



TOBACCO BEHAVIOR, ATTITUDE, KNOWLEDGE AND CESSATION AMONG A VULNERABLE NIGERIAN POPULATION WHO SMOKE

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ABSTRACT: *Limited studies in Nigeria have specifically evaluated smoking attitude, behavior, and willingness to quit smoking among smokers only in any population. This study aimed to assess the tobacco behavior, attitude, knowledge, and cessation among commercial motorcycle riders who currently smoke cigarettes. Data on 64 current smokers' smoking behavior, attitude, knowledge, and cessation were extracted from a larger study that examined the relationship between tobacco use and oral health status. The study was multi-staged and cross-sectional in which participants' smoking history was collected using an interviewer-based survey. About 62% of current smokers used other forms of tobacco in addition to cigarettes. The average current smoker began smoking at the age of 17.8 (± 5.63) years and was introduced to the habit by a friend or peer (96.8%). More than half of current smokers thought quitting once they got into the habit would be difficult. About 92% of current smokers lack adequate and relevant knowledge about tobacco, its use, and its health implications. Two-thirds of current smokers wanted to quit smoking right away. About half of the smokers had made at least one attempt to quit smoking in the previous year. Approximately 60% had never received help to quit smoking. A health professional had never spoken to 67% of them about their smoking habit and its implications. Although our findings revealed smokers' poor knowledge and attitude toward smoking, the high motivation to quit smoking calls for the development and implementation of smoking cessation interventions among this vulnerable population.*

KEYWORDS: Smoking Cessation, Tobacco, Commercial Motorcycle Riders, Cigarette.



INTRODUCTION

Smoking is the leading cause of preventable disease and mortality worldwide (WHO, 2022). According to the World Health Organization, the tobacco pandemic, which claims nearly six million lives each year, is one of the world's worst public health hazards (WHO, 2022). More than 600,000 of those fatalities are caused by non-smokers inhaling secondhand smoke, while tobacco use is directly responsible for more than five million deaths (WHO, 2022). Nearly 80% of the world's more than one billion smokers live in low- and middle-income countries, which bear the brunt of tobacco-related disease and mortality (Egbe et al., 2019).

Because of the extremely addictive nature of the nicotine found in tobacco, tobacco use is a significant risk factor for cardiovascular and respiratory disorders, over 20 distinct types or subtypes of cancer, and a number of other life-altering illnesses (Le Foll et al., 2022; Mishra et al., 2015). Smoking causes shortness of breath, respiratory conditions, decreased physical fitness, poor lung function, lung cancer, and cardiovascular mortality and morbidity (Das, 2003; P Saha et al., 2007). Aside from the conditions mentioned above, it also results in a loss of working person hours (Bunn et al., 2006; Tan et al., 2020). As a result, it may have a long-term impact on the Nigerian economy. Tobacco use is a significant public health problem (Le Foll et al., 2022). As a result, preventing and managing the negative health effects of tobacco use is a growing challenge with substantial public health implications (Le Foll et al., 2022).

Many studies in Nigeria have shown that various populations are less aware of the dangers associated with smoking and tobacco use (Adedigba et al., 2018; Awopeju et al., 2013; Desalu et al., 2009; Hussain et al., 2011; Nwankwo et al., 2018; Odukoya, 2014; Onigbogi et al., 2015; Vigna-Taglianti et al., 2019). Similar studies have revealed a lack of understanding of the health consequences of tobacco use. Despite the fact that some smokers are aware of some of the health risks associated with smoking, the vast majority have this sense of invincibility (Egbe, 2016). The harmful effects of smoking on one's health appear to be underappreciated, or they are thought to be mostly long-term and thus not immediately concerning (Egbe, 2016).

Current health messages are not effective enough to reduce smoking initiation and attempts to quit (Egbe, 2016). One example is that most young smokers who have tried to quit or intend to quit have a good understanding of the negative consequences of smoking cigarettes (Egbe, 2016). It is also important to note that motorcycle riders, also known as 'okada' riders in Nigeria, are primarily comprised of impoverished illiterates who are thus unaware of the harmful effects of tobacco use (Iribhogbe & Odai, 2009).

Some studies in Nigeria have assessed smoking knowledge, attitudes, and practices among different populations in Nigeria (Adedigba et al., 2018; Awopeju et al., 2013; Babatunde et al., 2018; Desalu et al., 2009; Hussain et al., 2011; Nwankwo et al., 2018; Odukoya, 2014; Onigbogi et al., 2015; Vigna-Taglianti et al., 2019). However, none has considered these in commercial motorcycle riders. In addition, no study in Nigeria has coned to only smokers to evaluate their smoking cessation desires. Therefore, our study aimed to assess the smoking behavior, attitude, knowledge, and cessation among commercial motorcycle riders who currently smoke in a bid to provide baseline information for decision-making concerning smoking cessation interventions.



