

# Prevalence of smoking among youth in a rural Nigerian community

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## Abstract

Studies have shown that cigarette smoking is a leading cause of morbidity and mortality worldwide. Yet there is increasing involvement of young people in smoking habit especially in developing countries. The objective of this study was to describe the prevalence of smoking among the youth of a rural Nigerian community and suggest measures for its reduction.

A cross-sectional study was conducted in Igbo-Ora, which is located about 75 kilometers northwest of Ibadan, the capital city of Oyo State. A total of 416 students (212 males and 204 females) were drawn using a two-stage sampling procedure and selecting three out of the eight existing secondary schools in the study community. Data were collected with pre-tested self-administered questionnaires.

The mean age of participants was  $19 \pm 2.6$  years (95% Confidence Interval). Prevalence rates of smoking were 9.4% (ever-smokers) and 5.1% (current smokers). Twenty-eight male students (13.2%) had ever smoked cigarettes while 11 (5.4%) females had done so ( $p = 0.006259$ ). The age at onset of smoking ranged from 8 - 25 years with a mean of  $14.7 \pm 3.8$  years [95% CI]. Mean duration of smoking was 9.8 years. Most youth (46.1%) reported smoking 1-3 sticks of cigarette per day. Reasons reported for smoking include desire to have a sense of belonging (71.8%), gain confidence of one-self (66.7%) and be stimulated when sad or depressed (56.4%), among others.

Cigarette smoking remains a problem among the youth of a rural population. Anti-smoking programmes, which focus on acquisition of social skills required for resisting pressures to initiate smoking, are suggested especially at a much earlier age in life.

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## Introduction

The psycho-social problems observed among the youth are usually a result of high-risk behaviours which are characteristic of their lifestyles. Of such behaviours, cigarette smoking is a common habit. Evidence abounds in the literature implicating cigarette smoking as an important cause of morbidity and mortality worldwide. Estimates by the World Health Organization (WHO) showed that currently, tobacco accounts for over 4 million deaths each year. This is projected to rise to about 10 million deaths per year by 2030,<sup>1</sup> and 70% of those deaths will occur in developing countries.<sup>2</sup> Despite this abundant evidence, smoking remains an increasing high-risk behaviour and a health and economic problem, especially among the youth.<sup>3,4</sup>

The first attempt at smoking cigarette had been reported to occur as early as age below 10 years among some pupils, while still in the elementary school.<sup>5,6</sup> Generally, smoking commences and becomes established among the youth before the age of 16 years.<sup>5,7-9</sup> The Global Youth Tobacco Surveys (GYTS) found that between 14.3% and 46.7% of students aged 13 - 15 years in Ghana, Kenya, Malawi, Zimbabwe and South Africa had ever-smoked cigarettes.<sup>4</sup> Other studies reported similar findings among African youth of older age group.<sup>5,8,9,10</sup> However, previous studies conducted among Nigerian youth before GYTS reported low smoking prevalence rates of 3% - 4.4%.<sup>11,12</sup> These estimates were much lower than the current averages of 18.8% ever-smokers and 9.1% current smokers reported for Nigeria in the GYTS of 2001.<sup>3</sup> The Nigerian GYTS findings, though provided current 'national' estimates, were however restricted to a narrow and younger age group and therefore provided no recent information on smoking patterns among youth in the older age group. In addition, the survey was carried out in one of the six geo-political zones (south-south) of Nigeria, and therefore might not

reflect the pattern of cigarette smoking among the youth in the remaining five zones. It is therefore desirable that a similar and comparative survey be conducted among youth of a broad age group in other geo-political zones of the country. Nevertheless, the GYTS findings portrayed a situation where either smoking has been hitherto under-reported or there has been a steady rise in smoking habit among Nigerian youth over the years. This will, therefore, require prompt and appropriate intervention. This paper describes the prevalence of cigarette smoking among the in-school youth of a rural community in southwestern Nigeria, and provides information on the magnitude of the burden in a developing country.

### Materials and Methods

The study was carried out in Igbo-Ora, a rural community in Oyo state, Nigeria with an estimated population of about 65,000. Most residents of the community belong to the *Yoruba ethnic* group. There are eight public secondary schools in the community; each is a mixed school and has an average student population of 600.

