

The Pattern of Cigarette Smoking Among Commercial Motorcyclists in a Semi-Urban Town in Nigeria

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Abstract: Smoking is the most important avoidable cause of premature morbidity and mortality in the world. The estimated annual death rate of 4.9 million people in 1999 is expected to rise to 10 million by the 2020s and 2030s, 7 million of which will occur in developing countries. The aim of the present study was to estimate the prevalence of smoking and assess its pattern among commercial motorcyclist in a semi urban town in Nigeria. It was a cross-sectional study of 400 commercial motorcyclists selected by multi-stage random sampling technique with proportional allocation. Data were collected using an interviewer administered modified WHO Global Youth Tobacco Survey questionnaire. The prevalence of smoking among commercial motorcyclists in Sagamu was 44.3%. The mean age at which smoking started was 28.3±10.5 years, with a minimum of 15 years. The mean no of sticks of cigarette smoked per day is 6.2±3.0. Association between age, marital status and smoking were significant P= 0.0000 and 0.0023, respectively). The most commonly perceived benefit of smoking was boldness (42.5%), followed by pleasure (35.5%). There is higher prevalence rate of smoking among commercial motorcyclists in Sagamu than the average population with most commencing smoking before the age of 25 years. It is recommended that a workplace based comprehensive health education program on smoking be carried out among commercial motorcyclists and that very strict tobacco control measures are enforced by regulatory agencies. The ages between 15 and 25 years are particularly important.

Key words: Commercial Motorcyclist • Cigarette Smoking • Nigeria

INTRODUCTION

Smoking is a major worldwide public health problem. It is the most important avoidable cause of premature morbidity and mortality in the world, placing the heaviest burden of morbidity and mortality compared to any other risk factor on people [1]. About one in three adults or 1.1 billion people smoke. Of these, about 80 percent live in developing countries. Partly because of growth in the adult population and partly because of increased consumption, the total number of smokers is expected to reach about 1.6 billion by 2025 [2]. Tobacco is associated with very serious short and long term social and life threatening health problems and a huge mortality.

The estimated death rate of 4.9 million people in 1999 is expected to rise to 10 million by the 2020s and 2030s, 7 million of which will occur in developing countries. Over the next fifty years, 450 million may die because of tobacco use [3].

The populations of the developing countries, including Nigeria, have been increasing their cigarette consumption since about 1970. The per capita consumption in these countries climbed steadily between 1970 and 1990, although the upward trend may have slowed a little since the early 1990s [2]. It is unlikely that individuals who avoid starting to smoke in adolescence or young adulthood will ever become smokers. The overwhelming majority of smokers start before age

25 years [4, 5] often in childhood or adolescence in the high-income countries; eight out of 10 begin in their teens [2]. In developing countries for which data are available, it appears that most smokers start by the early twenties, but the trend is toward younger ages. A similar decline in the age of starting has been observed in the high-income countries.

Smoking is more prevalent globally among males than females. In developing countries, it is estimated that about 48% of males and 7% of females are smokers [3].

Cigarette smoking has multiple health risks. Cigarette smokers are 2 to 4 times more likely to develop coronary heart disease than nonsmokers. Cigarette smoking approximately doubles a person's risk for stroke. Smokers are more than 10 times as likely as nonsmokers to develop peripheral vascular disease. It is estimated that nearly one-fifth of deaths from heart disease is attributable to smoking and the WHO cancer agency indicated that cigarette smoking has been linked to about 90% of all lung cancer cases [6]. It also reported that active smoking was linked to cancer of stomach, liver, uterus, kidneys and myeloid leukemia [6, 7].

Smoking poses adverse social, economic and developmental effects on the lives of individuals, their families and communities. The economic burden includes direct medical care for tobacco-induced illnesses, absence from work, reduced productivity and loss of life from early death [8].

The recent proliferation of commercial motorcyclists in Nigeria is attributable to a number of factors which include inadequacies of mass transportation system in the country, as bad roads with attendant traffic congestion as well as the ability of these Motorcyclists to meander through traffic jams have encouraged the patronage of this mode of transportation [9, 10]. Most of these motorcyclists are young, male and low to medium income earners with relatively low educational status [11]. This Demography fits the worldwide pattern of increased cigarette smoking.

In Nigeria, smoking is increasing particularly among the youth. The prevalence of smoking in people 15 years and above in 2009 was reported as 8.6% [12], being higher among males (10.5%) than females (2.6%) [13].

