

Cigarette smoking habits among adolescents in northeast Nigeria

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Citation

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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. Between June and August 2006, a cross-sectional study involving 125 adolescents' ages 12 to 17 years randomly selected from four districts of Yola south Local Government Area of Adamawa State was carried out. They responded to a modified version of the standard World Health Organization questionnaire for surveying smoking habits. Of 89 males 32 (36%) and of 36 females nine (25%) were current light smokers; with over 85% of all smokers consumed less than 10 cigarettes a day. The prevalence of smoking in this study was 32.8%. 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 relative influence of one or both parents, siblings or friends, and only 18.7% of males and 22.2% 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 adolescence¹. In Western countries, 13% to 35% of adolescents smoke¹. Youth is a time of experimentation and it is estimated that everyday between three and five thousand youth try their first cigarette². 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. 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 member³. One third of adolescents who experiment with cigarettes will become daily smokers⁴. 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 use⁵. A similar survey conducted on secondary school students in Cross River State of Nigeria, found that 9% currently smoke cigarette (9.7% males and 5.7% females).⁶ The awareness of some of the dangers posed by smoking is low among Africans in general.

In a Nigerian study⁷, the knowledge about the risks of cigarette smoking among adult patients in Northeast Nigeria was low except for the common complications of lung cancer and bronchitis. In a study from Japan⁸, 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. Cigarette smoking damages health because of the constituents of tobacco smoke. Cigarette smoke contains over 4,700 chemical compounds of which about 60 are carcinogenic, and cigarette smokers face continual exposure to them for years. The earlier a smoker quits smoking the less the hazards, as evidence suggests that much of the projected mortality from smoking can be prevented by quitting⁹. 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

The cross-sectional study was carried out in Yola south Local Government Area (LGA) of Adamawa state, northeast Nigeria. The majority come from Fulani and Hausa, with several ethnic minorities. The target population was adolescents of this LGA in northeast geopolitical zone of Nigeria. A minimum sample size of 125 was calculated using a prevalence rate of 9% of current cigarette smokers among youths in Nigerian study⁷ involving secondary school pupils. 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 market area. All eligible participants were informed that participation was voluntary. A structured questionnaire for surveying smoking prevalence and behaviour, with most of the items taken from previous studies¹⁰ was administered to each respondent by trained field workers between June and August 2006. It was pretested on 20 randomly selected individuals in the first week, and some questions rephrased before the questionnaires were formally administered. The first part of the questionnaire contained demographic data and the second part contained 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 lifetimes and still smoke at the time of the survey¹¹. Ex-smokers were persons who had smoked more than 100 cigarettes in their lifetime but stopped at least one year before enrolment in the study. Those who had never smoked or smoked fewer than 100 cigarettes in their lifetimes were defined as non-smokers. A current light smoker has smoked less than a pack per day, while a current heavy smoker has smoked one or more packs per day¹². It took 15 to 20 minutes to complete. The Statistical Package for the Social Sciences (SPSS) (Release 11.0) was used for data entry and analysis. Frequencies, including percentages were calculated for categorical data and these variables were compared by chi-square tests. P value less than 0.05 was considered as statistically significant. All p values were two sided.

RESULTS

Of the 125 subjects, 89 (71.2%) were males and 36 (28.8%) were females. Table 1 shows the summary of smoking status of the adolescents. The overall prevalence of smoking was 41 (32.8%) being 32 (36%) in males and nine (25%) in females. The mean age of males was 14.9 years (SD: 1.6

