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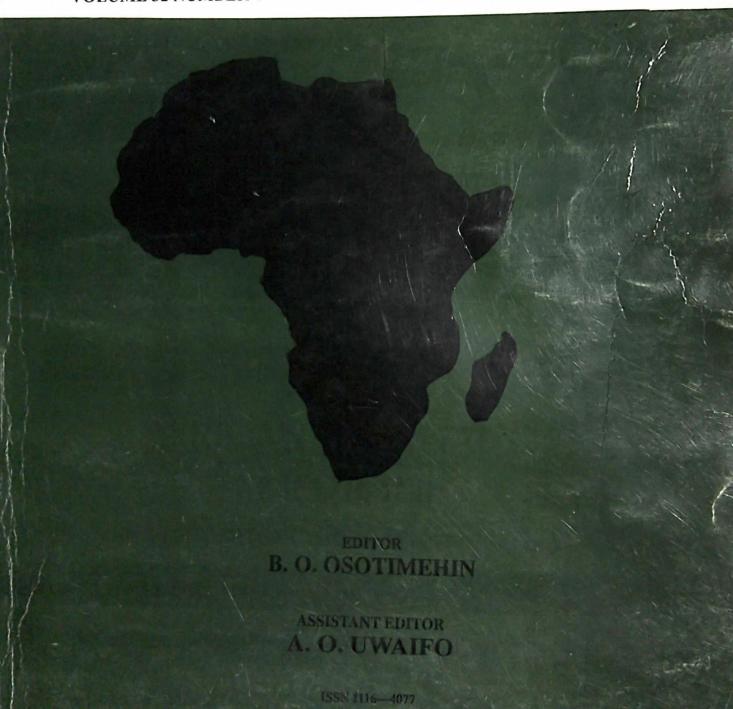# MEDICINE
and medical sciences

Prevalence of cigarette smoking in young Nigerian females

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Summary

Cigarette smoking is a very important public health problem globally, with patterns of smoking varying in different regions of the world. The negative impact of smoking on health is well known but the increasing rate of smoking amongst the youth including females is note worthy. The objective of this study is to determine the prevalence of smoking in young Nigerian females with a view to defining the size of this social problem and outlining possible control measures. The setting for the study was secondary (post-primary) schools in Anambra State, South east of Nigeria. The study, a cross-sectional survey, involved eight (8) schools selected by multistage sampling technique. A Structured questionnaire was designed for the study. A total of 1,200 female secondary school students were involved. The mean age of the respondents was 16.06 ± 1.36 years. The main religious denominations were Roman Catholic 69.7%, Anglicans 23.6%, Pentecostal 5.7%, Islam 0.4% and others 0.4%. Ninety two point seven percent (92.7%) were single, 2.9% were married and 4.4% engaged. Fifty seven point four percent (57.4%) were day students while 42.6% were boarders. Smoking prevalence was 7.7%. Smoking was started at the mean age of 12.6 ± 3.8 years. The number of cigarettes smoked per day has a median of 2 sticks. Marital status significantly affected smoking prevalence as the married had more tendency to smoke than the unmarried. Though the number of day students who smoked were more than the boarders, the significance could not be demonstrated statistically due to the small number of subjects who smoke. Parents educational status did not show any significant influence on the smoking habit. We conclude that the prevalence of cigarette smoking in young Nigerian females is relatively low. Intervention at this stage will be timely but effective strategies to curb the habit will require identification of other factors that may be contributing to the social menace.

Keywords: *Cigarette, smoking, young, females, prevalence*

Résumé

Fumer la cigarette reste un véritable problème de santé , avec la frequence de fumeurs variant d'une région a l'autre. L'impact negative de fumer sur la santé est bien-connu mais l'augmentation du taux des fumeurs parmi les jeunes inclu les filles est valeureux. L'obejectif de cette étude est de detrminer le taux des jeunes filles Nigérianne qui fument ayant pour but de définir la grandeur du problème sociale et relever les mesures de controle possibles. Le lieu de l'étude était des écoles secondaires d'Anam dans la province d'Anambra au Sud-Est du Nigeria. Cette étude de surveillance tranversalement croisée inclue 8 colléges selectionnés pour la technique generale utilisant un questionnaire structuré. Un total de 120 filles étaient recrutées. La moyenne d age était de 16 ± 1.36 ans predimnant de l'église catholique 69.7%, Anglicane 23.6% pentecotiste 5.7% Islam 0.4% et

d'autres dénominations 0.4%. 92.7% était des celibatiares, 2.9% était des marriés et 4.4% des concubents. Cinquante sept pour cent etaient des écoliers regiuliers contre 42.6% des benevoles. Le taux de fumeurs était de 7.2%; avec une moyenne d' age de fumer de 12.6 ± 3.8 ans. Avec une médiane de 2 batons de cigarettes par jour, le status mental affectait significativement le taux de fumeurs plus prevalent chez les marriés que les non-marriés. Le nombre de collégians regulier qui fumaient etaient plus que ceux allant au cours du soir. Nous avons conclu que le taux des cigarettes fumées par les jeunes filles nigeriannes est relativement faible. L'intervention a cette étape sera nécessaire, mais aussi des stratégies effectives doivent être mise en place pour réduire cette habitute et l'indentification d'autres facteurs qui peuvent contibuer a cette ménace sociale.

