students from urban areas were 70.3% and rural areas were 29.7% (**Table 1**).

##### Prevalence and forms of tobacco use among students

The prevalence of tobacco use was 16.2% with a higher prevalence among tertiary school students (22.4%). A strong association was found with gender ( $P=0.000$ ), school type ( $P=0.006$ ) and factors such as (social influence (44.9%) and family tradition (10.3%)  $P=0.000$  (**Table 2**).

The commonest form of tobacco use among students were cigarettes [secondary (71.9%) and tertiary(79.1%)], nasal snuff [secondary (10.9%) and tertiary (7.0%)] and chewable tobacco [secondary (4.7%) and tertiary (4.7%)], while oral snuff and reverse smoking were less commonly used (**Figure 1**).

##### Knowledge of tobacco use among students

Our study showed that (92.9%) students were generally aware of ill-effects of tobacco use on health. The specific knowledge of adverse effects of tobacco on oral and systemic health was low especially among secondary and tertiary school students who have ever used tobacco and among current users. Knowledge of tobacco use in causing oro-pharyngeal cancer was low among tertiary school students who have ever used tobacco (25.6%) and those who are still using tobacco (6.3%). Knowledge of effects of staining of teeth was low (33.3%) among current users of tobacco in secondary schools. Effects of tobacco use in causing lung cancer (25.0%) and addiction (25.0%) was lower among current users in tertiary schools than those in secondary schools (lung cancer 55.6% and addiction 55.6%) (**Table 3**).

##### Reasons for tobacco use among students

Social influence was the most common reason for tobacco use among both secondary (37.5%) and tertiary (55.8%) school students in this study. Family tradition was also a common reason for tobacco initiation among secondary school students (17.2%) (**Figure 2**).

##### Attitude of students towards tobacco use

Attempted quitters who sought advice to quit tobacco use from physicians were 11.8% while 2.9% sought advice from dentists, and 27.9% from friends

Our study showed that tertiary school students quit tobacco use mostly because they perceived that taking tobacco is a bad habit, while adverse effects on health caused by tobacco use was the reason for quitting among secondary school students (**Figure 3**).



**Table 1: Demographic characteristics of respondents**

Variables	Number (%)	
Mean Age (years)	Secondary School	18.09±2.11
	Tertiary Institution	30.66±8.72
Gender	Male	365(55.2)
	Female	296(44.8)
School type	Secondary	469(71)
	Tertiary	192(29)
Location	Urban	465(70.3)
	Rural	196(29.7)
	<b>Total</b>	<b>166(100.0)</b>

**Table 2: Prevalence of tobacco use among students**

Variables		Do you or did you ever take tobacco?		Chi-square Test
		Yes (%)	No(%)	
School type	Secondary	64(13.6)	405(86.4)	$X^2 = 7.687, p = 0.006$
	Tertiary	43(22.4)	149(77.6)	
Gender	Male	82(22.5)	283(77.5)	$X^2 = 23.680, p = 0.000$
	Female	25(8.4)	271(91.6)	
	<b>Total</b>	<b>107(16.2)</b>	<b>554(83.8)</b>	
Factors for tobacco initiation	Social influence	48(81.6)		$X^2 = 23.203, p = 0.000$
	Family tradition	11(18.6)		
	<b>Total</b>	<b>56(100.0)</b>		