years) and 14.4 years (SD: 1.7 years) in females. T-test analysis revealed no significant difference in the mean age between the sexes ($p = 0.210$). All participants were single black Nigerians, comprising 63 (50.4%) Fulanis, 24 (19.2%) Hausas, 20 (16%) Higgis, and 18 (14.4) Marghis. Smoking was more prevalent within age group 15-17 in both sexes, and in both age groups, smoking prevalence was higher in males (Table 2). Table 3 compares the prevalence of smoking between males and females according to educational attainment. Male adolescents in tertiary institutions had the highest prevalence of 43.8% and male illiterate (31.3%) were next more likely to smoke cigarettes. However, there was no statistically significant difference between both genders according to educational attainment. Table 4 illustrates the reasons given by the adolescents for smoking. A small proportion of the smokers (12.5%) 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 18.7% of males and 22.2% of females were influenced by advertisements. All current smokers and ex-smokers smoked commercial brands of tobacco (Benson and Hedges or Rothmans). All the participants were light smokers with an average daily consumption of eight cigarettes. Seventy eight percent of current smokers smoked less than 10 cigarettes a day compared with 22% who smoked more than 10 a day. The majority of current smokers (60%) started smoking between 13 and 15 years. Ex-smokers had stopped smoking on average 12 months before the survey. Of 18 ex-smokers 50% stopped smoking for health reasons, 22.2% because they wanted to and 11.1% as a result of social pressure from parents or religious authorities; only 3 adolescents gave up for financial reasons. Seventy-one percent agreed that smoking was dangerous to the smoker's health, but were ignorant of effects of second hand smoke. Seventy-six percent of respondents identified smoking as a cause of respiratory disease but only 54 (43.2%) thought it could cause cancer. Only 17 (13.6%) mentioned smoking as a risk factor for heart disease, and 102 (81.6%) did not recognise that smoking increases risk of miscarriages, infant death, and other complications in pregnant women. The awareness of the other risks of cigarette smoking was much less. The answers given by smokers and non-smokers were compared and there was no significant difference. Seven (17.1%) of smokers want to quit smoking. Three (7.3%) have tried to quit during the past year without success. It is of interest that 40.6% and 22.2% 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, 53.8% of male smokers who experienced these unpleasant effects would not be deterred from smoking. Seventy-one (56.8%) agreed that smoking should be banned in public places and transport. Similarly, 60.9% of smokers agreed with the suggestion warning about the adverse effects of smoking should be written on cigarette packets. More than half of the respondents prefer mass media as the most effective means of dissuading cigarette smoking in adolescents.

Figure 1

Table 1. Overall prevalence of smoking among adolescents in northeast Nigeria

| Subjects | Male | | Female | | Total | |
|-----------------|-----------|------------|-----------|------------|------------|------------|
| | No. | % | No | % | N | % |
| Current smokers | 32 | 36 | 9 | 25 | 41 | 32.8 |
| Ex-smokers | 16 | 17.9 | 2 | 5.6 | 18 | 14.4 |
| Non-smokers | 41 | 46.1 | 25 | 69.4 | 66 | 52.8 |
| Total | 89 | 100 | 36 | 100 | 125 | 100 |

Figure 2

Table 2. Smoking prevalence in various age groups

| Age group (years) | Male | | Female | |
|-------------------|-----------|------------|----------|------------|
| | No | % | No | % |
| 12-14 | 12 | 37.5 | 2 | 22.2 |
| 15-17 | 20 | 62.5 | 7 | 77.8 |
| Total | 32 | 100 | 9 | 100 |

$\chi^2 = (df = 1) = 0.21$; Fisher exact $p = 0.692$

Figure 3

Table 3. Prevalence of smoking according to educational attainment

| Educational attainment | Male | | Female | |
|------------------------|-----------|------------|----------|------------|
| | No | % | No | % |
| Illiterate | 10 | 31.3 | 2 | 22.2 |
| Koranic | 2 | 6.2 | 0 | 0 |
| Primary | 4 | 12.5 | 3 | 33.3 |
| Secondary | 2 | 6.2 | 1 | 11.2 |
| Tertiary | 14 | 43.8 | 3 | 33.3 |
| Total | 32 | 100 | 9 | 100 |

$\chi^2 = (d.f. = 4) = 2.95$; $p = 0.565$

Figure 4

Table 4. Reasons for smoking

| | Male | | Female | |
|--|-----------|------------|----------|------------|
| | No | % | No | % |
| Influence of friends, one or both parents | 15 | 46.9 | 6 | 66.7 |
| Personal reasons | 7 | 21.9 | 1 | 11.1 |
| Influence of tobacco company advertisement | 6 | 18.7 | 2 | 22.2 |
| No reason | 4 | 12.5 | 0 | 0 |
| Total | 32 | 100 | 9 | 100 |

$\chi^2 (d.f. = 3) = 2.12$; $p = 0.547$

QUESTIONNAIRE

We are carrying out a survey on prevalence and factors influencing the onset of cigarette smoking among adolescents' ages 12 to 17 years in Yola south Local Government Area of Adamawa State of Nigeria. We should be grateful if you would complete this questionnaire, being as honest as possible. Please tick your answers.

