KNOWLEDGE OF SMOKING INTERVENTION, CHARACTERISTICS OF SMOKERS, PERCEIVED BARRIERS AND FACTORS AFFECTING SMOKING CESSATION AMONG YOUNG ADULTS OF IMILIKE-ENU COMMUNITY IN UDENU LOCAL GOVERNMENT AREA OF ENUGU STATE

Ugwu Gloria Ngozi[*a], Okeke Chinyere C.[a], Osaeloka C.[a], Elvis Shu[b], Tilako Bello Halilu[c], Luke Oche Peter[d]

[a] Department of Community Medicine, College of Medicine, University of Nigeria, Enugu, Nigeria
[b] Department of Pharmacology and Therapeutics, College of Medicine, University of Nigeria, Enugu, Nigeria
[c] Medical Laboratory Services, State Ministry of Health, Gombe State, Nigeria
[d] Institute of Public Health, University of Nigeria, Enugu, Nigeria

[*]Correspondence: Ugwu Gloria Ngozi (ngoziugwu29@gmail.com)

ABSTRACT

Background: One of the most common forms of smoking in the world today is tobacco use, which is also one of the biggest causes of disease and death. The sharp rise in smoking rates in developing nations, such as Nigeria is alarming, especially in the rural areas. It is well established that people with lower incomes and low levels of educational attainment are more common in these rural communities. Very few studies have looked at knowledge of smoking intervention, characteristics of smokers, perceived barriers, and factors affecting smoking cessation among young adults in rural communities. This study evaluates the knowledge of smoking intervention, characteristics of smokers, perceived barriers, and factors affecting smoking cessation among young adults in rural communities.

Methods: The survey design employed was cross-sectional and 215 young adults of Imilike-Enu Community in Udenu Local Government Area of Enugu State were selected for the study using stratified random sampling. Data was collected through questionnaire, and SPSS version 23 was used for analysis and data was presented as frequencies and bivariate association.

Results: The knowledge of smoking intervention among young adults of Imilike-Enu was very low, as 74% of the smokers have no knowledge of any intervention, while 97% of them did not have access to any quit resources. However 94% had tried to quit using traditional medicine but could not succeed, while 67% had tried to quit this habit on their own but it always ended in vain. Their frequency of smoking was very high as 89% smoke every day while 65% have smoked for at least five years and above. Their main obstacles when trying to quit smoking are inadequate assistance from medical professionals (80%), fear of withdrawal (85%) and peer influence (85%).

Conclusion: The knowledge of smoking intervention in Imilike-Enu community is very low, serving as important barrier to cessation. This implies that there should be great support in establishing constant awareness programs by the government in every community.

Keywords: Smoking intervention, Smokers, Smoking Cessation, Young Adults, Imilike-Enu.

INTRODUCTION

The term "smoking" refers to the act of burning and inhaling substances such as tobacco, cocaine, marijuana, heroin, cigarettes, and Indian hemp, among others. It remains a significant public health concern and is considered one of the most preventable causes of morbidity and mortality worldwide [1]. If current global smoking trends persist, smoking-related illnesses are projected to result in over 8 million deaths annually by 2030, with more than 80% of these fatalities occurring in low- and middle-income countries (LMICs) [2] Smoking involves burning a substance and inhaling the resulting smoke to absorb it into the bloodstream. The inhalation of smoke, regardless of the substance, poses serious health risks. The partial combustion of plant material, such as tobacco, produces carbon monoxide, which reduces the oxygen-carrying capacity of blood when inhaled.

Tobacco smoking is one of the most common forms of smoking and is a leading cause of disease and death worldwide. The late 20th century saw a rapid increase in smoking rates in developing countries, leading to a sharp rise in smoking-related deaths in the 21st century. In the late 1990s, the World Health Organization (WHO) estimated approximately four million annual deaths from tobacco use. This number increased to around five million in 2003 and six million by 2011, with an anticipated rise to eight million by 2030. Notably, about 80% of these tobacco-related deaths are expected to occur in LMICs, particularly in rural areas, despite health, religious, and social influences discouraging tobacco use [3].

Smoking's origins can be traced back to 5000 BC, when Native Americans used it for ceremonial purposes and shamanistic rituals. Tobacco was introduced to Europe by Christopher Columbus in 1492 after his voyages to the West Indies. Historical accounts suggest that Queen Catherine of Medici of France used tobacco to alleviate stomach pain, naming it "Nicotiana" after Jean Nicot, who introduced it to her. Initially, tobacco was employed therapeutically to treat various ailments and was widely used by soldiers in major European wars as either snuff or for pipe smoking. Cigarette smoking gained popularity during the Crimean War, which led to the invention of the first cigarette machine in 1870, sparking the growth of major tobacco companies [4]. Research shows that the majority of adult smokers began smoking before age 18, and many developed an addiction before completing high school [5-8]. This trend underscores the importance of tobacco control efforts that also target young adults to reduce daily cigarette use [5].

Nigeria, the most populous country in Africa, is home to one of the continent's largest tobacco markets, with over 18 billion cigarettes sold annually. The National Tobacco Control (NTC) Act was enacted in 2015, replacing the WHO Framework Convention on Tobacco Control (FCTC) adopted in 2005, which regulated various aspects of tobacco control, including advertising, packaging, and smoke-free zones. However, despite this legislative progress, smoking rates in Nigeria continue to rise, especially among the youth, with cigarette smoking being the most prevalent form of tobacco use. Smoking is more common in rural areas where there are typically lower income and educational levels, as seen in communities such as Imilike-Enu in Udenu Local Government Area, Enugu State [9].