Introduction

Cigarette smoking is a worldwide phenomenon associated with adverse health effects. It is recorded to account for a million deaths in women annually [1].

The pattern of smoking differs in the different regions of the world. While there is a decline in the developed nations [2,3] there is an increase in the developing nations especially among the young age groups [4] The reasons for smoking are multi-factorial involving individual, psychological and environmental factors. Smoking habits are also known to be associated with factors such as age, nationality, marital status, educational level, occupation, physical and mental strain at work, economic conditions and social supports [5,6]..

The problem of smoking hitherto considered a health burden of the developed nations is rapidly spreading to the third world countries. This has been enhanced by the rapid globalization of the world, rapid dissemination of information, ease in international travels and massive television and radio advertisements. Western ideas are set as models, traditional cultures and ties are weakening and women emancipation is championed. The effect of these is the adoption of life styles simulating that of the West especially among the youths.

Tobacco smoking is one of such life styles which the Nigerian youths are easily embracing with its attendant ills. Female smoking is associated with increased risk of abruptio placenta, placenta previa, premature membrane rupture, premature birth and low birth weight [7]. These are apart from the other documented diseases associated with cigarette smoking in males [8,9,10]. This study aims to assess the smoking prevalence among young Nigerian females and the factors associated with it. The findings it is hoped will assist in mounting an effective anti-smoking campaign in order to avert the deleterious effects of tobacco.

Materials and methods

Anambra State is one of the 36 states in Nigeria located in the South-Eastern part of the country. It has 21 local government areas and a population of 2,767,903 in the 1991 national census.

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The people are Ibos with Christianity as the dominant religion. There are few adherents to African traditional religion while there are few Muslims who are mostly non-indigenes. The main occupations of the people are farming, trading, office work and artisanry.

A cross sectional survey of young Nigerian females in secondary schools in Anambra State was carried out. A multi-stage sampling technique was used. Four local government areas (LGAs), Anaocha, Awka South, Onitsha and Nnewi North were randomly chosen out of the 21 LGAs in the state. In each chosen LGA, two girls schools were randomly selected for the conduct of the study. Eight schools were selected in 4 LGAs in the state. One hundred and fifty students in the 4th, 5th and 6th years of study were selected by simple random sampling in each of the 8 secondary schools.

The survey instrument is a close-ended questionnaire, which sought information on demographic data and smoking habits (i.e. age. marital status, place of residence, region, fathers' education, mothers' education, type of upbringing, ever smoked cigarette, regular smoking, number of sticks smoked etc). These were self administered in the classrooms and returned to the interviewers immediately after completion. One thousand one hundred and thirteen (1,113), questionnaires were returned for analysis(92% response rate). The data were analyzed by computer-using EPI INFO version 6.0. Frequency distribution of the independent and outcome variables were carried out. Chi square test was done to test association between variables. The prevalence of smoking is defined as the proportion of respondents who engage in regular smoking (of cigarette). In this study, we defined regular smoking as one or more sticks a week [11] and it is our measure of prevalence while "ever smoked" (experimental smoking) refer to report of any smoking at all.

Result

The mean age of the respondents was 16,06 ± 1.36 years (table I). Only 2.9% of them were married (table 2). Their main religious groups (and denominations) were Catholic 69.9%; Anglican 23.6%; Penticostal 5.7%, Islam 0.4% and others 0.4%.

Table I: Age distribution of Respondents

Age	Frequency	Percentage
12	9	0.8
13	14	1.3
14	90	8.1
15	242	21.7
16	400	36.0
17	218	19.6
18	96	8.6
19	17	1.5
20	27	2.4
Total	1113	100%

Mean = 16.06± 1.36

More than half (57,.4%) of the respondents were non-residential while the rest were boarders. The educational status of the respondents' fathers were: No formal education 5.2%, Primary School 12. 7%, Secondary 35.2% and tertiary school 46.1%. Similarly, the educational status of the respondents' mothers were 2.4%, 18.6%, 30.5% and 48. 5% respectively (table 3).

Table 2 :   Marital Status of the Respondents

Marital Status	Frequency	Percentage
Single	1032	92.7
Engaged	49	4.4
Married	32	2.9
Total	1113	100%

Table 3:   Educational Status of Respondents' parents

Level of Education	Father		Mother	
	No.	%	No.	%
No formal Education	58	5.2	27	2.4
Primary School	141	12.7	207	18.6
Secondary School	392	35.2	339	30.5
Tertiary	522	46.9	540	48.5
Total	1113	100	113	100

The proportion of the respondents that smoke cigarette regularly was 7.7%. Smoking was started at the mean age of 12.6±3.8 years with a median of 13 years. The number of cigarettes smoked per day had a median of 2 sticks. Marital status had significant influence on smoking. The married girls had, the highest rate of smoking (regular smoking) 22.2%, followed by the engaged 9.8% and the single 7.2% ($X^2=8.53$,df=2, $P<0.05$). Close associations with males whether as spouse or engaged appear to positively influence smoking. There was no demonstrable effect of religion on smoking (Catholics 8%; Anglicans 7.3% Pentecostals 4 % and Muslims 25%; X^2 3.22, df=3, $P>0.05$).

