

Prevalence and Determinants of Tobacco use in Nigeria: A one year review, 2014

Baffa Sule Ibrahim¹, Rabi Usman², Mercy Niyang¹, Bola Gobir¹, Ubong Akpan Okon²

1.University of Maryland Global Initiative Corporation, Nigeria. 2.Nigeria Field Epidemiology and Laboratory Training Program.

Abstract— Background: Tobacco is the single most preventable cause of death in the world today. It is projected that some 70% of tobacco deaths will be in low-income and middle-income countries by 2030. Africa faces the greatest threat in terms of future growth in tobacco use. We conducted this study to determine prevalence, distribution and factors associated with tobacco use in Nigeria. **Method:** We did a secondary data analysis of 2013 Nigeria Demographic Survey data. We extracted variables on tobacco among households using SPSS-18 and Microsoft Excel 2016. We conducted both univariate and bivariate analysis. **Results:** A total of 119,386 responses on tobacco use were recorded, 86.8% males. Mean age of tobacco users was 35.9yrs (SD±1.7years). Prevalence of tobacco use was 0.64%, with higher prevalence in females (1.0%) than in males (0.6%). Tobacco use was higher in rural settlements (0.41%), compared to urban settlements (0.26%). Prevalence of tobacco use was highest among respondents without formal education (0.42%), and persons with poor wealth indices (0.27%). Factors significantly associated with tobacco use include; age ($X^2=217.5, p\text{-value}<0.00000$), type of settlement ($X^2=21.8, p\text{-value}<0.00000$), religion ($X^2=236.7, p\text{-value}<0.00000$), level of education ($X^2=46.1, p\text{-value}<0.00000$), and wealth index ($X^2=16.21, p\text{-value}<0.000$). **Conclusion:** We found lack of formal education, poverty, older age and living in a rural settlement as factors associated with increased use of tobacco and its products, while inclination to religious faiths appears to reduce the use of tobacco. Public enlightenment campaign on the dangers of tobacco use, which will include both media jingles, should be prioritized across states.

Index Terms— Africa, Nigeria, Prevalence, Smoking, Tobacco.

1 INTRODUCTION

The prevalence of tobacco and tobacco product use differs widely between populations across the world.¹ Many factors are known to influence the prevalence of tobacco use, from individual level factors such as education level, to country-level factors such as national implementation of tobacco control policies. The highest prevalence of tobacco consumption has previously been found in high-income Western European countries, with a 37% prevalence among men and 25% among women.^{1,2} Tobacco is the single most preventable cause of death in the world. As of 2008 to 2010, tobacco is used by about 3 billion people (about 49% of men and 11% of women) with about 80% of this usage in the form of smoking.³ The gender gap tends to be less pronounced in lower age groups.^{4,5} As many as half of people who use tobacco die from the results of this use.^{2,6} Worldwide, tobacco use causes nearly 6 million deaths per year, and current trends show that tobacco use will cause more than 8 million deaths annually by 2030 – more than tuberculosis, HIV/AIDS and malaria combined.^{2,6} Cigarette smoking is responsible for more than 480,000 deaths per year in the United States, including more than 41,000 deaths resulting from second-hand smoke exposure. This is about one in five deaths annually, or 1,300 deaths every day.⁷ On average, smokers die 10 years earlier than nonsmokers.⁸ If smoking continues at the current rate among youths, 5.6 million of today's persons younger than 18 years of age are ex-

pected to die prematurely from a smoking-related illness. This represents about one in every 13 persons aged 17 years or younger who are alive today.⁷ Unless urgent action is taken, tobacco could kill one billion people during the 21st century.² Tobacco products are often the first psychoactive substances young people come in contact with, and up to a quarter of them use these products in many countries.^{9,10} Overall, about one billion men and 250 million women smoke cigarettes, with the highest rates of current smokers found in developing countries.^{9,11} Cigarette smoking or use of other tobacco products has been at epidemic proportions for many years and has been recognized as a major contributor to death and illness for several decades. Attempts to control tobacco use led to the adoption of the World Health Organization Framework Convention on Tobacco Control (FCTC). Until recently, the epidemic of chronic diseases and premature deaths are mainly seen in developed countries. But by 2030, it's been projected that some 70% of tobacco deaths will be in low-income and middle-income countries.^{12,13}