Nicotine dependence has been viewed as a neurobehavioral disorder for over two decades, posing a significant challenge to smoking cessation. Various behavioral, psychological, and environmental factors contribute to smoking. Behavioral factors include stress, lifestyle, and attitudes, while psychological factors encompass depression, anxiety, and low self-esteem. Environmental influences such as peer pressure, parental smoking, secondhand smoke exposure, and media advertisements also play roles in smoking initiation and continuation. Despite perceptions to the contrary, smoking neither improves health nor social status and does not offer economic benefits to society or the government [10]

Efforts to curb smoking have included global campaigns and laws, yet many countries still report high smoking rates. Nauru, for instance, has the highest smoking rate globally, with 52.1% of its population smoking, and a smoking rate of 48.5% as of 2020. With a population slightly over 10,000, this rate is alarming [11]. Lesotho leads Africa in tobacco use, with 26.7% of its population smoking as of 2019, and a current smoking rate of 24.3% [12]. In Nigeria, the South-East region reported the highest prevalence of smoking in 2013 at nearly 9%, but the North-East now holds the highest pooled prevalence at 43.6%, while the lowest is still seen in the South-East at 10.5%. High smoking rates persist in some rural South-East areas, such as Imilike-Enu [8].

Quitting smoking yields immediate health benefits, reducing risks of cancer and other severe health issues over time. However, most smokers who attempt to quit do so without success [13]. Past studies indicate that various interventions—such as the 5A's approach, 5R's, nicotine replacement therapies, and medications like Bupropion and nicotine patches—have been used to address smoking cessation challenges. Measures like anti-smoking laws, public awareness campaigns, and restrictions on the importation of tobacco and related products have been implemented by organizations like the WHO. Other initiatives include mass media campaigns, school programs, and policies aimed at curbing youth access to cigarettes. Despite these efforts, smoking persists, largely due to nicotine addiction [10]. Education and awareness about smoking's consequences are crucial for motivating smokers to quit. However, nicotine is highly addictive, and only about 4% of smokers who try to quit succeed without support. Professional help, including counseling and cessation programs, can more than double a smoker's likelihood of successfully quitting [14].

In this study, a participant is classified as a smoker if they smoked regularly within the 30 days before completing the survey and had smoked at least 100 cigarettes in their lifetime. Conversely, a non-smoker is someone who has not smoked in the past 30 days and either has never smoked 100 cigarettes or has done so but not in the last 30 days. Understanding the perceived barriers to quitting smoking is crucial for developing effective policies and tailored cessation interventions.

General Objective
The primary objective of this study was to evaluate the knowledge and characteristics of smokers, as well as their perceived barriers and factors influencing smoking cessation among young adults in the Imilike-Enu community, Udenu Local Government Area, Enugu State.

Specific Objectives
The specific objectives of this study were to:

1. Assess the knowledge of smokers regarding smoking cessation interventions in Imilike-Enu community, Udenu Local Government Area, Enugu State.
2. Examine individual attitudes and behaviors toward smoking in the community.
3. Identify the perceived barriers to smoking cessation among smokers in the community.
4. Determine the factors that impact smoking cessation efforts in the community.

LITERATURE REVIEW

A study conducted by Vance [15] assessed the effectiveness of smoking cessation interventions in rural and remote populations, emphasizing a variety of interventions proven beneficial for smoking cessation within these communities and the general public. These interventions included behavioral approaches such as individual face-to-face counseling and telephone counseling, as well as pharmacotherapy options like Nicotine Replacement Therapy (NRT), Varenicline, and Bupropion. A total of sixteen studies were reviewed. Meta-analysis revealed that individual face-to-face counseling significantly impacted smoking cessation (RR 2.35, 95% CI 1.16–4.76, I2=0%) in rural and remote populations. However, nicotine replacement therapy (RR 2.97, 95% CI 0.84–10.53, I2=47%), telephone counseling (RR 1.69, 95% CI 0.56–5.06, I2=62%), and community-based multiple interventions (RR 1.57, 95% CI 0.89–2.78, I2=85%) did not show statistically significant treatment effects. The certainty of evidence for each meta-analysis was very low. The study noted that tobacco consumption rates in remote communities were higher than in urban areas. Despite the limited availability of smoking cessation interventions in rural areas, personal or one-on-one counseling showed more promise compared to other intervention types. This may be due to the unfamiliarity with smoking cessation methods among rural smokers, who benefit from initial awareness and direct counseling before being introduced to other intervention strategies.

Trigg [16] highlighted that smoking rates are typically higher in rural, regional, and remote (RRR) areas of high-income countries than in urban centers. However, there is limited data on interventions targeting RRR smokers. This review discussed the effectiveness of smoking cessation interventions in promoting abstinence among RRR smokers, noting that smoking rates vary widely within and between countries. Compared to urban areas, rural, regional, and remote regions often report higher smoking rates. To achieve short-term abstinence and sustain it beyond six months, RRR smokers should be provided with both pharmacotherapy and psychological cessation counseling. Combining behavioral counseling with pharmacotherapy is recognized as the best practice in smoking cessation support. Surveys, however, indicate that rural smokers are much less likely to receive smoking cessation advice than urban smokers. Geographic and socioeconomic barriers make access to cessation support more difficult for rural residents. Additionally, Indigenous populations in rural areas face higher rates of smoking and overall mortality, underscoring the need for specific RRR-focused interventions like pharmacotherapy and psychological counseling, such as CBT, to support long-term abstinence. The study also noted the importance of implementing follow-up mechanisms to maintain smoking abstinence beyond six months.

Lasebikan [17] conducted a study on outdoor smoking in Nigeria, examining the prevalence, correlations, and predictors of smoking in a community in Ibadan, Nigeria, with a sample of 1,119 outdoor bars. One notable

predictor was depression, which hindered smoking cessation efforts. This study attributed the increasing prevalence of tobacco use, especially in rural Nigeria, to the aggressive marketing strategies of tobacco companies and the country's inadequate tobacco control policies. One hypothesis explaining the link between smoking and depression is the self-medication theory, suggesting that people with depression smoke to alleviate their distress. The study's findings highlighted the urgent need for public health interventions to mitigate the health risks associated with smoking, particularly as young smokers represent a productive segment of society.

