Cigarette smoking habits among adolescents in northeast Nigeria

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Abstract

Tobacco smoking is a growing public health problem in the developing world. The health hazards of smoking are well documented, and prevention of smoking has been described as the single greatest opportunity for preventing noncommunicable disease in the world today. A cross-sectional survey was carried out to determine the cigarette smoking habits among adolescents in a rural setting in northeast Nigeria. One hundred and seventy-one (171) adolescents aged 12 to 17 were randomly selected from four districts of Yola south Local Government Area of Adamawa State. They responded to a modified version of the standard questionnaire recommended for surveying smoking habits in young people. Of 109 males, 44 (40%) and 62 females fourteen (23%) were current light smokers; with over 85% of all smokers consuming fewer than 10 cigarettes a day. The prevalence of smoking in this study was 33.9%. Over half of current smokers and ex-smokers started smoking between the ages of 13 and 15 years. The largest group of male and female smokers were influenced to start smoking by the relative influence of one or both parents, siblings, or friends, and only 25% of males and 21.4% of females were influenced by advertisements. Most respondents continued to smoke even when they were aware of the health hazards of smoking. Anti-tobacco education and awareness should be adopted in the curriculum of schools and colleges. All forms of tobacco advertising and promotional activities should be banned in Nigeria, and parents should be encouraged to adopt more responsible attitudes toward smoking in the home.

Introduction

Smoking is a health risk, a pattern of behaviour usually acquired during adolescence.[1] In Western countries, 13% to 35% of adolescents smoke.[1] Youth is a time of experimentation and it is estimated that everyday between 3000 and 5000 young people try their first cigarette.[2] Tobacco use in adolescence is associated with a range of health-compromising behaviours, including being involved in fights, carrying weapons, engaging in higher-risk sexual behaviour and using alcohol and other drugs.[3] Smoking can be viewed as a rite of passage from childhood to adulthood. An adolescent's first cigarette is usually obtained from a friend or family member.[4] One third of adolescents who experiment with cigarettes will become daily smokers.[5]

The most recent National Youth Tobacco Survey conducted by the United States Centre for Disease Control and Prevention found 28% of high school and 12% of middle-school students reported tobacco use.[6] A similar survey conducted on secondary school students in Cross River State, Nigeria, found that 9% currently smoke cigarettes (9.7% males and 5.7% females).[7]

The awareness of some of the dangers posed by smoking is low among black and white South Africans.[8] The knowledge about the risks of cigarette smoking among adult patients in Borno State of Nigeria was low, except for the common complications of lung cancer and bronchitis.[9] In a study from Japan, a majority of participants of a seminar were aware that smoking was injurious to health and causally related to lung cancer, but many were unaware that smoking increased cardiovascular and other lung diseases.[10]

The earlier a smoker quits smoking the less the hazard, as evidence suggests that much of the projected mortality from smoking can be prevented by stopping.[11] Little is known about smoking behaviour, awareness of health hazards, and initiation of smoking among adolescents from this part of the country. We therefore decided to carry out a cross-sectional survey on the prevalence and factors influencing the onset of cigarette smoking among adolescents in Yola south Local Government Area of Adamawa State.

Materials and methods

A cross-sectional study was carried out in Yola south Local Government Area (LGA) of Adamawa state, northeast Nigeria. The target population was adolescents aged 12 to 17 years. Employing the sample size formula $N = z^2 \times p \times q / d^2$ for single proportion,[12] a 95% confidence level, a prevalence rate of 12.8%,[9] and a 5% allowable margin of error, a sample size of 171 was arrived at.

A two-stage sample design was used to produce representative data for the Local Government Area, and four districts of the Local Government were randomly selected. People who appeared to be in the target age range of 12 to 17 years were randomly selected in the

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market area. Trained field workers administered a structured questionnaire containing validated questions recommended for use in young people to each respondent.[13] Some changes were made to account for cultural differences. It was pre-tested on 20 randomly selected individuals in the first week, and some questions rephrased before the questionnaires were formally administered. Interviews were offered in English, Hausa, or Fulani languages depending on the respondent's choice. Some preferred a combination of two languages, which ensured a better understanding of the questions and enabled respondents to answer easily.

The first part of the questionnaire contained demographic data and the second part various questions about smoking behaviour and attitude. The definition of 'current smoker' has varied in different studies. Current smokers were defined as persons who had smoked more than 100 cigarettes in their lifetime and were still smoking at the time of the survey.[14] An ex-smoker was one who had tried smoking, or who had previously smoked, but was not a current smoker. Those who had never smoked or smoked fewer than 100 cigarettes in their lifetimes were defined as non-smokers. A current light smoker smoked less than a pack per day, while a current heavy smoker smoked one or more packs per day.[15]

The Statistical Package for the Social Sciences (SPSS) (Release 11.0) was used for verified data entry and analysis. Frequencies, including percentages were calculated for categorical data and these variables were compared by Fisher exact tests. Continuous data were tested by independent *t*-test for age and mean daily consumption of cigarettes smoked. *P* value less than 0.05 was considered as statistically significant. The Ethical and Research committee of the Federal Medical Centre, Yola Nigeria, approved the study. Written informed consent was obtained from each respondent.