Africa presents the greatest threat in terms of future growth in smoking. Unlike smoking prevalence among adults, smoking prevalence among youths in Africa does not follow the same pattern of being significantly lower than in all other regions.¹⁴ Among boys, smoking prevalence in AFRO is 9%, higher than in other developing regions (EMRO 8%, SEARO 8%, and WPRO 6%). Among girls, smoking prevalence in AFRO is 3%.^{14,15} In Sub-Saharan Africa, estimates suggest that deaths from smoking-attributed causes reach 5–7% for men and 1–2% for women.¹⁶ These rates are projected to become higher in the future. Studies of smoking by socioeconomic status (SES) in African nations have found that cigarette use is highest among urban men and women who are less educated and economically disadvantaged.¹⁶

• Dr. Baffa Sule Ibrahim is currently a Public Health Physician with the University of Maryland Global Initiative Corporation, Nigeria, and a second-year resident of the Nigeria Field Epidemiology and Laboratory Training Program (NFELTP). E-mail: baffasule@gmail.com, bibrahim@mgic-nigeria.org

In Nigeria, 4.7 million adults aged 15 years or older used tobacco products in 2012 (4.2 million men and 0.5 million women). Approximately 4.2% of Nigerian adults used tobacco, 2.7% smoked tobacco whereas 1.5% used smokeless tobacco. Tobacco use was more prevalent among men than women (12% vs. 0.6%). Daily cigarette smokers smoked an average of eight cigarettes per day; seven cigarettes per day in urban areas and nine cigarettes per day in rural areas.¹⁷ By region, South East has a higher percentage of smokeless tobacco users compared to other regions in Nigeria.¹⁸ This study aimed to determine the Prevalence, magnitude, and distributions of tobacco use among Nigerians and, also identify factors associated with tobacco use in the country, so as to proffer recommendations for future interventions.

2 MATERIALS AND METHODS

2.1 Study setting

Nigeria lies on the west coast of Africa between latitudes 4016' and 13053' north and longitudes 2040' and 14041' east. It occupies approximately 923,768 square kilometres of land stretching from the Gulf of Guinea on the Atlantic coast in the south to the fringes of the Sahara Desert in the north.¹⁹

Nigeria is the most populous country in Africa and the 14th largest in land mass. The country's 2006 Population and Housing Census placed the country's population at 140,431,790. It's the most populous black nation in the world.²⁰

Nigeria comprises of 36 states and a Federal Capital Territory (FCT) with 774 Local Government Areas (LGAs), categorized into six geo-political zones (North-West, North-East, North-Central, South-West, South-East, and South-South). Nigeria has more than 500 ethnic groups with Hausa, Yoruba and Igbo being the dominant ones.

2.2 Study Population

This survey was conducted among households sampled across all the states in Nigeria.

2.3 Study Design

A secondary data analysis of the Nigeria Demographic Health Survey dataset.

2.4 Ethical Consideration

We obtained data of the 2013 Nigeria Demographic Health Survey from the United State Agency for International Development (USAID) through online registration and formal application for the dataset. We sought permission from the Epidemiology department, Federal Ministry of Health, Nigeria.

2.5 Data Management

Relevant variables indicating response on tobacco use were identified, sorted, and extracted. Univariate and bivariate analysis were conducted. Analysis was done using SPSS version 22, Epi-info7, Health-Mapper and Microsoft excel 2016.

3 RESULTS

A total of 119,386 respondents were recorded. Males 103,662 (86.8%) and females 15,724 (13.2%). Mean age for all respon-

dents was 35.9years, median age 34years and age range of 15 - 49years. Majority of respondents 72,129 (60.4%) were in the 20 - 39years age group, and 45,672 (38.3%) were 40years and above, while 1,585 (1.3%) were between 15 - 19years of age (teenagers). Most respondents were Muslims (57.7%), followed by Christians (40.9%) and other religious faiths (1.4%). There were more respondents from rural settlements (67.5%) than from urban settlement (32.5%). The northwest region has the highest number of respondents with 38,757 (32.5%), while the southeast region had the least number of respondents with 11,219 (9.4%). Also, majority of respondents (57.8%) had no formal education, while 30,763 (25.8%) had primary level education, 13,326 (11.2%) had secondary level education, and 6,275 (5.3%) had tertiary level education (**Table 1**).