Liang [18] environmental study on secondhand smoke (SHS), anti-smoking information, and the smoking status of parents and peers found that 80.5% of current smokers had received anti-smoking education in school, 74.9% were considering quitting due to the harmful effects of smoking, and 94.8% acknowledged that SHS is harmful. Additionally, 65.7% of current smokers reported having at least one parent who smoked, and 39.4% had friends who were smokers. The study also reported that 52.6% and 62.3% of participants were exposed to SHS at school and home, respectively, in recent days, and 23.8% had received free cigarettes from a tobacco company. Reducing SHS exposure could improve youth smoking behavior and enhance their willingness to quit.

METHODOLOGY

Area of Study

This study was conducted in Imilike-Enu, located in Udenu Local Government Area of Enugu State, Nigeria. Imilike-Enu is a town within the Nsukka senatorial zone in the southeastern part of Nigeria. It lies along the Enugu-Makurdi expressway, positioned between Orba and Obollo-Afor towns. Taking a right turn from Orba Junction, the community spans broadly between Orba and Igwugwu. Imilike-Enu comprises eleven villages: Amagu, Amaezike, Amaogodo, Amaetti, Amaebo, Amaelugwu, Abada, Okogwuma, Umueze, Umuochuiyi, and Umuinyere. Geographically, Imilike-Enu is bordered by Igwugwu to the north, Orba to the south, Ogbodu to the east, and Likee-Iheaka to the west.

Study Design

This study employed a cross-sectional survey research design. This approach was chosen because it involves studying a specific group of individuals at a single point in time using a series of structured questions. Each question is designed to gather specific information from a sample of respondents who are considered representative of the larger population [19].

Study Population

The study population consists of youths from the aforementioned villages, totaling approximately 7,400 individuals, based on records from the Igwe's palace.

Inclusion Criteria

Young adults between the ages of 20 and 35 years from these villages who were identified as addicted to smoking were included in the study. Additionally, other youths encountered at local drinking joints were also included.

Exclusion Criteria

Adolescents below the age range and individuals within the 20-35 age bracket who were not available during the study period were excluded.

Sample Size Determination

This was done using Charan[99] formula for calculating qualitative variable.

$$n = \frac{Z^2 pq}{d^2} \quad \text{where } q = (1\text{-}p)$$

Where;

n = minimum sample size

Z = 1.96 at 95% confidence limit

P =14.9% from the previous study by Oluwatomi[19] showing correlates current Nigerian smokers' quit intentions.

d =0.05 at 5% absolute error

Thus, $n = \dfrac{(1.96)^2 * 0.149 * (1 - 0.149)}{(0.05)^2}$

$n = \dfrac{3.8416 * 0.149 * 0.851}{0.0025}$

$n = 194.844 \sim 195$

$n = 195$

However, additional 10% was used to make provision for none-response which is 19.5. Therefore, a total of 214.5 ~215 respondents was the actual sample size.

Sampling Technique

A stratified random sampling technique was employed for this study. The population was divided into distinct strata based on shared characteristics such as age, sex, and residence. From each stratum, a simple random sampling method was subsequently applied to select an appropriate number of individuals, ensuring adequate representation across all groups. This approach minimizes sampling bias and facilitates the collection of more honest and accurate information, thereby enhancing the quality and reliability of the data collected.

Study Instrument

Data collection for this study utilized two main instruments: interviews and a semi-structured questionnaire. The interviews were conducted by the researcher to identify the number of smokers in the various villages within Imilike-Enu. The questionnaire was developed based on the study's objectives and comprised open-ended questions arranged into five sections. Section A gathered demographic information such as age, sex, and education level. Section B assessed smokers' knowledge of smoking cessation interventions, while Section C evaluated their attitudes and behaviors toward smoking. Section D explored perceived barriers to quitting smoking, and Section E examined factors influencing smoking cessation efforts. These instruments were designed to elicit comprehensive and accurate responses aligned with the study's goals. The instruments were validated by an expert panel.

Data Collection Procedure

A team of three trained research assistants was employed to ensure a standardized approach to data collection. Before the main study, a preliminary pilot test was conducted involving approximately forty participants from the Imilike-Ani community, although not from Imilike-Enu. This pilot test aimed to evaluate the clarity and relevance of the questionnaire items, which contributed to establishing the instrument's validity. The researcher, along with the assistants, traveled to each of the villages within Imilike-Enu to administer the questionnaires directly. This allowed for immediate collection of the completed instruments, thereby minimizing the risk of loss or misplacement of questionnaires. Each research assistant was responsible for guiding respondents through the questionnaire, clarifying any questions as needed, and ensuring that the data was accurately recorded. This comprehensive approach to data collection ensured the integrity of the information gathered for the study.

Data Analysis

The data collected was entered and analyzed using SPSS version 23, a statistical software program. To analyze the information, frequencies and percentages were calculated, and results were presented in tables for clarity. The Pearson Chi-square test was employed to evaluate the hypotheses, assessing the significance of associations between the variables.

Data Management

All questionnaires were securely stored in a locked cabinet throughout the study, with access restricted to the researcher to ensure confidentiality and prevent data loss. Data entry was initially conducted using Microsoft Excel and subsequently transferred to IBM SPSS for comprehensive analysis. Furthermore, all data stored on the computer was protected by a password.