The study was cross-sectional in design. It was carried out among senior secondary school (SSS) students, who constituted more than two-thirds of the student population. A two-stage sampling process was carried out as follows: Three schools were randomly selected by balloting from the list of existing eight schools. Written permissions to carry out the study were obtained from the schools' authorities and parents-teachers' associations. Ethical approval had been previously obtained from the institutional review committee. A list of names of 1,260 students in all the arms of the senior secondary classes (SSC I-SSC III) in the selected three schools was obtained from the class registers and respondents were selected by a systematic sampling technique. Out of every three students, one was selected and requested to complete a self-administered semi-structured questionnaire, which was designed, developed and pre-tested among senior students of another secondary school in a neighbouring rural community. An average of 138 students was thus selected from each school and a total of 416 students were selected. In each school, all the selected students were assembled as a group, in a large hall to complete the questionnaire. The purpose of the study was explained to the study participants and they were also assured of the confidentiality of any volunteered information before completing the questionnaire. In addition, the participants were informed that participation in

the study was voluntary and that they could withdraw from the study if they felt uncomfortable with information that was being sought. A verbal informed consent was thus obtained before each student completed a questionnaire by him- or herself. Necessary clarifications were made to anyone of them who sought for additional information on any part of the questionnaire. The questionnaire probed into the following issues: socio-demographic characteristics, smoking history and reasons for smoking and quitting as applicable. Data entry and analysis were done with Epi-Info version 6 software.

A major limitation of the study is under-reporting. Under-reporting of smoking history among the participants could not be ruled out as it is considered socially undesirable for young people to smoke in the study community. The self-report nature of the survey also created opportunity for under-reporting to occur.

### Results

Four hundred and sixteen students, 212 (51%) males and 204 (49%) females, participated in the study. Out of these, seven students (1.7%) were 10-14 years old, 240 (57.7%) were 15-19 years old and 157 (37.7%) were 20-24 years old (Table 1). A large proportion of the students, 397 (95.4%) were aged between 15 and 24 years. The study participants mean age was  $19 \pm 2.6$  years (95% Confidence Interval).

Tables 1 and 2 showed that out of the 416 students, 39 (9.4%) had ever-smoked cigarettes while 21 (5.1%) were current smokers. The age at onset of smoking ranged from 8 to 25 years with a mean of  $14.7 \pm 3.8$  years (95% Confidence Interval). Twenty-six (66.7%) commenced smoking before the age of 16 years while 13 (33.3%) started at an older age. Ever-smokers who were 15-19 years old, 22 (9.2%), smoked significantly more than those in other age groups ( $p = 0.00675226$ ). Significantly more boys, 28 (13.2%), had ever-smoked cigarettes than girls, 11 (5.4%) ( $p = 0.006259$ ). About half of ever-smokers, 20 (51.3%), were in SSS III. The mean duration of smoking was 9.8 years. Eighteen (46.1%) ever-smokers reported smoking 1-3 sticks of cigarette per day, 10 (25.6%) smoked 5-8 sticks per day and four (10.3%) smoked up to 10 sticks per day. Seven (18%) did not respond to the question. Fifteen (38.5%) smoked daily while 12 (30.8%) smoked every other day or when the opportunity arose. The reasons which were given for smoking by the ever-smoker group are presented in Table 3. The most frequently reported

reasons were desire to have a sense of belonging (71.8%), gain confidence of one-self (66.7%) and be stimulated when sad or depressed (56.4%), among others.

Out of the 39 who had ever-smoked, 18 (46.1%) reported that they had stopped smoking (Table 2). This includes those who reportedly stopped smoking as recently as one month preceding this study. Only six (33.3%) of the quitters gave reasons for their action; these include the awareness that smoking is dangerous to their health mentioned by three quitters (16.7%), and the perception that smoking was responsible for some respiratory symptoms such as cough that they experienced before quitting by another three (16.7%).

### Discussion, conclusion and recommendations

Cigarette smoking is a high-risk habit among a segment of the secondary school students studied. A low prevalence rate of 9.4% ever-smoked was obtained in this study compared to 14.3% - 46.7% reported among similar age groups elsewhere in Nigeria and other African countries.<sup>3-5,8-10</sup>

It should however be noted that the prevalence of smoking obtained in this study, like in the previous studies, was based on a self-report assessment of smoking history among the participants in rural schools and therefore under reporting could not be ruled out. In Nigeria, until recently, cigarette smoking seemed to be a socially acceptable lifestyle, especially among the adults<sup>6</sup>. Society and school authorities however frown at the practice of smoking among elementary and

**Table 1: Distribution of respondents by sex, age, class and smoking status**

Socio-demographic characteristics	All subjects (416)	Had ever-smoked cigarette (39)	Never-smoked cigarette (377)	X <sup>2</sup> value	p-value
<b>Sex</b>	<b>No. (%)</b>	<b>No. (%)</b>	<b>No. (%)</b>		
Male	212 (51)	28 (13.2)	184 (86.8)	7.47	
Female	204 (49)	11 (5.4)	193 (94.6)	0.006259	
<b>Age (years)</b>					
10-14	7 (1.7)	2 (28.6)	5 (71.4)	12.19	
15-19	240 (57.7)	22 (9.2)	218 (91.8)	0.00675226	
20-24	157 (37.7)	11 (7)	146 (93)		
25-29	12 (2.9)	4 (33.3)	8 (66.7)		
<b>Class</b>					
SSC I	137 (32.9)	11 (8)	126 (92)	5.10	
SSC II	132 (31.7)	8 (6.1)	124 (93.9)	0.07826669	
SSC III	147 (35.4)	20 (13.6)	127 (86.4)		