There were 760 respondents who used one form of tobacco product or the other, giving the prevalence of tobacco use to be 0.64%. There was higher prevalence of tobacco use among female respondents (1.01%) than in male respondents (0.58%). Prevalence of main tobacco and tobacco products used were; cigarette smoking (0.26%), snuff sniffing (0.24%), chewing tobacco (0.08%), and pipe smoking (0.05%). Prevalence of tobacco use was lower among males (0.58%) than in female respondents with 1.01% (**Table: 2**).

Table: 1: Socio-demographic distribution of respondents on Tobacco use, Nigeria, 2014.

Category	Number of Respondents	Percentage
Gender		
Male	103662	86.8
Female	15724	13.2
Age (years)		
15 - 19	1585	1.3
20 - 39	72129	60.4
>=40	45672	38.3
Religion		
Islam	68572	57.7
Christianity	48655	40.9
Others	1640	1.4
Settlement		
Urban	38786	32.5
Rural	80600	67.5
Educational level		
None	69022	57.8
Primary	30763	25.8
Secondary	13326	11.2
Tertiary	6275	5.3

Highest prevalence of tobacco use was seen in respondents who are 40years and above with 0.41% prevalence, followed by those who are between 15-39years of age with 0.23%. Tobacco use was also higher in rural settlements (prevalence of 0.41%), compared to urban settlements which has a prevalence of 0.26%. Smoking prevalence among Christians was 0.36%,

Muslims 0.23%, and other religions 0.04%. Prevalence of tobacco use was highest among respondents without any form of formal education (0.42%), followed by respondents with primary education (0.16%), secondary education (0.05%), and tertiary education (0.003%). Also, prevalence of tobacco use was highest among persons with poor wealth indices (0.27%), followed by the rich (0.20%), then the middle class with 0.17% (Table 3).

Table 2: Prevalence of tobacco use by gender and type of tobacco products used in Nigeria, 2014.

Tobacco type	Prevalence of tobacco use (%)		
	Male (n=601)	Female (n=159)	Total (n=760)
Smokes cigarette	0.25	0.32	0.26
Chewing tobacco	0.08	0.08	0.08
Uses snuff	0.19	0.54	0.24
Smokes pipe	0.05	0.08	0.05
Total	0.58	1.01	0.64

Table 3: Distribution of prevalence and significance of tobacco use across respondents associated factors in Nigeria, 2014.

Associated Factors	Prevalence of Tobacco use (%)	Chi-Square (X ²)		
		Value	df	P-value
Age		217.5	1	<0.00000*
15-39years	0.23			
>=40years	0.41			
Type of Settlement		21.8	1	<0.00000*
Urban	0.26			
Rural	0.38			
Religion		236.7	2	<0.000000*
Christianity	0.36			
Islam	0.23			
others	0.04			
Educational level		46.1	3	<0.00000*
None	0.42			
Primary	0.16			
Secondary	0.05			
Tertiary	0.003			
Wealth index		16.21	2	<0.000*
Poor	0.27			
Middle Class	0.17			
Rich	0.20			

*Significant

Most respondents who smoked cigarette 110(14.5% of all tobacco users) were located in the north-eastern part of Nigeria, followed by the north-central region, 80(10.5% of all tobacco users). The south-south region had the lowest proportion of cigarette smokers 28(3.7% of all tobacco users) but conversely had the highest proportion of snuff sniffers 123(16.2% of all tobacco users). The south-east region followed with 32(4.2%) cigarettes smokers and 76(10.4%) snuff sniffers. Highest pro-

portion of respondents who chew tobacco were in the north-central region 59(7.8%), followed by the south-west region with 12(1.6%) and the north-east region with 10(1.3%). Also, pipe users were seen more in the north-central region with 34(4.5%) and the north-east with 26(3.4%). There were no recorded pipe users in the north-west, north-east, south-west and south-south regions (Figure 1).