Ethical Consideration

Ethical approval for this study was granted by the Health Research Ethical Committee of the University of Nigeria

Characteristics	Frequency	Percent (%)
Age		
<= 20 years	26	12.1
21-25 years	88	40.9
26-30 years	68	31.6
31-35 years	33	15.3
Mean ± SD(years)		
26±5.07		
Gender		
Male	205	95.3
Female	10	4.7
Religion		
Christianity	158	73.5
Islam	9	4.2
Traditional	26	12.1
None	22	10.2
Level of Education		
Primary	22	10.2
Secondary	119	55.3
Tertiary	74	34.4
Marital status		
Single	117	54.4
Married	71	33.0
Divorced	27	12.6
Ethnic Group		
Igbo	196	91.2
Hausa	11	5.1
Yoruba	8	3.7
Employment Status		
Unemployed	94	43.7
Self employed	83	38.6
Paid employment	38	17.7

Teaching Hospital (UNTH) Enugu. Additionally, permission was obtained from Igwe Felix to conduct the study within the community. Informed consent was secured from all participants who met the inclusion criteria, ensuring their understanding and willingness to participate in the research.

Analysis and Findings

A total of 215 young adult smokers from the Imilike-Enu community in Udenu Local Government Area of Enugu State were interviewed regarding several key variables, and their responses were recorded. Tables were utilized to present the frequency and percentage values of the various categories of variables examined in this study. Statistical tests of significance, specifically the Chi-square test, were conducted to assess the significance of associations between pairs of variables.

Characteristics	Frequency	Percent (%)
Age		
<= 20 years	26	12.1
21-25 years	88	40.9
26-30 years	68	31.6
31-35 years	33	15.3
Mean ± SD(years)		
26±5.07		
Gender		
Male	205	95.3
Female	10	4.7
Religion		
Christianity	158	73.5
Islam	9	4.2
Traditional	26	12.1
None	22	10.2
Level of Education		
Primary	22	10.2
Secondary	119	55.3
Tertiary	74	34.4
Marital status		
Single	117	54.4
Married	71	33.0
Divorced	27	12.6
Ethnic Group		
Igbo	196	91.2
Hausa	11	5.1
Yoruba	8	3.7
Employment Status		
Unemployed	94	43.7
Self employed	83	38.6
Paid employment	38	17.7

Table 1: Socio-demographic information of the respondents in Imilike-Enu community(n=215)

Of the 215 smokers that were interviewed, 40.9% were between the ages of 21 and 25 years while a very few of them (12.1%) were 20 years and below. 95% were males while only 5% were females. A larger number (74%) of them are Christians while a few number of them (10.2%) said they don't have any religion. 55% were secondary school certificate holders, 54% were married, 91% were Igbos by tribe, 54% were of low income group and lastly 44% were unemployed.

Table 2: Knowledge of smoking cessation interventions
(no of interviewed smokers=215)

Characteristics	Frequency	Percent (%)
Knowledge about intervention		
Yes	**56**	**26.0**
No	**159**	**74.0**
Intervention type		
Nicotine Replacement Therapy (NRT)	**28**	**13.0**
Buproion/Varenicline	**7**	**3.3**
Professional advice	**21**	**9.8**
None	**159**	**74.0**
Knowledge source		

Media	**28**	**13.0**
Internet	**13**	**6.0**
Professional advice	**15**	**7.0**
Others	**159**	**74.0**
Ever used trad. med. on quitting		
Yes	**13**	**6.0**
No	**202**	**94.0**
Knowledge of telephone quit line		
Yes	**31**	**14.4**
No	**184**	**85.6**

Findings from table 2 show that 74% of the smokers have no knowledge of any intervention programme, 13% said that they have heard of NRT programme. Those that have the knowledge said that they got to know about the intervention via the media. 94% said that they have tried to use traditional medicine such as acupuncture, Hypnotherapy, yoga etc before in order to quit the habit of smoking. 86% said that they have no knowledge whatsoever about telephone quit line.

Table 3a: Individual habit towards smoking (n=215)

Characteristics	Frequency	Percent (%)
Enjoy smoking		
a little	**36**	**16.7**
a lot	**119**	**55.3**
Somehow	**60**	**27.9**
Started smoking at early age		
Yes	**136**	**63.3**
No	**79**	**36.7**
Start age of smoking		
<20 years	**48**	**22.3**
20-25 years	**91**	**42.3**
>25 years	**76**	**35.3**
Tried quitting but unable		
Yes	**143**	**66.5**
No	**72**	**33.5**
Place of first smoking		
Home	**3**	**1.4**
School	**54**	**25.1**
Work place	**158**	**73.5**
First to smoke with		
Friends	**138**	**64.2**
Alone	**49**	**22.8**
Others	**28**	**13.0**
Frequency of smoking		
Weekly	**14**	**6.5**
Daily	**192**	**89.3**
Occasionally	**9**	**4.2**
Number of cigarette/day		
One	**10**	**4.7**
One-Five	**29**	**13.5**
Five-Ten`	**61**	**28.4**
Above Ten	**80**	**37.2**
Others	**35**	**16.3**
Have smoked for at least five years		

Yes	140	65.1
No	75	34.9
Wake up in the morning and start smoking		
Immediately	52	24.2
5-30 mins	106	49.3
One hour	14	6.5
Others	43	20.0

Table 3b: Individual habit towards smoking
(n=215)

Characteristics	Frequency	Percent (%)
Brand of tobacco		
Cigarette	101	47.0
Pipe	2	0.9
Snuff	6	2.8
Role-your-own	89	41.4
Others	17	7.9
Smoke even when sick		
Yes	13	6.0
No	135	62.8
It depends	67	31.2
Can smoke anywhere		
Yes	152	70.7
No	63	29.3

From table 3 above, we found out that 55% said that they do enjoy smoking a lot, 63% said that they started to smoke at the early stage of their life. 42% said that they started this habit when they were between twenty and twenty-five years. 67% of these smokers said that they have tried to quit this habit but it always ends in futility. 74% of them said that the habit of smoking started initially at their work place. 64% said the first set of people of people they smoked with were their friends. 89% of them said they do smoke everyday while 37% said that they do smoke more than ten sticks of cigarettes in a day. 65% said that they have smoked for at least five years and above. 49% of them said that they use to smoke within five to thirty minutes after waking up in the morning. 47% of them said that they love smoking cigarette while 42% that they love to smoke roll-your-own brands.62% of them said that they don't smoke when they are sick. 71% said that they can smoke anywhere they find themselves.