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Demographic data

1. Age 12 13 14 15 16 17
2. Sex male female
3. Nationality Nigerian Non-Nigerian
4. Tribe Fulani Hausa Higgi Marghi Other ...
5. Educational attainment no formal education koranic primary secondary tertiary

Smoking behaviour and attitude

6 Have you ever smoked cigarette? If no, go to question 16.

Yes no

7. Source of first cigarette friends siblings parents stalk

8. Do you still smoke yes no

9. Are you a causal or regular smoker?

Causal regular

10. On average, how many cigarettes a day do you smoke?

1-5 6-10 more than 10

11. How long have you been smoking?

1-12 months 1-5 years more than 5 years

12. What are your reasons for smoking friends/peer group parents smokers cigarette adverts to reduce stress for pleasure other

13. If you had less money, would you reduce the number of cigarettes you smoke?

Yes no

14. What do you believe makes people smoke?

Social acceptance stress peer group pleasure advertisement

15. Would you want to stop smoking? Yes no

16. If you are an ex-smoker, what was the reason for stopping smoking?

Health religion parent finance all of above other

17. How long have you stopped smoking?.....

18. Are you aware of the dangers of smoking? yes no

19. If yes, what was your source of information?

Doctor media friends other

20. Have you developed any unpleasant symptoms? Yes no

21. If yes, which of the following did you experience?

Dry cough cough with sputum shortness of breath chest pain stomach pain bad breath all of the above

22. How long have these been present?

Less than a month more than one month

23. Are you aware of any dangers to health from cigarette smoking?

Yes no

24. If yes, which of the following risks of smoking do you know?

Heart attack hypertension respiratory disease small baby cancer of the lung delayed wound healing

25. Which will deter you smoking?

Heart attack hypertension respiratory disease small baby cancer delayed wound healing

26. How should information about the dangers of smoking on health be made available to the people in your area?

Health education, posters and lectures mass propaganda via radio, television, newspaper

27. Have you ever tried quitting smoking?

Yes and succeeded yes and failed no

28. Have you ever sought help? Yes no

29. If yes, where

Hospital traditional healer

30. Why don't you smoke?

Parental objection religious or cultural beliefs bad breath lack of money self discipline all of above other

31. What aspect of smoking do you consider most disadvantageous?

Finance social stigma health

32. What do you think should be done to discourage smoking?

Increase price of cigarettes ban sales of cigarettes restrict smoking in public places and transports ban

advertisements on cigarettes [] adverse effects of smoking written on cigarette packets []

33. Is passive smoking harmful to the body Yes [] No []

DISCUSSION

The prevalence of current smoking in our survey was 32.8% overall, 36% in male and 25% in female adolescents in Yola south Local Government Area of northeast Nigeria. This fairly large percentage consisted entirely of light smokers, with 78% consuming less 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. There is paucity of data on smoking and predictors of smoking among school going adolescents in most of sub-Saharan Africa. In an earlier 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 currently smoke cigarettes⁶. 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.¹³ The average starting age for current smokers in their study was 13.8 years (13years-15years). Over 60% of these students smoked less than 10 cigarettes per day. The findings in this survey also showed that over half of current smokers and ex-smokers started smoking between the ages of 13 and 15 years. Other studies¹⁴⁻¹⁶, have been 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.¹⁷ 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,¹⁸ 15.9% of 6674 adolescents attending school (25.7% of boys, 5.4% of girls) were ever smokers. 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 programs in schools may be beneficial. Teenagers do not make decisions to smoke in 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 study¹³, having one or both parents who are smokers is associated

with the initiation of adolescent smoking in both age groups. Similarly, in this 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 been exposed to pro-tobacco advertisement in the media and billboard. Glorification of smoking in films has potential to influence smoking initiation among youths¹⁹. Our study revealed that adolescents between ages 15 and 17 years had a higher smoking prevalence (62.5% in males and 77.8% in females) which is surprising considering the relatively good awareness of the harmful effects of smoking, particularly the respiratory complications. Most (72%) respondents knew 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. The effects of second-hand smoke are particularly harmful for young children and children with asthma. It is responsible for between 150,000 and 300,000 lower respiratory tract infections among children under 18 months of age each year.²⁰ Because of the small sampling, 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 (43.8% and 33.3% respectively), which is unsurprising considering the peer influence. 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. The result showed that 50% of ex-smokers stopped smoking for health reasons, 22.2% because they wanted to and 11.1% as a result of social pressure from parents or religious authorities; only 3 adolescents gave up for financial reasons. 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. This study has some limitations that should be kept in mind: smoking status and changes in smoking habits were self-reported, and no biomarkers such as cotinine levels or exhaled carbon monoxide were analysed to validate exposure to tobacco. 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 is seems to quit later.⁴ 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 67% 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 60% of respondents). The cost of cigarettes may be relevant, though very few ex-smokers gave this as a reason for giving up. 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 program. 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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References