**Table 3: Knowledge of the effects of tobacco use on oral and systemic health**

Variables	Secondary		Tertiary		Chi-square Test
	Yes	No	Yes	No	
<b>Among respondents 614(92.9%)</b>					
<b>Knowledge of oral health effects:</b>					
Staining of teeth	326(74.1)	114(25.9)	127(73.0)	47(27.0)	$X^2=0.078, df=1, P=0.780$
Oro-pharyngeal	287(65.2)	153(43.8)	70(40.2)	104(59.8)	$X^2=32.015, df=1, P=0.000$
<b>Knowledge of systemic health effects:</b>					
Lung cancer	364(82.7)	76(17.3)	139(79.9)	35(200.1)	$X^2=0.680, df=1, P=0.410$
Addictive	289(65.7)	15(34.3)	97(56.1)	76(43.9)	$X^2=4.921, df=1, P=0.027$
<b>Among those that have ever used tobacco (107) (16.2%)</b>					
<b>Knowledge of oral health effects:</b>					
Staining of teeth	37(57.8)	27(42.2)	25(58.1)	18(41.9)	$X^2=0.001, df=1, p=0.973$
Oro-pharyngeal	36(56.3)	28(43.8)	11(25.6)	32(74.4)	$X^2=9.821, df=1, p=0.002$
<b>Knowledge of systemic health effects:</b>					
Lung cancer	45(70.3)	19(29.7)	28(65.1)	15(34.9)	$X^2=0.320, df=1, p=0.571$
Addictive	40(62.5)	24(37.5)	17(40.5)	25(59.5)	$X^2=4.948, df=1, p=0.026$
<b>Among current users (25) (3.8%)</b>					
<b>Knowledge of oral health effects:</b>					
Staining of teeth	3(33.3)	6(66.7)	8(50.0)	8(50.0)	$X^2=0.649, df=1, P=0.420$
Oro-pharyngeal	5(55.6)	4(44.4)	1(6.3)	15(93.8)	$X^2=7.677, df=1, P=0.006$
<b>Knowledge of systemic health effects:</b>					
Lung cancer	5(55.6)	4(44.4)	4(25.0)	12(75.0)	$X^2=2.334, df=1, P=0.127$
Addictive	5(55.6)	4(44.4)	4(25.0)	12(75.0)	$X^2=2.334, df=1, P=0.127$

**Discussion**

Tobacco use in its different forms and its association with ill-effects on health among the adult population worldwide have been reported<sup>(8)</sup>. Our study among students has shown a trend similar to that reported for adults, in terms of

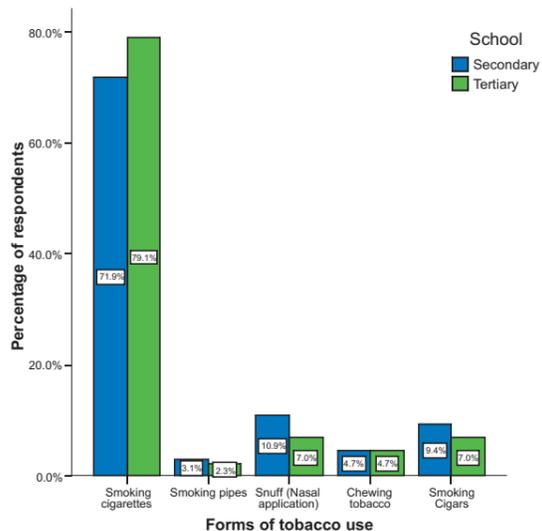
a rising occurrence of tobacco use especially in the form of cigarettes and mostly among males. This is similar to reported findings in Africa and Europe<sup>(8,16,17)</sup>.

Prevalence of tobacco use in our study showed a considerable number of secondary (13.6%) and tertiary (22.4%) school students use tobacco. A comparison of the findings of this study for secondary school students with