Measures of Associations
Table 4
Association between socio-demographic injunctions and smoking enjoyment
(n=215)

Variable	Smoking enjoyment				
	a little f (%)	a lot f (%)	Somehow f (%)	Chi-square Statistic	p-value
Age					
<= 20 years	26 (72.2)	0 (0.0)	0 (0.0)	273.89	0.000*
21-25 years	10 (27.8)	78 (65.0)	0 (0.0)		
26-30 years	0 (0.0)	42 (35.0	26 (44.1)		
31-35 years	0 (0.0)	0 (0.0)	33 (55.9)		
Gender					

				Chi-square	p-value
Male	**36 (100)**	**120(100.0)**	**49 (83.1)**	**27.73**	**0.000***
Female	**0 (0.0)**	**0 (0.0)**	**10 (16.9)**		
Level of Edu.					
Primary	22(61.1)	0(0.0)	0(0.0)	**269.09**	0.000*
Secondary	14(38.9)	105(87.5)	0(0.0)		
Tertiary	0(0.0)	15(12.5)	59(100.0)		
Religion					
Christianity	36(100.0)	120(100.0)	2(3.4)	**205.08**	0.000*
Islam	0(0.0%)	0(0.0)	9(15.3)		
Traditional	0(0.0%)	0(0.0)	26(44.1)		
Others	0(0.0%)	0(0.0)	22(37.3)		
Marital status					
Single	36(100.0)	81(67.5)	0 (0.0)	**140.95**	0.000*
Married	0(0.0)	39(32.5)	32(54.2)		
Divorced	0(0.0)	0(0.0)	27(45.8)		
Employment Status					
Unemployed	36(100.0)	58(48.3)	0(0.0)	**172.23**	0.000*
Self employed	0(0.0)	62(51.7)	21(35.6)		
Paid employment	0(0.0)	0(0.0)	38(64.4)		

*α=0.05, *=statistically significant*

Table 5

Association between socio-demographic injunctions and number of cigarettes consumed per day. (n=215)

Variable	Number of cigarettes consumed per day						
	One f (%)	**one-five** f (%)	**five-ten** f (%)	**above-ten** f (%)	**others** f(%)	**Chi-square** statistic	**p-value**
Age(years)							
<= 20	**10(100)**	**16(55.2)**	**0(0.0)**	**0(0.0%)**	**0(0.0)**	**458.2**	**0.000***
21-25	**0(0.0)**	**13(44.8)**	**61(100.0)**	**14(17.5)**	**0(0.0)**		
26-30	**0(0.0)**	**0(0.0)**	**0(0.0)**	**66(82.5)**	**2(5.7)**		
31-35	**0(0.0)**	**0(0.0)**	**0(0.0)**	**0(0.0)**	**33(94.3)**		
Gender							
Male	**10(100)**	**29(100)**	**61(100)**	**80(100.0)**	**25(71.4)**	53.94	**0.000***
Female	**0(0.0)**	**0(0.0)**	**0(0.0)**	**0(0.0)**	**10(28.6)**		
Level of Edu.							
Primary	10(100)	12(44.4)	0(0.0)	0(0.0)	Secondary	**0(0.0)**	254.36	0.000*
0(0.0)	17(56.6)	61(100)	41(51.3)			**0(0.0)**		
Tertiary	0(0.0)	0(0.0)0	(0.0)	39(48.8)	35(100)		
Religion							
Christianity	10(100)	29(100.0)	61(100.0)	58(72.5)	0(0.0)	**195.0**	0.000*
Islam	0(0.0)	0(0.0)	0(0.0)	9(11.3)0	0(0.0)		
Traditional	0(0.0)	0(0.0)	0(0.0)	13(16.3)	13(37.1)		
Others	0(0.0)	0(0.0)	0(0.0)	0(0.0)	22(62.9)		
Marital status							
Single	10(100)	29(100.0)	61(100.0)	17(21.3)	0(0.0)	**107.18**	0.000*
Married	0(0.0)	0(0.0)	0(0.0)	63(78.8)	8(22.9)		
Divorced	0(0.0)	0(0.0)	0(0.0)	0(0.0)	27(77.1)		
Widowed/ Widower	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)		
Employment Status							

Unemployed	10(100)	29(100)	55(90.2)	0(0.0)	0(0.0)	**379.796** **0.000***
Self employed	0(0.0)	0(0.0)	6(9.8)	77(96.3)	0(0.0)	
Paid employment	0(0.0)	0(0.0)		0(0.0)	3(3.8)	
35(100)						

*α=0.05, *=statistically significant*

Table 6: Association between socio-demographic injunctions and inability to quit smoking (n=215)

Variable	unable to quit smoking			
	Yes	No	chi-square	p-value
	f(%)	f(%)	statistic	
Age(years)				
<= 20	26(18.2)	0(0.0)	**140.33**	0.000*
21-25	88 61.5)	0(0.0)		
26-30	29(20.3)	39(54.2)		
31-35	0(0.0)	33(45.8)		
Gender				
Male	143(100)	62(86.1)	**20.83**	0.000*
Female	0(0.0)	10(13.9)		
Level of Edu.				
Primary	22(15.4)	0(0.0)	**206.27**	0.000*
Secondary	119(83.2)	0(0.0)		
Tertiary	2(1.4)	72(100)		
Religion				
Christianity	143(100)	15(20.8)	**154.05**	0.000*
Islam	0(0.0)	9(12.5)		
Traditional	0(0.0)	26(36.1)		
Others	0(0.0)	22(30.6)		
Marital status				
Single	117(81.8)	0(0.0)	**141.02**	0.000*
Married	26(18.2)	45(62.5)		
Divorced	0(0.0)	27(37.5)		
Widowed/widower	0(0.0)	0(0.0)		
Employment Status				
Unemployed	94(65.7)	0(0.0)	**124.883**	0.000*
Self employed	49(34.3)	34(47.2)		
Paid employment	0(0.0)	38(52.8)		