METHODS

This cross-sectional study was part of a more comprehensive study that assessed the relationship between smoking status and oral health status of commercial motorcyclists in the Igboora community, the headquarters of the Ibarapa Local Government Area in southwestern Nigeria (Tundealao et al., 2024).

In this study, we restricted analyses to commercial motorcycle riders who were current smokers. (A current smoker is a person who has smoked at least 100 cigarette sticks in his lifetime and has smoked regularly within the last 30 days.) The inclusion criteria for the primary study included commercial motorcyclists aged 18 years and above who lived in the Igboora community.

A multi-stage sampling technique was used to select the eligible participants. At the first stage of the multi-stage sampling, nine motorcycle parks were selected randomly in the Igboora community, and 32 participants were selected from each of the motor parks.

Ethical approval was obtained from the University College Hospital/University of Ibadan Nigeria ethics committee (UI/EC/19/0244). Eligible participants signed informed consent forms, and an interviewer-based survey was used to collect data on demographics, riding characteristics, smoking behavior, attitude toward smoking, smoking knowledge, and smoking cessation.

To assess their knowledge of tobacco and its health implications, the participants were asked thirteen (13) questions. Participants who answered seven or more questions correctly were deemed to have a satisfactory level of tobacco knowledge, while those who answered less than seven correctly were deemed to have a non-satisfactory level of tobacco knowledge.

We used STATA 17.0/SE to analyze the data and used mean and proportions to summarize the participants' sociodemographics, riding history, smoking behavior, knowledge, attitudes, and cessation. Current smokers who got seven or more knowledge questions right were classified as "satisfactory knowledge" while those who got six or less knowledge questions right were classified as "unsatisfactory knowledge."

RESULTS

Sociodemographic Characteristics

A total of 63 current smokers who were commercial motorcycle riders were recruited in the study (**Table 1**). The mean age of these current smokers was 34.7 (± 9.46) years. Almost half of the current smokers had a primary school education or less. Most (87.3%) of current smokers were married or living with their significant others. About 70% did not have an official motorcycle rider's license, and another 70% rode their motorcycles without protective helmets.

**Table 1: Demographic and riding characteristics of current commercial motorcycle riders**

	Current Smoker n(%)
Age (Years) (Mean±SD)	34.7 (±9.46)
Gender	
Male	63 (100)
Highest Level of Education	
Primary school and below	30 (47.6)
Secondary school and above	33 (52.4)
Marital Status	
Single/Separated/Divorce	8 (12.7)
Married/Living with significant other	55 (87.3)
Rider's permit or license	
Yes	19 (30.2)
No	44 (69.8)
Riding Experience (Years)	7.5 (±5.80)
Safety Helmet	
No	95 (68.8)
Yes	43 (31.2)

Smoking Behavior

About 62% of current smokers were dual smokers, which means they used other tobacco products (e.g., snuff, chewing tobacco, pipes) in addition to cigarettes (**Table 2**). The average current smoker had his first cigarette at the age of 17.8 (±5.63) years and was introduced to smoking by a friend or peer (96.8%). The vast majority (93.7%) obtained their cigarettes from stores, shops, or street vendors. More than two-thirds had a strong urge to smoke first thing in the morning. They smoked cigarettes for a variety of reasons, including boldness, courage, and pleasure. They smoked most frequently at home (84.1%), at work (57.1%), at social events (50.8%), and in public places (49.2%).

Table 2: Smoking behavior

	Current Smoker n(%)
Age at First Smoke (Years)	17.8 (±5.63)
How do you usually get your cigarette	
Store, shop, or street vendor by self	59 (93.7)
Gave someone else money to buy them	9 (14.3)
From another smoker	22 (34.9)
Other tobacco products other than cigarettes (e.g., Snuff, Chewed tobacco, pipes)	
Yes (Dual User)	39 (61.9)
No	24 (38.1)



Urge to smoke first thing in the morning	
Yes	45 (71.4)
No	18 (28.6)
Reason for smoking	
Pleasure	20 (31.8)
Boldness/Courage	15 (23.8)
Digestion	3 (4.8)
Soothes Depression	2 (3.2)
Nothing in particular	23 (36.5)
Who introduced you to smoking?	
Peer/Friend	61 (96.8)
Fellow rider	1 (1.6)
Siblings	1 (1.6)
Where do you usually smoke?	
Home	53 (84.1)
Work	36 (57.1)
Friend's house	20 (31.8)
Social events	32 (50.8)
Public spaces (e.g., parks, shopping centers, street corners)	31 (49.2)

Attitudes Toward Smoking

More than half of current smokers believed it would be difficult to quit once the habit had begun. When they smoked, 55.6% felt more at ease at social events and gatherings. One-third of current smokers believed smoking is not harmful to their health, and 85% had close friends who smoke. Approximately half of them were opposed to public smoking bans.