**Table 2: Distribution of ever-smokers by age, sex, class and current smoking status**

Socio-demographic characteristics	Had ever-smoked cigarette (39)	Currently smoking (21)	Quit smoking (18)	X <sup>2</sup> value	p-value
<b>Sex</b>	<b>No. (%)</b>	<b>No. (%)</b>	<b>No. (%)</b>		
Male	28 (71.8)	17 (60.7)	11 (39.3)	1.03	
Female	11 (28.2)	4 (36.4)	7 (63.6)	0.3097293	
<b>Age (years)</b>					
10-14	2 (5.1)	1 (50)	1 (50)		
15-19	22 (56.4)	10 (45.5)	12 (54.5)		
20-24	11 (28.2)	6 (54.5)	5 (45.5)		
25-29	4 (10.3)	4 (100)	0 (0)		
<b>Class</b>					
SSC I	11 (28.2)	8 (72.7)	3 (27.3)	2.26	
SSC II	8 (20.5)	4 (50)	4 (50)	0.32379279	
SSC III	20 (51.3)	9 (45)	11 (55)		

**Table 3: Distribution of ever-smokers sex, age and reasons for smoking**

Socio-demographic characteristics	Had ever-smoked cigarette N = 39	Reasons for smoking* (N = 39)				
		To have a sense of belonging n = 28	To gain confidence of myself n = 26	To be stimulated when sad or depressed n = 22	To be able to talk freely with friends of opposite sex n = 18	To relieve pressures N = 18
<b>Sex</b>	<b>No. (%)</b>	<b>No. (%)</b>	<b>No. (%)</b>	<b>No. (%)</b>	<b>No. (%)</b>	<b>No. (%)</b>
Male	28 (71.8)	19 (67.9)	20 (76.9)	12 (54.5)	14 (77.8)	11 (61.1)
Female	11 (28.2)	9 (32.1)	6 (23.1)	10 (45.5)	4 (22.2)	7 (38.9)
		$\chi^2 = 0.12$ p = 0.7282904	$\chi^2 = 0.03$ p = 0.8627825	$\chi^2 = 1.85$ p = 0.1733303	$\chi^2 = 0.02$ p = 0.8781923	$\chi^2 = 0.25$ p = 0.6170076
<b>Age (years)</b>						
10-14	2 (5.1)	2 (7.1)	0 (0)	1 (4.5)	2 (11.2)	2 (11.1)
15-19	22 (56.4)	16 (57.2)	13 (50)	9 (40.9)	8 (44.4)	6 (33.3)
20-24	11 (28.2)	9 (32.1)	10 (38.5)	10 (45.5)	8 (44.4)	9 (50)
25-29	4 (10.3)	1 (3.6)	3 (11.5)	2 (9.1)	0 (0)	1 (5.6)

\*Multiple responses

secondary school students. Some schools impose one penalty or the other on students caught smoking in or around the school premises. Consequently many of the students who participated in this survey might have lied that they have never smoked or that they have stopped smoking in spite of assurances that their responses would be kept confidential. This limitation, though considered important, could not be circumvented because carbon monoxide monitor, which should have been used to validate participants' responses, was beyond the scope of this study.

However, the smoking prevalence of 9.4% obtained in this study showed more than 100% increase above the available self-reported smoking data of 3 - 4.4% found among the youth in the study area where the sample was drawn.<sup>11,12</sup> Smoking may therefore be regarded as a rapidly increasing habit among the study population. This trend has far reaching implications. First, the participants who ever-smoked but have stopped could relapse as it is usual with many smokers who attempt to quit. Second, many of the participants are teenagers. Children in their teens are known to be impressionistic and so are easily influenced by others, especially those perceived as role models. Non-smoking role models could, therefore, be invited to participate in anti-smoking programmes planned to effectively reduce the prevalence of smoking among contemporaries of the study population.

About two-thirds, 26 (66.7%), of the ever-smokers in this study commenced cigarette smoking at an age below 16 years (8 to 25 years),

with the boys significantly constituting the majority. These findings are consistent with those obtained in other studies.<sup>5,9</sup> Similarly, their mean age at onset of smoking of 14.7 years is comparable to those reported (13.4-14.8 years) among African youth in other studies.<sup>7,9</sup> This suggests a critical age period to be considered for the institutionalization of appropriate anti-smoking educational interventions among in-school youth especially of rural settings. Such interventions should be youth-friendly and targeted at the acquisition of social skills required for resisting pressures to initiate smoking.

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