*α=0.05, *=statistically significant*

Table 7 Association between socio-demographic injunctions and feeling about smoking (n=215)

Variable	feelings after smoking				
	Bad f (%)	Good f (%)	High f (%)	Chi-square statistic	p-value
Age(years)					
<= 20	26(66.7)	0(0.0)	0(0.0)	**303.27**	0.000*
21-25	13(33.3)	67(100)	8(7.3)		
26-30	0(0.0)	0(0.0)	68(62.4)		
31-35	0(0.0)	0(0.0)	33(30.3)		
Gender					
Male	39(100)	67(100)	99(90.8)	**10.20**	0.000*
Female	0(0.0)	0(0.0)	10(9.2)		
Level of Edu.					

Primary	22(56.4)	0(0.0)	0(0.0)	**206.99**	0.000*
Secondary	17(43.6)	67(100)	35(32.1)		
Tertiary	0(0.0)	0(0.0)	74(67.9)		
Religion					
Christianity	39(100)	67(100)	52(47.7)	**75.43**	0.000*
Islam	0(0.0)	0(0.0)	9(8.3)		
Traditional	0(0.0)	0(0.0)	26(23.9)		
Others	0(0.0)	0(0.0)	22(20.2)		
Marital status					
Single	39(100)	67(100)	11(10.1)	**175.13**	0.000*
Married	0(0.0)	0(0.0)	71(65.1)		
Divorced	(0.0)	0(0.0)	27(24.8)		
Widowed/ Widower	0(0.0)	0(0.0)	0(0.0)		
Employment Status					
Unemployed	39(100)	55(82.1)	0(0.0)	**177.79**	0.000*
Self employed	0(0.0)	12(17.9)	71(65.1)		
Paid employment	0(0.0)	0(0.0)	38(34.9)		

*α=0.05, *=statistically significant*

Table 8: Association between socio-demographic injunctions and peer group influence. (n=215)

Variable	peer group influence			
	Yes	**No**	**chi-square**	**p-value**
	f (%)	**f (%)**	**statistic**	
Age(years)				
<= 20	26(18.1)	0(0.0)	**139.20**	0.000*
21-25	88(61.1)	0(0.0)		
26-30	30(20.8)	38(53.5)		
31-35	0(0.0)	33(46.5)		
Gender				
Male	144(100)	61(85.9)	**21.27**	0.000*
Female	0(0.0)	10(14.1)		
Level of Edu.				
Primary	22(15.3)	0(0.0)	**201.99**	0.000*
Secondary	119(82.6)	0(0.0)		
Tertiary	3(2.1)	71(100)		
Religion				
Christianity	144(100)	14(19.7)	**157.311**	0.000 *
Islam	0(0.0)	9(12.7)		
Traditional	0(0.0)	26(36.6)		
Others	0(0.0)	22(31.0)		
Marital status				
Single	117(81.0)	0(0.0)	**139.35**	0.000*
Married	27(19.0)	44(62)		
Divorced	0(0.0)	27(38)		
Widowed/ Widower	0(0.0)	0(0.0)		
Employment Status				
Unemployed	94(65.3)	0(0.0)	**125.12**	0.000*
Self employed	50(34.7)	33(46.5)		
Paid employment	0(0.0)	38(53.5)		

*α=0.05, *=statistically significant*
Table 9: Association between socio-demographic injunctions and smoke to get high.
(n=215)

Variable	smoke to get high				
	Yes	**No**	**others**	**chi-square**	**p-value**
	f (%)	**f (%)**		**statistic**	
Age(years)					
<= 20	26(15.5)	0(0.0)	0(0.0)	**167.14**	0.000*
21-25	88(52.4)	0(0.0)	0(0.0)		
26-30	54(32.1)	14(42.4)	0(0.0)		
31-35	0(0.0)	19(57.6)	14(100)		
Gender					
Male	168(100)	33(100)	4(28.6)	**150.58**	0.000*
Female	0(0.0)	0(0.0)	10(71.4)		
Level of Edu.					
Primary	22(13.1)	0(0.0)	0(0.0)	**114.61**	0.000*
Secondary	119(70.8)	0(0.0)	0(0.0)		
Tertiary	27 (16.1)	33(100)	14(100)		
Religion					
Christianity	158(94.0)	0(0.0)	0(0.0)	**311.16**	0.000 *
Islam	9(5.4)	0(0.0)	0(0.0)		
Traditional	1(0.6)	25(75.8)	0(0.0)		
Others	0(0.0)	8(24.2)	4(100)		
Marital status					
Single	117(69.6)	0(0.0)	0(0.0)	**170.58**	0.000*
Married	51(30.4)	20(60.6)	0(0.0)		
Divorced	0(0.0)	13(39.4)	14(100)		
Widowed/ Widower	0(0.0)	0(0.0)	0(0.0)		
Employment Status					
Unemployed	94(56.0)	0(0.0)	0(0.0)	**174.06**	0.000*
Self employed	74(44.0)	9(27.3)	0(0.0)		
Paid employment	0(0.0)	24(72.7)	14(0.0)		

*α=0.05, *=statistically significant*
Table 10: Perceived barriers to smoking Cessation by the young adults of Imilike-Enu community
(n=215)

Characteristics	Frequency	Percent (%)
Feeling about smoking		
Bad	**39**	**18.1**
Good	**67**	**31.2**
High	**109**	**50.7**
Not able to quit because of addiction		
Partially	**38**	**17.7**
Yes	**125**	**58.1**
No	**52**	**24.2**
Don't want to quit so as not to lose friends		
Yes	**141**	**65.6**
No	**74**	**34.4**
Haven't quitted as no support from health professionals		

	Frequency	Percent (%)
Yes	172	80.0
No	43	20.0
Have access to quit resources		
Yes	6	2.8
No	209	97.2
Fear of losing weight/falling sick if quit		
Yes	183	85.1
No	32	14.9

We found out from table 10 that 51% said that they use to feel high whenever they smoke, 58% said that they cannot quit because they are already addicted to it. 67% that they don't want to quit so as not to lose their friends, 80% said that they have not quitted because there has been no support from the health professionals.97% of them said that they don't have access to any quit resources while 85% said that they don't want to quit because of fear of losing weight or falling sick.