The lack of stringent measures by governments of most developing countries (Nigeria inclusive) coupled with the westernization of these nations around the world has led to an especially high risk [14]. One of the largest tobacco plants in the world was recently constructed in Nigeria. Nigeria has a population which is about a quarter of the population of Africa [15]. The risk

of tobacco usage and its attending health and health related sequelae will be enormous considering the large population of at risk individuals.

The sociopolitical situation of the country characterized by widespread poverty, unemployment and political exploitation has led to a dramatic upsurge of commercial motorcyclists [8, 9] most of who are in the young productive and adventurous age group and are at risk of tobacco use. This critical mass is often overlooked.

The decline in moral values and social acceptance despite the recognized health problems further reinforces the risk of cigarette smoking. Some efforts are being made to curtail the use of cigarette in public places in some parts of the country [16]. The efforts are grossly incomprehensive and half-hearted. There is no program in place to address the long term effects of increased use smoking of cigarettes.

Developed countries are making frantic efforts to mitigate the problems while the risk is given little attention in Nigeria despite the fact that the country is especially at risk given the upsurge in the usage of tobacco and lack of potential to tackle the attendant problems. The focus of this study was to assess the pattern of tobacco use among the commercial motorcyclists with a view to providing information about the magnitude of these problems and how to avert the potential crises that could arise in the near future.

MATERIALS AND METHODS

A cross-sectional study was conducted in Sagamu, Nigeria. All duly registered commercial motorcyclists in Sagamu were eligible to participate in the study. The study population was 6,124. The sample size was calculated using the formulae for estimating prevalence in a descriptive study where study population is less than 10,000 [17] based on an assumed prevalence of 50% of smoking among commercial motorcyclists and a worst expected frequency of $\pm 5\%$ at a confidence level of 95%. The minimum required sample size was 362. The sample size was increased to 400 to adjust for 10% non-response rate. Commercial motorcyclists were selected by a multi-stage random sampling technique with proportional allocation. Proportionate sample sizes were allocated to each of the 14 motorcyclist units. The participants were then drawn from each of the units by systematic random sampling. A sampling frame was obtained for each of the units and the sampling interval was determined. The first participant was picked by simple random sampling via balloting.

Data were collected by an interviewer administered Arabic questionnaire which was adapted from the WHO Global Youth Tobacco Survey questionnaire [18]. The questionnaire was pre tested and standardized. Signed consents were obtained from participants and confidentiality maintained. The Data obtained from the questionnaire were stored in a computer and analyzed using the EPI-Info 2000. The data was summarized using the appropriate measures of central tendency and variation. Bar charts, Histograms and pie charts were used to present the data. The chi square and Fischer's exact test were used to determine associations as appropriate.

RESULTS

Table 1 shows that over 80% of the respondents were less than 40 years old with over a third (34%) of the respondents being between the ages of 15 and 19 years. The mean age of the commercial motorcyclists was 28.3±10.5 years. The youngest motorcyclist was 15 years old. The population of commercial motorcyclists in Sagamu is predominantly young. There is also a predominance of males with 99.2% of the motorcyclists being male. More than half (52.5%) of the respondents were married while 45.5% of them were single. There were only a few of them who were separated, divorced or widowed. The majority of the respondents (45.7%) had completed senior secondary school while 11.8% of them had not completed any level of schooling. The primary school completion rate was 88.2%.

Table 2 shows that 44.3% (177 out of 400) of the commercial motorcyclists smoke cigarette. More than half (52.6%) of them started smoking cigarette before their twentieth birthday while 84.8% of them had commenced smoking before their twenty fifth birthday. The mean age of onset of cigarette smoking was 21.0±6.0 years. About of (50.8%) the motorcyclists take between 6 and 10 sticks of cigarette per day while 42.4% take less than six sticks of cigarette per day. Only 6.8% of the commercial motorcyclists smoke more than 10 sticks of cigarette per day. The mean number of cigarettes smoked per day was 6.2±3.0 sticks.

According to Table 3, the most commonly perceived benefit of smoking was boldness (42.5%), followed by pleasure (35.5%). Other perceived benefits of cigarette smoking were prevention of vomiting, soothing of depression and aiding of digestion.