The non-residential students have higher rates of smoking compared to the residential. The effect of the residential status of the student showed no significant influence on "ever smoked" but showed significance for "regular smoking" ($X^2=1.65$, df= 1, $P> 0.05$ and $X^2= 10.97$, df=1,$P<0.05$ respectively table 4.

Table 4:   Relationship between place of residence and smoking habit.

Residence status	Regular smoking			Rate of smoking
	Yes	No	Total	
Residential (Boarders)	21	452	473	4.4%
Non-Residential (Day Students)	65	575	640	10.2%
	86	1027	1113	7.7%

$X^2 = 12.466$ df= 1, $P< 0.00$

The parents' educational status had no demonstrable influence on the smoking status of the students, though there was an apparent increase in the rate of smoking amongst students with low parental education. The rate of smoking varied from 11.6%, 6.2%, 8.5%, to 7.3% amongst those whose fathers had no formal education, attended primary, secondary and tertiary

schools respectively ($X^2 = 1.92$, df= 3 $P>0.05$ table 5). Similarly, smoking rate was not significantly influenced by mother's education.

Table 5: The influence of father's education on smoking prevalence

Father's Education	Regular smoking	Not smoking	Total	Rate of smoking
No formal Education	6	52	58	11.6%
Primary	9	132	141	6.2%
Secondary	33	359	392	8.5%
Tertiary	38	484	522	7.3%
Total	86	1027	1113	7.7%

$X^2 = 1.32$, df= 3, $P > 0.5$

Discussion

The smoking prevalence in young Nigerian females in the South East of Nigeria is comparatively low. The values are about one quarter of what is obtainable in other nations: The smoking prevalence in the United Kingdom is between 27.5% to 31.6% [12] while that of Italy and Spain are 23.9% and 33.4% respectively [2,14]. Similarly, the smoking prevalence in Austria is 31% [13]. In a study conducted in Spain [14], the prevalence of smoking among young people (mean age =16.18 ± 1.78) showed an ever smoked prevalence of 68.2%. In Austria [13], a similar survey showed a prevalence of 31% regular smokers, 12% former smokers, 6% were occasional smokers and 51% had never smoked. The figures for the females showed a similar pattern.

Female adolescents (13-18 years) in Turkey [15] showed a smoking prevalence of 19.7%. The rate of female adult smokers in the Netherlands [9] increased from 27% in 1960 to 40% in 1967. The mean age at commencement of smoking for our study population is lower than that obtained in London. For while our study showed a mean age of 12.6$\pm$3.8 (and a median of 13 years), the study in the UK gave a mean of 15 years [12] It is obvious from other studies that the smoking prevalence rate is yet to reach its peak in the Nigerian study group. In a study of African Americans [16] aged 20-30 years more than half of them initiated regular smoking after 19 years. This corresponds to the finding of 18-20 years peak in 1975 for Italian [2] females while the peak prevalence for Austrians [13] is reached in the age group 25-34 years.

In our study due to the skewed distribution of the number of sticks smoked per day, the median was chosen as a better measure of central tendency. The finding of a median of 2 sticks daily is close to that obtained in a Spanish study [14] of 2.77$\pm$0.168 cigarettes per day for both sexes. However, the consumption rates of Austrians of 15 years and above is 20 sticks or more daily.

Association with the opposite sex represented as spouse or engaged had a positive influence on smoking habit. This is corroborated by finding from other studies [11]. It might be that close social interactions with males who have higher smoking rates in our environment [17] negatively influenced the females to imbibe the habit. It is surprising that parental educational status did not show marked influence on smoking habit in this study. Some authors have shown that low parental

education and low economic status are associated with high smoking prevalence [4,6,12]. The reason for this might be because of the absence of serious anti tobacco campaign in Nigeria so that most of the populace including the educated ones, are not aware of the deleterious effects of smoking or lack the motivation to dissuade their children from it. As a result parents may not see the need to warn their children to keep off smoking.

The boarders were observed to smoke less than the day students in this study. The reason might be that the residential students (boarders) are more likely to be under better control than the non-residential students (day students). The former are more likely to be guided by the school rules to employ their time more usefully, be engaged in sports and other regimented activities. Besides, they have less opportunity to purchase cigarettes.

Recognizing the urgent need to nip in the bud smoking habits of young Nigerian females now that the prevalence is low, it is necessary to device strategies to control tobacco smoking. As it is already being advocated in other countries the measures to be adopted should be such that would address the peculiar nature of the females [1,18] This will include; introduction of health education in the primary and secondary school curriculum with emphasis on social habits like smoking that are deleterious to health, reinforcement of traditional norms which portray certain social habits such as smoking as vices rather than virtues. Government legislation prohibiting child and adolescent smoking, and mounting of intensive and sustained anti-smoking campaign should be pursued at all levels (i.e. Federal, State, Local government and community).

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