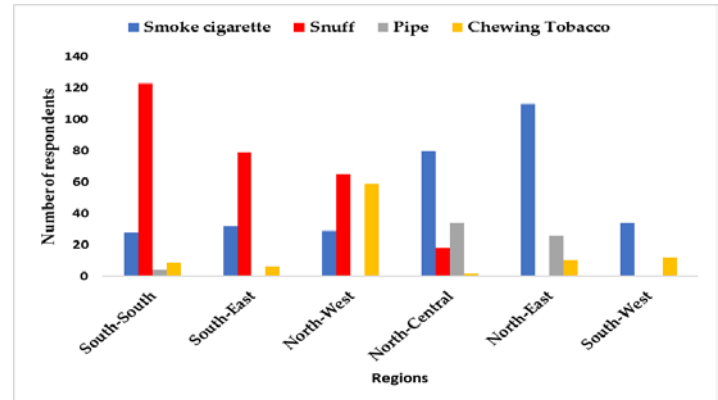


Figure 1: Distribution of tobacco and tobacco products use across regions of Nigeria, 2014.

Prevalence of tobacco use is almost evenly distributed across states in Nigeria, with 10 states from five of the six geo-political regions having prevalence of greater than 1.2% each. The same pattern was seen in states with prevalence between 0.2 - 1.2%. But majority of States with low prevalence (<0.2%) were located in the northern geo-political zones (North-west, north-east and north-central), with only one state located in the South-west region (Figure 2).

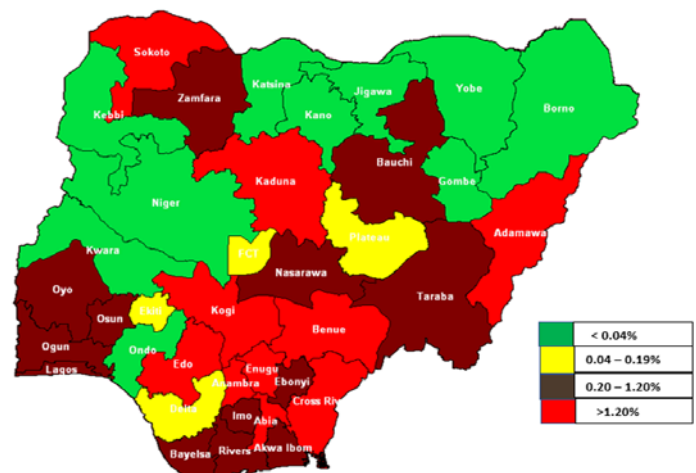


Figure 2: Prevalence of tobacco use across various states of Nigeria 2014.

Factors significantly associated with tobacco use include; age (X²=217.5, p-value<0.00000), type of settlement (X²=21.8, p-value<0.00000), religion (X²=236.7, p-value<0.000000), level of education (X²=46.1, p-value<0.00000), and wealth index (X²=16.21, p-value<0.000). (Table 3).

4 DISCUSSION

Our study found the prevalence of tobacco use in Nigeria to be 0.64%. This prevalence is much lower than the prevalence reported in several studies carried out in the country which have reported prevalence ranging from 2.7% to 15.4%.^{17,18,21,22} Tobacco use among men has remained higher than that in women,^{17,21} but findings from this survey reported a lower prevalence among men. This finding is thus comparable to similar study in Rwanda which reported a higher prevalence of tobacco use of 12.6% in women than in men.²² Tobacco use has been found to be higher in adults 15yrs or older,^{18,22} and this is consistent with findings from this study.

The prevalence of smoking differed according to location of residents among adults in Nigeria. It was observed that more adults residing in rural areas smoked compared to urban areas. It was also observed that poor, uneducated respondents used tobacco and tobacco products more than the relatively rich and educated respondents, this was clearly demonstrated in this study, where level of education and wealth index were found to be important factors associated with tobacco use. This may indicate that illiteracy and poor knowledge on the effects of smoking and inability to read the warnings written on the tobacco packets could have an impact on an individual's attitude towards smoking.

5 CONCLUSION AND RECOMMENDATIONS

Despite an apparent reduction in the prevalence of tobacco use in Nigeria, the factors found to be associated with tobacco use need to be addressed. A more aggressive and comprehensive public enlightenment campaign on the dangers of tobacco, especially to the rural settlements should be a priority. These should include both radio and television jingles. The social media, which has a vast reach to millions of youths, should also be used for enlightenment campaigns. Education, especially educating the girl-child should be encouraged. Warnings on cigarette brands should be written boldly, clearly, and in various local languages that Nigerians in rural settlements will understand.

6 ACKNOWLEDGMENT

The authors gratefully acknowledged the United State Agency for International Development (USAID) for providing the data for this study.

7 CONFLICT OF INTEREST

The authors declare no conflict of interest.

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