Table 11: Perceived factors affecting smoking Cessation (n=215)

Characteristics	Frequency	Percent (%)
Peer group influence		
Yes	**144**	**67.0**
No	**71**	**33.0**
Number of friends that smoke		
Less than half	182	84.7
All	33	15.3
Led by anger, depression and other unpleasant events		
Yes	97	45.1
No	76	35.3
Others	42	19.5
Do smoke to get high		
Yes	168	78.1
No	33	15.3
Others	14	6.5
Smoke to ease tension and worries		
Yes	160	74.4
No	55	25.6

From table 11, we found out that 67% of the smokers claimed that they were led to smoking through the influence their peer group. 85% said that less than half their friends do smoke. 45% said that they involved in smoking as a result of anger, depression and other unpleasant life events.78% of them said that they use to high whenever they smoke and lastly, 74% of the smokers said that they do smoke so as to ease out tensions and worries.

DISCUSSION

In this study, it was found out that the habit of tobacco smoking is prevalent among the teeming youths whose ages were between twenty-one and thirty-five years. This finding agrees with the view in a study that affirmed that Smoking has a significant negative impact on Nigerian youths, and it is critical that all stakeholders work collaboratively to target both in-school and out-of-school youths in tobacco control strategies[3]. Other numerous researches have been made and 95% of them discovered that majority of adult smokers began smoking before the age of 18, and many became addicted before graduating from high school and transit to adulthood[5,6,] Almost all of the smokers were men of young ages; Majority of these smokers said they have not heard anything called smoking cessation intervention before, only a few of them have heard about Buproion/Varenicline intervention via media. This finding implies that awareness on the dangers and risks accompanying tobacco smoking should be intensified by the public health practitioners. This finding is similar to a finding carried out by Domenica Matranga, Laura Maniscalco et al suggesting that including smoking cessation interventions in nurses' and nursing managers' education could improve nursing staff attitudes, beliefs, and knowledge about smoking cessation counseling, leading

to the inclusion of tobacco prevention and cessation as an integral part of public healthcare[18]. This study goes further by saying that nurses are on the front lines of treatment; one of the most effective smoking cessation strategies includes nursing care and advice. A lack of education on smoking cessation counseling may be harmful, and adequate smoking cessation training during healthcare studies is required. Many of these smokers said that they had wanted to stop this die hard habit, but have not been able to. Many claimed that they have used traditional means such as yoga, acupuncture, and hypnotherapy but have all ended in futility. Perhaps this addiction to tobacco smoking could have being as a result of the fact many of these smokers have no knowledge of the life-terminating risks that are attached to tobacco addiction. Therefore intensified efforts should be made by the public health practitioners to continuously extend their public health campaigns to Imilike-Enu community. By so doing, the risk of diseases and preventable deaths happening as a result of tobacco smoking addiction among the youths of this community can be curtailed.

There were several behaviors towards smoking discovered among the youths of Imilike-Enu community in this study. The most identified characters included smokers saying that they enjoy smoking a lot, starting smoking at the early age of their lives, and smoking at workplaces, can't avoid smoking in a day, smoking more than ten sticks of cigarette in a day and smoking within five to thirty minutes after waking up in the morning. A lot of these smokers said that they do smoke even when they are sick, can smoke anywhere including public places such in churches, public buses and taxis. These findings imply that if this trend of smoking habits amongst the youths of Imilike-Enu community is not curtailed, the toll of untimely death that may result from tobacco may be on the rise.[25] Efforts should therefore be intensified to ensure that these smokers are well oriented.

In this study, several barriers were identified as the factors contributing to inability of the smokers to quit the habit of smoking. The most prominent barriers were that a lot of the smokers said that they feel high whenever they smoke tobacco and that is why they don't want to quit, more than half of them that they cannot cease smoking because they are already addicted to it. A lot of these smokers said that if they quit smoking, they will lose their friends and therefore, the fear has made them not to quit. A lot of them said that they have not quitted smoking because there's no support from the health professionals. In line with Golechha M, Increased health promotion efforts regarding the negative health effects of smoking use may result in increased levels of knowledge about the harms of smoking, which may increase quit intentions and subsequent quitting among smokers users[19]. A lot of the smoking youth of Imilike-Enu community said that they are afraid of losing weight of falling sick if they cease from smoking. These categories of youth who are greatly addicted to this deadly habit are mostly found constituting nuisance to the community and the society at large including political thuggery, "agberos", hired assasins, "area boys",rapists armed robbers among others.

In this study, several factors affecting smoking cessation among the youth of Imilike-Enu community were identified including the influence of the peer group on the smokers, the number of friends of the smokers that also smoke, developing urge to smoke when angry or depressed, smoking to ease out tension and worries among others. This study seems to suggest that children who are raised up in an environment where these youths are predominant can easily be lured into the habit of smoking. Efforts should therefore be made by the parents to orient their children as to whom to and whom not to mingle with either in school or outside the school.