Results

Of the 171 subjects, 109 (63.7%) were males and 62 (36.3%) were females. Table 1 shows the summary of smoking status of the adolescents. The overall prevalence of smoking was 58 (33.9%): 44 (40.4%) in males and fourteen (22.6%) in females. The mean age of males was 14.7±1.6 years and 14.4±1.7 years in females. T-test analysis revealed no significant difference in the mean age between the sexes (p=0.361). All participants were single black Nigerians, comprising 79 (46.2%) Fulanis, 35 (20.5%) Hausas, 29 (16.9%) Higgis, and 28 (16.4%) Marghis. Smoking was more prevalent within age group 15–17 in both sexes, and in both age groups, smoking prevalence was higher in males. Male adolescents in tertiary institutions had the highest prevalence of 40.9% and male illiterate (34.1%) were next more likely to smoke cigarettes. In general, statistically significant difference was observed between both genders among those in tertiary institutions (see Table 2).

Table1 Overall prevalence of smoking among adolescents in northeast Nigeria

Subjects	Male Number	%	Female Number	%	Total Number	%
Current smokers	44	40.4	14	22.6	58	33.9
Ex-smokers	18	16.5	10	16.1	28	16.4
Non-smokers	47	43.1	38	61.3	85	49.7
Total	109	100	62	100	171	100

Table 2 Prevalence of smoking according to educational attainment

Educational attainment	Male Number	%	Female Number	%	*p* value
Illiterate	15	34.1	3	21.4	0.135
Koranic	2	4.5	0	0.0	1.000*
Primary	5	11.4	2	14.3	1.000*
Secondary	4	9.1	4	28.6	0.689*
Tertiary	18	40.9	5	35.7	0.032†
Total	44	100	14	100	

*Fisher exact (2 tailed *p* value)
†Yates corrected *p* value

The perception of the health hazards of smoking was not statistically significant between smokers and non-smokers (p=0.584) (see Table 3).

Table 3 Perception of health hazards of smoking

	Smoker n (%)	Non-smokers n (%)	Test statistics	*p* value*
Agreed	39 (67.2)	82 (72.6)	0.30	0.584
Disagreed	19 (32.8)	31 (27.4)		

• Chi-square test is applied

Table 4 illustrates the reasons given by the adolescents for smoking. A small proportion of the smokers (9.1%) did so for 'no reason' The largest group of male and female smokers were influenced to start smoking by relative influence of one or both parents, siblings or friends, and only 25% of males and 21.4% of females were influenced by advertisements. All the participants

Table 4 Reasons for smoking

	Male Number	%	Female Number	%
Influence of friends, one or both parents	19	43.7	7	50
Personal reasons	10	22.7	4	28.6
Influence of tobacco company advertisement	11	25	3	21.4
No reason	4	9.5	0	0
Total	44	100	14	100

χ^2 (d.f. = 3) = 1.59; p= 0.661

were light smokers with an average daily consumption of 7.8±4.3 cigarettes. Seventy four percent of current smokers smoked 5.5±1.5 cigarettes a day compared with 26% who smoked 14.5±2.5 a day.

The majority of current smokers (71%) started smoking between 13 and 15 years. Of 28 ex-smokers, 60.7% stopped smoking for health reasons, 14.3% because they wanted to and 10.7% as a result of social pressure from parents or religious authorities; only four adolescents gave up for financial reasons. Seventy percent agreed that smoking was dangerous to the smoker's health, but were ignorant of effects of second-hand smoke (see Table 5). Sixty-two percent of respondents identified smoking as a cause of respiratory disease but only 57 (33.3%) thought it could cause cancer. Only 25 (14.6%) mentioned smoking as a risk factor for heart disease, and 123 (71.9%) did not recognise that smoking increases risk of miscarriages, infant death, and other complications in pregnant women.

Table 5 Knowledge about the dangers of cigarette smokin

Questions	Percentage with positive response
Smoking harmful to smoker's health?	70.8
Smoking harmful to non-smoker's health?	24.6
Smoking causes heart disease?	14.6
Smoking causes respiratory disease?	70.8
Smoking causes cancer of lung?	33.3
Relationship between mothers who smoke and low birth weight?	28.1

Eighteen (31%) of smokers want to quit smoking. Ten (17.2%) had tried to quit during the past year without success. It is of interest that 43.1% and 28.6% of male and female smokers had experienced some unpleasant effects of smoking. These included cough, shortness of breath, chest pain, and abdominal discomfort. Despite these symptoms, 57.9% of male smokers who experienced these unpleasant effects would not be deterred from smoking. Ninety-two (53.8%) agreed that smoking should be banned in public places and transport. Similarly, 56.9% of smokers agreed with the suggestion warning about the adverse effects of smoking should be written on cigarette packets. One hundred and six respondents (62%) prefer mass media as the most effective means of dissuading cigarette smoking in adolescents.