Table 3: Attitude toward smoking

	Current Smoker n(%)
Once someone has started smoking, do you think it would be hard to stop?	
No	29 (46.0%)
Yes	34 (54.0%)
Does smoking cigarettes help people feel more or less comfortable at celebrations, parties, or in social gatherings?	
More Comfortable	35 (55.6)
Less comfortable	15 (23.8)
No difference	13 (20.6)
Do you think cigarette smoking is harmful to your health?	
No	19 (30.2)
Yes	43 (69.8)



Do any of your closest friends smoke?	
No	9 (14.3)
Yes	54 (85.7)
Do you think the smoke from other people's cigarettes is harmful to you?	
No	14 (22.2)
Yes	41 (65.1)
Don't know	8 (12.7)
Are you in favor of banning smoking in public places?	
No	31 (49.2)
Yes	32 (50.8)

Knowledge About Tobacco

About 62% of current smokers lack adequate and relevant knowledge about tobacco, its use, and its health consequences.

Table 4: Smoking knowledge

	Yes n(%)	No n(%)	Don't know n(%)
Tobacco is a stimulant	14 (22.2)	44 (69.8)	5 (7.9)
Tobacco contains Nicotine	1 (1.6)	43 (68.3)	19 (30.2)
Cigarette contains tobacco	52 (82.5)	0 (0.00)	11 (17.5)
Smoke from tobacco contains Carbon monoxide	19 (30.2)	33 (52.4)	11 (17.5)
Cigarette contains bad toxicants	27 (42.9)	29 (46.0)	7 (11.1)
Tobacco use has been linked with cardiovascular (Heart) diseases	42 (66.7)	8 (12.7)	13 (20.6)
Tobacco use has been linked with cancer	29 (46.0)	18 (28.6)	16 (25.4)
Tobacco use increases the risk of infections	30 (47.6)	14 (22.2)	19 (30.2)
Tobacco use by a pregnant woman can cause reduced weight of the baby	27 (42.9)	6 (9.5)	30 (47.6)
Tobacco use has been linked with Gum and mouth diseases?	50 (79.4)	7 (11.1)	6 (9.5)
Tobacco use has been linked with Eye diseases and blindness?	18 (28.6)	43 (68.3)	2 (3.2)
Other peoples' Tobacco use can harm the health of nonsmokers	24 (38.1)	36 (57.1)	3 (4.8)
There is medical evidence that Cigarette smoking is harmful to your health	30 (47.6)	33 (52.4)	0 (0.0)
Knowledge grouping			
Satisfactory ($\geq 50\%$ [†])	24 (38.1)		
Not satisfactory ($< 50\%$ [§])	39 (61.9)		

[†]Got more than six questions right; [§]Got less than seven questions right



Smoking Cessation

Two-thirds of current smokers desired to quit smoking immediately. Approximately half had attempted to quit smoking at least once in the previous year (**Table 5**). Approximately 60% had never received smoking cessation assistance, while the other 40% received advice from friends and family. A health professional had never spoken to 67% of them about their smoking habit and its implications.

Table 5: Smoking cessation

	Current Smoker n(%)
Do you want to stop smoking now?	
No	22 (34.9)
Yes	41 (65.1)
During the past year, have you ever tried to stop smoking cigarettes?	
No	31 (49.2)
Yes	32 (50.8)
Do you think you would be able to stop smoking if you wanted to?	
No	3 (4.8)
Yes	60 (95.2)
Have you ever received help or advice to help you stop smoking?	
No	37 (58.7)
Yes, from a friend or family member	25 (39.7)
Yes, from a health program or professional	1 (1.6)
Has any health professional ever explained to you why smoking is dangerous to your health?	
No	42 (66.7)
Yes	21 (33.3)
Have you witnessed any religious organization discourage young people from smoking?	
No	19 (30.2)
Yes	44 (69.8)



DISCUSSION

Many of the current smokers (62%) were dual users. The prevalence of dual smokers was higher in our study than in many other studies (Martinez et al., 2021; Piper et al., 2019) because it was conducted only in a smokers population and not a combination of smokers and nonsmokers. Dual usage of tobacco products can delay and prolong the smoking cessation process, as dual smokers are exposed to an increased level of nicotine (Piper et al., 2019). As a result, special attention should be paid to smoking cessation programs tailored to dual users, as quitting tobacco use may be more difficult for dual users than for those who only smoke cigarettes.