Table 4 shows that there is a statistically significant ($P \leq 0.05$) association between age and cigarette smoking. The older the commercial motorcyclist was, the higher the likelihood of cigarette smoking.

Table 1: Socio-demographic characteristics of respondents

Characteristics	No of Respondents	Percentage %
Age in years		
15-19	136	34
20-24	25	6.3
25-29	61	15.2
30-34	81	20.3
35-39	20	5
40-44	40	10
45-49	26	6.5
50 and above	11	2.7
Sex		
Male	397	99.2
Female	3	0.8
Marital status		
Single	182	45.5
Married	210	52.5
Separated/Divorced	2	0.5
Widowed	6	1.5
High level of schooling completed		
None	47	11.8
Primary school	68	17
Junior secondary	100	25
Senior secondary	183	45.7
Post-secondary	2	0.5

Table 2: Characteristics of current smokers

Characteristics	No of respondents	Percentage %
Current Smokers		
Yes	177	44.3
No	223	55.7
Age of onset of smoking in years		
less than 15	1	0.6
15-19	92	52.0
20-24	57	32.2
25-29	8	4.5
30-34	14	7.9
35-39	3	1.7
40-44	0	0.0
45-49	0	0.0
50 and above	2	1.1
No of cigarettes smoked per day		
5 or less	75	42.4
6 to10	90	50.8
More than 10	12	6.8

Table 3: Perceived benefits of cigarette smoking

Perceived benefits	Yes (%)	No (%)
Aids digestion	67 (16.7)	333 (83.3)
Boldness	170 (42.5)	230 (57.5)
Pleasure	142 (35.5)	258 (64.5)
Prevents vomiting	131 (32.7)	269 (67.3)
soothes depression	89 (22.3)	311 (77.7)

Table 4: Association between age and cigarette smoking

Age in years	Yes	No
15-19	37 (27.2%)	99(72.8%)
20-24	10 (40%)	15 (60%)
25-29	33 (54.1%)	28(45.9%)
30-34	49 (60.5%)	32 (39.5%)
35-39	13 (65%)	7 (35%)
40-44	15 (37.5%)	25 (62.5%)
45-49	15 (57.7%)	11 (42.3%)
50 and above	9 (81.8%)	2 (18.2%)

df=7 Chi-square (X2)= 38.3166 P= 0.0000

Table 5: Association between sex and cigarette smoking

Sex	Yes	No
Female	2 (66.7%)	1(33.3%)
Male	179 (45.1%)	218 (54.9%)

Fischer's Exact Test, F= 0.4273388285

Table 6: Association between highest level of education completed and cigarette smoking

Level of education	Yes	No
Post- secondary	0 (0%)	2(100%)
SSS	90 (49.2%)	93 (50.8%)
JSS	38 (38.0 %)	62 (62.0%)
Primary	35 (51.5%)	33 (48.5%)
None	17 (36.2%)	30 (63.8%)

df=4 Chi-square (X2)= 6.4913 P= 0.1644

Table 7: Association between marital status and cigarette smoking

Marital status	Yes	No
Single	67 (36.8%)	115(63.2%)
Married	110 (50.5%)	108 (49.5%)
Divorced	1 (50%)	1 (50%)
Widowed	6 (100%)	0 (0%)

df=3 Chi-square (X2)= 14.4945 P= 0.0023

Table 5 shows that there is no statistically ($P \geq 0.05$) significant relationship between cigarette smoking and sex.

Table 6 shows that there is no statistically ($P \geq 0.05$) significant relationship between level of education and cigarette smoking.

Table 7 shows that there is a statistically significant ($P \leq 0.05$) relationship between marital status and cigarette smoking.

DISCUSSION

Commercial motorcycling is predominantly a profession for young males. One third (34%) of the respondents in this study were less than 20 years old.

The mean age in this study was 28.3 years. This is corroborated by various studies from different parts of Nigeria. The average ages in Nnewi, Zaria and Igboora were shown to be less than 30 years whereas, the average age in Benin, Nigeria was 36.4 years [11, 19-21]. Only three (0.8%) out of the four hundred respondents from this study were females. Males dominate the profession. The proportion of females who ride motorcyclists commercially in Nigeria is usually less than 2% [11, 20]. Commercially motorcycling is a physically demanding, risky profession that requires the riders to spend usually over 10 hours daily on the road. It has been suggested that women tend to stay away from it for cultural reasons especially in the Northern parts of Nigeria [11]. More than half (52.5%) of the motorcyclists were married while 45.5% of them were single.