Discussion

The prevalence of current smoking in our survey was 33.4% overall, 40.4% in male and 22.6% in female adolescents. This is much higher than the previous reported study in Cross River Nigeria. This reason for this difference may be that in our study parental and peer effect had great influence on the children with respect to taking up smoking habits. This fairly large percentage consisted entirely of light smokers, with 78% consuming fewer than 10 cigarettes a day. This is encouraging in a way, because it may still be feasible to convince a good proportion of them to stop smoking or to cut down on the number of cigarettes.

Although there was a difference in the number of males and females, in absolute figures the result of our study is lower than a prevalence of 35.92% of 451 male adolescent students reported by Naing and colleagues.[16] In a survey conducted in 2001, the Global Youth Tobacco Survey (GYTS) reported a prevalence of 9.7% of male and 5.7% of female secondary school students smoking cigarettes.[7] Karim and Al-Yousaf in their survey in 2001 showed that 20% of high school students in Addis Ababa were current smokers and 16% were non-smokers.[17] The average starting age for current smokers in their study was 13.9 years (13–15 years). Over 60% of these students smoked fewer than 10 cigarettes per day. Other studies,[18–20] have demonstrated a higher prevalence in males than females.

Women in developing countries tend to smoke less, and this may be due to socio-cultural or religious reasons.[21] Accordingly, the relatively low smoking rates among our female teenage participants may simply be a reflection of a cultural taboo, and may be an underestimate of the true female prevalence, since many young females may be reluctant to admit to smoking.

In China,[22] 15.9% of 6674 adolescents attending school (25.7% of boys, 5.4% of girls) had ever smoked. Only 0.3% was regular smokers. Of the ever smokers, 41.9% had smoked before 10 years and 7.9% before 5 years of age. Parental smoking was the strongest predictor of smoking. The very low prevalence of regular smoking found in this age group suggests that prevention programmes in schools may be beneficial. Teenagers do not make decisions to smoke in a vacuum, the uptake is a combination of factors. The reasons given for smoking in general, are similar to those obtained in other surveys.

The key factors in our survey for increased adolescent smoking included influence of friends, siblings, or parents who smoke. In accordance with Ethiopian study,[17] having one or both parents who are smokers is associated with the initiation of adolescent smoking in both age groups. Similarly, in our study and the Ethiopian study the influence of friends who are smoking and personal reasons, possibly referred to as 'environmental' play a major role. Adolescents are increasingly being exposed to pro-tobacco advertisements in the media and billboards. Glorification of smoking in films has a potential to influence smoking initiation among the young.[23]

Our study revealed that adolescents between ages of 15 and 17 years had a higher smoking prevalence (63.6% in males and 71.4% in females), which is surprising considering the relatively good awareness of the harmful effects of smoking, particularly the respiratory complications. One hundred and twenty-one (71%) respondents agreed that smoking affected the health of the smoker, but were unaware of the second-hand effects. They were aware that it could lead to respiratory disease but many did

not associate it with cardiovascular disease.

Conclusions that can be drawn from this study are limited by the small sample size and there being more males than females; therefore, our findings may not be representative of the entire state. Our study revealed that male and female adolescents in tertiary institutions of learning had the highest smoking prevalence (40.9% and 35.7%, respectively), which is similar to a high prevalence reported by Awotedu and colleagues in tertiary institutions of learning in Eastern Cape Province of South Africa.[24] Bener reported a prevalence of 19% of 1486 adolescents in a tertiary institution in Abu-Dhabi.[25] Illiterate males and females who attained primary education only ranked second highest, which is a result of lack of awareness of the harmful effects of smoking. Educational attainments seems to be a moderating influence on perceived harmfulness as some studies have been shown that regular smoking decreases with level of education.

Once nicotine dependence is initiated in adolescence, it tends to persist into adult years. Moreover, the younger the age at which smoking is initiated, the harder it seems to quit later.[5] So it seems a lot easier to start smoking than it is to stop. The problems associated with smoking are multifaceted and no single control measure will resolve these problems on a wide scale. Strategies that have been effective in developed countries could also be adopted in developing world. Anti-tobacco education and awareness should be made part of the curriculum in schools and colleges. Legislative restrictions on smoking in enclosed public places need to be enforced as agreed by 59% of our respondents, because of the health consequences of passive smoking.

As children have easy access to tobacco products in developing countries, laws need to be implemented prohibiting the sale of cigarettes to them (as recommended by 49% of respondents). The cost of cigarettes may be relevant, although very few ex-smokers gave this as a reason for giving up. There is considerable evidence that tobacco advertising and promotion encourages adolescents to smoke[26,27] and that increasing the price of cigarettes discourages young people from starting to smoke. Increasing the tax on tobacco products has been shown to decrease cigarette use in many countries. The revenue generated through taxes can be spent on anti-smoking campaigns. Primary smoking prevention in the paediatric and adolescent age groups may be the most effective programme. Young people who have been trained to resist social pressures, who understand the health consequences of smoking, and who appreciate the difficulty of quitting are less likely to start smoking. In addition, tobacco companies should not be allowed to sponsor sporting events in the country.

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