1. Sasco AJ, Kleihues P. Why can't we convince the young not to smoke? *Eur J Cancer* 1999; 35: 1933-1940
2. Greydanus DE, Patel DR. The adolescent and substance abuse. *Current Problems in Paediatric and Adolescent Health Care* 2005; 35: 392-431
3. Simon-Morton B, Chen R, Abroms L, Haynie DL. Latent growth curve analysis of peers and parent influences on smoking progression among early adolescents. *Health Psychology* 2004; 23 (6): 612-621
4. Centres for Disease Control and Prevention. Selected cigarette smoking and quitting behaviours among high school students-United States, 1997. *MMWR* 1998; 47(19): 386-389
5. Bloch AB, Mowery PD, Carabalo RS et al. Tobacco use, access and exposure to tobacco in media among middle and high school students-United States, 2004. *Morbidity and Mortality Weekly Report* 2005, 54 (12): 297-300
6. Centres for Disease Control and Prevention. Nigeria: Cross river State global youth tobacco survey. Atlanta: CDC, 2001
www.cdc.gov/tobacco/global/gyts/factsheets/2001/Nigeria_factsheet.htm accessed 14 Aug 2006
7. Salawu F, Danburam A, Agbo J, Onye-eri K. Awareness of the risks of cigarette smoking among patients in northeast Nigeria. *Sahel Medical Journal* 2007; 10(1): 29-33
8. Takano Y, Kohrogi H, Matsumoto M, Suga M, Ando M. Lack of knowledge about smoking-related risks of diseases in the general public in Japan. *Nihon Kokyuki Gakkai Zasshi* 2001; 39: 389-93
9. Jha P, Chaloupka F. *Tobacco control in developing countries*. New York: Oxford University Press 2002
10. Pierce JP, Choi WS, Gilpin E, Farkas AJ, Berry C. Tobacco industry promotions of cigarettes and adolescent smoking. *JAMA* 1998; 279: 511-515
11. Centre for Disease Control. Cigarette smoking-attributable morbidity-United States, 2000. *MMWR* 2003; 52:842-4
12. Petersen R, Clark KA, Hartmann KE, Melvin CL. Getting focused: missed opportunities for smoking interventions for pregnant women receiving Medicaid. *Preventive Medicine* 2005; 40: 209-215
13. Al-Yousaf MA, Karim A. Prevalence of smoking among high school students. *Saudi Med J* 2001; 22(10): 872-4
14. Global Youth Tobacco Survey Collaborating Group: Differences in worldwide tobacco use by gender: findings from the Global Youth Tobacco Survey. *J Sch Health* 2003; 73: 207-15
15. Centres for Disease Control (CDC): Tobacco use among students aged 13-15 years-Kurdistan Region, Iraq, 2005. *MMWR* 2006; 55(20): 556-559
16. Centres for Disease Control (CDC): Use of cigarettes and other tobacco products among students aged 13-15 years-worldwide, 1999-2005. *MMWR* 2006; 55: 553-6
17. Jarallah J, Al-Rubean K, Al-Nuaim A, Al-Ruhaily A, Kalantan K. Prevalence and determinants of smoking in three regions of Saudi Arabia. *Tobacco Control* 1999; 8: 53-6
18. Hesketh T, Ding QJ, Tomkins A. Smoking among youths in China. *American Journal of Public Health* 2001; 91(10): 1653-1655
19. Gale J, Fry B, Smith T et al. Smoking in film in New Zealand: measuring risk exposure. *BMC Public Health* 2006; 6:243-246
20. American Lung Association. Second hand smoke Fact Sheet 2000.
http://www.lungusa.org/tobacco/secondhand_factsheet99.html

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