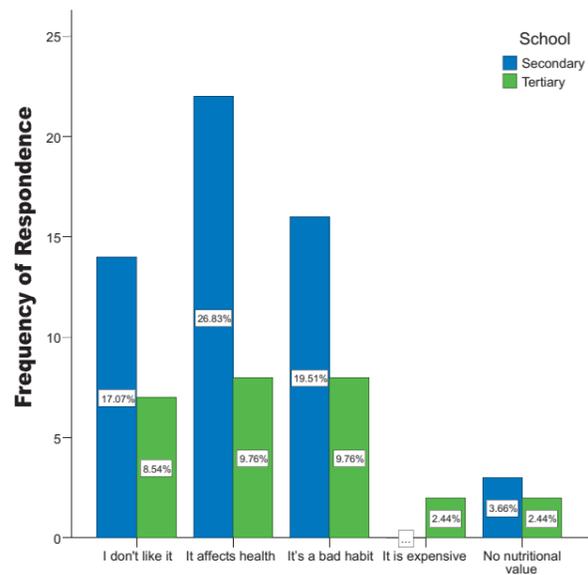


**Table 4: Comparison of prevalence with other studies**

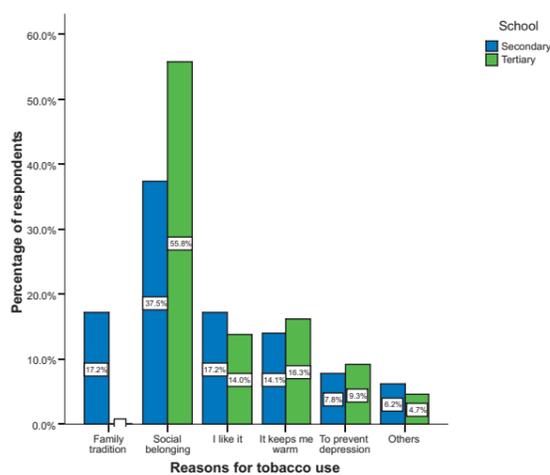
Variables	Sample size	Smokers	Non-smokers	P Value
This study/secondary students	469	64(13.6%)	405(86.4%)	0.000
North-East/ among adolescents	171	58(33.9%)	113(66.08%)	
This study/secondary students	469	64(13.6%)	405(66.08%)	0.050
South-West/ senior sec. school	1123	115(9.4%)	1008(90.6%)	
North-East/among adolescents	171	58(33.9%)	113(66.08%)	0.000
South-West/ senior sec. school	1123	115(9.4%)	1008(90.6%)	
This study/secondary students	469	64(13.6%)	405(86.4%)	0.023
South-West/ out of school adolescents	215	44(20.5%)	171(79.5%)	
This study/ Tertiary students	192	43(22.4%)	149(77.6%)	0.635
South-West/ out of school adolescents	215	44(20.5%)	171(79.5%)	



**Figure 1: Forms of tobacco use among secondary and tertiary school students**



**Figure 3: Reasons for cessation of tobacco use among secondary and tertiary school students (n = 82)**



**Figure 2: Reasons for tobacco use among secondary and tertiary school students (n = 107)**

similar studies in the Northeast<sup>(14)</sup> shows a significantly higher prevalence among youths in the Northeast (P=0.000). The comparison of the findings in this study with a recent study in Oyo, Southwest Nigeria<sup>(18)</sup> showed a significantly lower prevalence for North Central Zone for secondary school students (P=0.023) and no significant difference for tertiary students (P=0.635). This could be attributed to the age group of the respondents in the Oyo study, which consists essentially of over-aged students in secondary schools. These respondents are more independent with a lesser parental control than students in the 11-16 years age bracket for secondary schools (**Table 5**).

Social influence seemed to be the major reason for tobacco use among both secondary and tertiary school students in this study, which could be related to peer influence, lack of knowledge of specific ill-effects of tobacco and wrong belief that tobacco can improve self-image and self-esteem as reported by a study on "Preventing Tobacco Use among



Young People<sup>(3)</sup>. Loneliness and inability to cope with stress were major reasons for smoking among secondary school students in Ibadan<sup>(15)</sup>.

Family tradition also played a role on the initiation of tobacco use among secondary school students in our study, which may be related to the fact that those who come from homes where parents and guardians use tobacco openly are likely to take tobacco; this is also reported in other studies<sup>(19,20)</sup>. The family can therefore be utilised for transmitting knowledge about specific dangers of tobacco to its members.