Age at first cigarette smoking was comparable to previous studies in Nigeria (Abiola et al., 2016; Fawibe & Shittu, 2011). Smoking exposure at a young age can be attributed to lax government prohibitions on tobacco advertisement and promotion (Chido-Amajuoyi et al., 2017). Furthermore, these findings may point to the need for legislation prohibiting young people under the age of 21 from purchasing and using tobacco products. All current smokers in the current study, except for two, were introduced to smoking by a friend or peer. This was consistent with a systematic review of 19 African studies, which found that young people were 2.68 times more likely to smoke due to negative peer pressure (Leshargie et al., 2019). About 85% of the participants in our study still had close friends who smoked. As a result, the impact of peer pressure on smoking initiation and maintenance cannot be overstated.

In our study, 82% of current smokers smoked at home, potentially exposing other occupants to secondhand smoke. Furthermore, smoking at home may encourage children and adolescents to mimic such behavior, thereby promoting smoking initiation. Approximately 50% of the smokers smoked in public places, exposing others in the community to secondhand smoke. Boldness, courage, and pleasure were reasons the current smokers gave for smoking. Thus, tobacco awareness programs should aim to debunk some of the perceived benefits smokers claim they derive from smoking.

Current smokers' attitudes toward tobacco use are critical in determining their perception of cessation (Awopeju et al., 2013). More than half of the current smokers in this study thought it would be difficult to quit smoking once they started. This necessitates widespread tobacco use awareness and education as these programs can motivate people to quit smoking. Only half of the current smokers supported a ban on smoking in public places. This was lower than what Awopeju et al. (2013) and Awotedu et al. (2006) reported. This disparity could be explained by the fact that our study was conducted among commercial motorcycle riders, a population more predisposed to smoking outdoors, whereas theirs was conducted among university students and health professionals who sparingly smoke outdoors. Furthermore, their studies included both nonsmokers and smokers, whereas ours only included smokers. Smokers are more likely than nonsmokers to oppose anti-smoking legislation (Catalano & Gilleskie, 2021). We believe that current smokers have a poor attitude toward tobacco in general.

The knowledge results were consistent with previous studies assessing tobacco knowledge in various populations (Da Silva Leonel et al., 2021; Quintana et al., 2019). A significant number of current smokers lacked sufficient knowledge to recognize the potential health-related negative effects of tobacco use. About 70% were unaware that tobacco contains nicotine and is also a stimulant. Approximately 60% were unaware that it had toxicants that could harm the



body in various ways. Around 58% were unaware of the health consequences of secondhand smoke from their cigarettes.

The ultimate goal of assessing these current smokers' smoking behavior, attitude, and knowledge is to be able to help them quit smoking. Sixty-five percent (65%) of them wanted to quit smoking right away, while another 51% had tried to quit in the previous year. Our study's motivation rates were comparable to those found in other studies among current smokers (Klemperer et al., 2020; Zhou et al., 2009). The study's participants appeared to be highly motivated to quit smoking; however, the majority of them were unable to receive smoking cessation assistance from health professionals or smoking cessation programs. The development and implementation of smoking cessation interventions and programs in these populations have the potential to reduce smoking prevalence among them significantly. In addition, health professionals should be trained and provided with smoking cessation resources. These professionals can guide their patients on smoking cessation during hospital and clinic visits.

LIMITATIONS

Our study had some limitations:

- (1) Because we only sampled a small group of smokers who were commercial motorcycle riders in the Igboora community, our findings may not be generalizable to other parts of the country.
- (2) Because the responses were self-reported by the smokers, there is a possibility of recall bias.
- (3) Some of the nonsmokers who were excluded from the data extracted from the primary study might be smokers who decided to alter their smoking status.

STRENGTHS

Despite the limitations mentioned above, our study could provide baseline information that can guide policymakers in developing smoking cessation intervention programs among Nigerian commercial motorcycle riders who smoke.

RECOMMENDATIONS

We recommend that a larger study be conducted among smokers in this population and other vulnerable populations. Furthermore, we would advise considering qualitative research methods such as structured interviews and focus group discussions.



CONCLUSION

The attitude, behavior, and knowledge of current smokers who were commercial motorcycle riders were poor. Developing comprehensive smoking cessation interventions and programs for this vulnerable population could complement the high motivation to quit smoking we discovered among this vulnerable population.

CONFLICT OF INTERESTS

The authors declared that there is no conflict of interest.

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Author CRediT statement

- **Samuel Tundealao** – Conceptualization, Methodology, Investigation, Formal analysis, and Writing (Original draft preparation, review, and editing).
- **Oluwaferanmi Alufa** – Formal analysis and Writing (Original draft preparation).
- **Anusha Sajja** – Writing (Review and editing).
- **Tolulope Titiloye** – Writing (Review and editing).
- **Praise Okunola** – Writing (Review and editing).



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