The primary school completion rate (88.2%) is rather on the high side when compared with a study in Zaria, Nigeria where Alti-Muazi and Alliyu showed that 60.5% of commercial motorcyclist lack any form of formal education [11]. This may be due to the high level of Job insecurity especially in the South West Nigeria such that more people with formal education engage in Jobs that would ordinarily be regarded as the reserve of the non-educated. Primary school completion in the general population in Ghana (94.0%) and Mauritius (96.0%) are higher. However, the primary school completion rates among the motorcyclists in this study is higher than the Nigerian average (78.8%) and the rates for Burkina Faso (45%), Niger (46%) and Cameroon (79.0%) which are neighboring countries to Nigeria [13].

The proportion of the respondents who currently smoke cigarette (44.3%) is rather high considering that the prevalence of cigarette smoking in Nigeria is 8.6% while 10.5% of Nigerian males older than 15 years smoke cigarette [13]. Besides, only 18.1% of Nigerian youth smoke cigarette. The proportion however tallies with the estimates of smoking among males in the developing countries which is put at 48% [3]. The prevalence of smoking among the working adults in the USA is 19.3% with the highest rate (23.8%) seen between the ages of 18 and 24 years [22-24]. This suggests that there is a greater tendency to smoke among commercial motorcyclist than the general Nigerian population [25].

Most cigarette smokers start before their 25th birthday [4, 5]. In this study, the average age of onset was 21.0±6.0 years. Fifty two percent of them commenced smoking before the age of 20 years while 85% of current smokers had started smoking cigarette by their 25th birthday.

Only 5 (2.8%) of current smokers started smoking after the age of 35 years. The ages before 25 years are therefore important for intervention purposes.

The majority of the smokers interviewed reported smoking an average of ten or less sticks of cigarettes/day. The mean number of cigarettes smoked per day (6.2 ± 3.0 sticks) was markedly higher than 4.3 sticks recorded in a study conducted among civil servants in Accra [26].

There is a statistically significant ($P \leq 0.05$) relationship between marital status and cigarette smoking. It is most likely that widowed commercial motorcyclist in Sagamu will smoke cigarette. Single commercial motorcyclists in Sagamu are least likely to smoke cigarette.

Gender did not determine whether or not a commercial motorcyclist in Sagamu will smoke cigarette or not. This is corroborated by Salawu *et al.* [27] in a study of adolescents in the North-East of Nigeria which found no statistically significant relationship between gender and cigarette smoking whereas; a female senior executive in Nigeria is less likely to smoke than the male senior executive [2]. In the United States, however, while there is no gender based difference in the high socioeconomic group, there is a massive difference skewed towards the male gender in the low socioeconomic group [28].

Likewise, there is no association between level of education and cigarette smoking. This negates the fact that low level of academic achievement is regarded as a risk factor for youth cigarette smoking in developed countries [28, 29]. However, Salawu *et al.* [27] found no significant relationship between level of education and cigarette smoking among adolescents in the North-East, Nigeria.

The majority of respondents didn't consider cigarette smoking to be of benefit. One hundred and seventy of the four hundred (42.5%) of respondents believed that it gives boldness while 142 (35.5%) believed that it helps to prevent vomiting. Others thought that it aides digestion or relieves depression. In a similar study among secondary school students in Ibadan, 85% of them thought that cigarette smoking give boldness and pleasure [30]. Cigarette smoking has been shown to increase serum hemoglobin, increase total lung capacity and stimulate weight loss, factors that all contribute to enhance performance in endurance sports [31-34]. Many other health benefits of smoking have been suggested.

It can be concluded that the commercial motorcyclists are predominantly young males most of whom had completed primary school education. There was higher prevalence rate of smoking among commercial

motorcyclists in Sagamu than the average population with most commencing smoking before the age of 25 years. Age and marital status were found to be associated with cigarette smoking while Gender and level of education completed were not. It is recommended that a workplace based comprehensive health education program on smoking be carried out among commercial motorcyclists and that very strict tobacco control measures are enforced by regulatory agencies. The ages between 15 and 25 years are particularly important.

ACKNOWLEDGEMENTS

We would like to acknowledge Dr. Jeminusi and Opeyemi Kamiyo for their cooperation and assistance during the conduct of this Research.

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