A study on tobacco use among adults in Cambodia reported that 10 to 20% of tobacco users who continued to use tobacco believed that cigarette smoke provides warmth<sup>(21)</sup>. A study from the relatively hot Northeast showed a higher (33.9%) prevalence of tobacco use among adolescents<sup>(14)</sup>. A comparison of the findings of this study in a temperate region of North Central Nigeria for secondary school students with similar studies in the Northeast shows a significantly higher prevalence among youths in the Northeast ( $P=0.000$ ). This finding tends to debunk the notion that cold weather influenced tobacco use and is further substantiated by the significant difference between the findings in the Northeast and Southwest studies ( $P=0.000$ )<sup>(14,18)</sup>.

This study recorded a high awareness of the adverse effects of tobacco use among the students (92.9%), but specific knowledge of effects on oral and systemic health was low particularly among current users in both secondary and tertiary schools. The findings of a low level of knowledge of specific side effects is also similar with previously reported findings in Spain, Kuwait and South Africa<sup>(1,22,23)</sup>. This also agrees with the findings in Asia where students from North-eastern States of India knew very little about the ill-effect of tobacco use and young Cambodian women were unaware of the health risks of tobacco use<sup>(10,24)</sup>. In another study in which qualitative data was collected from two regions in India, participants were generally aware that tobacco use has a deleterious effect on health although specific knowledge was low<sup>(25)</sup>. This could be partly due to lack of warnings on the packets of the tobacco products in these countries and the belief that seeing a non-smokers face in the morning could bring bad luck<sup>(5)</sup>. Cigarettes and tobacco products did not carry warning signs in Nigeria, until about 5 years ago.

It is noteworthy that secondary school students in this study had more knowledge of tobacco use in causing oropharyngeal cancer than tertiary school students. The worrisome situation is that current tobacco users from both secondary and tertiary schools had a lower knowledge of ill-effects of tobacco on oral and systemic health which may be the reason for continuous use of tobacco by the students. Education on specific knowledge of adverse effects of tobacco use is therefore necessary.

The major reasons for quitting tobacco use among secondary and tertiary school students in our study were related to "their awareness of the ill-effects of tobacco use" and "that it is a bad habit". There is therefore a need to introduce tobacco control programs in secondary schools to create awareness about specific dangers of tobacco. Additionally, good cultural beliefs or norms of the society that have positive influence on attitudes and behaviour should be encouraged.

A study of the role of the dental team in tobacco cessation showed the lack of involvement of healthcare professionals

in tobacco cessation and prevention practices<sup>(26)</sup>.

### Conclusion

This study showed a high awareness of the ill-effects of tobacco use among respondents, but the specific knowledge of hazards of tobacco was low. A considerable number of tobacco users attempted quitting and only a few of the attempted quitters sought the advice of health professionals, while most of them relied on their peers.

### Recommendations

1. Education about the ill-effects of unhealthy lifestyles, including tobacco use, should be incorporated into the secondary schools curriculum.
2. School tobacco control programs should be initiated by health professionals with emphasis on creating more awareness about specific dangers of tobacco use; correcting wrong impressions portrayed by tobacco industries and also encouraging good cultural beliefs.
3. The family may be a good channel for transmitting knowledge about dangers of tobacco use to its members; there is therefore the need to mobilize parents and guardians during Parents Teachers Association (PTA) meetings in secondary schools in order to educate their children and wards on the adverse effects of tobacco use on health.
4. The involvement of oral healthcare professionals in tobacco cessation and prevention practices is highly recommended. Dentists and Dental Therapists can educate patients during routine clinic visits on tobacco cessation and the various aids available for tobacco cessation.

### Acknowledgments

The fund for this research was provided by a grant from the Regional Centre for Oral Health Research and Training Initiatives (RCORTI) for Africa, Jos, Nigeria and the WHO/AFRO.

Our sincere appreciation goes to the management and fellow researchers at RCORTI for their encouragement; the Plateau State Ministry of Education and the Heads of various schools visited in the course of the study.

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