According to the findings of this study, there is a significant relationship between age of the smokers and smoking enjoyment as those that are between the ages of twenty-one and thirty years are noted to enjoy smoking a lot. Current smokers in their forties and fifties had a higher level of nicotine dependence than those in their twenties and thirties, indicating an inverse U-shaped relationship between nicotine dependence and age.(Huijie LI, Yunping ZHOU et al). There was a significant relationship between gender and smoking enjoyment as male smokers seem to enjoy smoking more than their female counterparts. According to a study conducted by Stephanie T. Lanza, Ph.D and Sara A. Vasilenko, Ph.D, the risk of adult nicotine dependence is highest when regular smoking begins around the age of 10 years, though the associated risk is high for ages of onset into young adulthood. Early onset of regular use is a risk factor that is more prevalent in adolescent females than in males. Smoking prevention programs should target late childhood and early adolescence, especially among females. The reason for the observed gender difference may be as a result of prevalence of female smokers in the study.

Level of Education was one of the factors that were significantly related to smoking enjoyment as majority of these smokers that said they enjoy smoking a lot are primary and secondary school holders. According to a study carried out by Adekunle Salaudeen, Omotosho Musa it was shown that Peer influence, parental influence, advertisement, and a low level of education are the main factors influencing adolescent smoking habits in Nigeria, ranging from 3.4% to 17.1% in secondary school. It was discovered from this study that the cigarette stick count a smoker

consumes in a day depends on the age at which he/she started to smoke. Impliedly from this study, the older a smoker becomes, the more the number of the sticks of cigarettes he/she smokes.

In this study also, level of education of smokers was found to be significantly related to several other variables including the start age of smoking, number of cigarette sticks consumed by a smoker per day, etc. The implications of these findings are that majority of the smokers that started to smoke at the early stage of their life are secondary school holders. This study is of the opinion that perhaps, these smokers after completing their secondary school educations were not thoroughly monitored by their parents and consequently they join gangs of smokers.

Employment status of these smokers was also significantly related to several variables including inability of a smoker to quit smoking despite all efforts, frequency of smoking (daily, weekly, occasionally), how a smoker feels after taking tobacco, etc. uncountable smokers are unable to quit the habit of smoking because they are unemployed. A similar study conducted by R De Vogli and M Santinello had it that Unemployed people were more likely to smoke than all other occupational groups (42.8% vs. 25.1% or less), whereas higher and lower managerial levels and professionals had the lowest prevalence of tobacco smoking (18.7% and 19.3%, respectively).A lot of smokers that said they could not avoid taking tobacco in a day are unemployed which implies that the frequency of tobacco smoking of a smoker depends largely on the employment status of the smoker. Majority of the smokers said that they do smoke even when they are sick in order to ease tension and worries as a result of their employment status. While majority of these unemployed smokers said that they feel so good and forget about their condition of unemployment when they consume tobacco, a lot of others said that they smoke to get high and in the process they are able to ease tension ad worries. This study seems to suggest that government at all levels should try to provide job for these youths and make education affordable if not totally free so that these promising youths will have access to formal education. By so doing, the proliferation of tobacco addition will be drastically reduced.

Also in this study, it was observed that religion, marital, and employment statuses were significantly related to smoking enjoyment. This implies that smoking is more prevalent among the Christians of Imilike-Enu community. This is as a result of the fact that the community in question is a Christian-dominated community. Efforts should therefore be made even in churches on the risks associated with smoking. Also in this study, it was found that the habit of smoking was so high among the single (unmarried) youth. This may be as a result of the fact they this category of youths doesn't have much responsibility to attend to. We discovered from this study that most of the smokers are self employed. This could be traced to the fact that these people work for themselves and no boss to restrict them from this addiction.

CONCLUSION

This paper has so far evaluated the knowledge and characteristics of smokers, perceived barriers, and factors affecting smoking cessation among young adults of the Imilike-Enu community in Udenu Local Government Area of Enugu State. The paper identified some obstacles to quitting smoking for the people of the communities. From the data collected from the respondents, it was observed that the majority of these smokers had not heard of the smoking cessation intervention approach created by the government before, only a few of them had heard about Nicotine Replacement Therapy (NRT) intervention through media. There were several characteristics/behaviors towards smoking discovered among the youths of Imilike-Enu community in this study. The most identified characteristics include household composition, educational attainments, social status, and socioeconomic position, these differences increase their enjoyment of smoking, a lot of them smoke anywhere they find themselves, and they even smoke when they are sick. These categories of youth who are greatly addicted to this deadly habit are mostly found constituting a nuisance to the community and the society at large such as armed robbers, political thuggery, hired assassins, area boys, rapists, etc. Children who are raised in an environment where these youths are predominant can easily be lured into these habits.

Some barriers to smoking cessation were identified by the respondents such as peer group, and addiction to nicotine, but lack of support from healthcare professionals was identified as their main barriers. This simply implies that there should be a need for great support in establishing awareness of an intervention that has been tested, trusted, and recommended by the World Health Organization in every community worldwide in order to wipe out obstacles to quitting smoking and tackle this virus called nicotine of which if not well address, our society will continue to experience these preventable premature death and chronic diseases associated with smoking.

RECOMMENDATIONS

The following recommendations based on the findings of this work are given for consideration:

1. A supportive environment is needed to encourage smokers in their attempt to quit. These can be accompanied by skillful programs for the youth of productive age in order to draw their attention, and this can be achieved through the help of the government or some big/affluence stakeholders in the community.
2. The Nigerian government should devise strategies and programs to educate young adult smokers about the dangers of smoking.
3. The country's government and health system should enforce various laws and regulations aimed at regulating smoking and its related products. Again, precautionary measures will be taken to arrest and prosecute young smokers under 18 years of age.
4. Parents and guardians should be educated on coaching their children on the negative consequences associated with this life-terminating risk that is attached to tobacco addiction.

Conflict of Interest: None

Role of Authors:

- **Ugwu G**.N: Responsible for the overall design and execution of the study, data collection, analysis. Also played a key role in formulating the research objectives and ensuring the integrity of the research process.
- **Okeke C.C**.: Provided guidance and oversight throughout the research process. Ensured that the study adhered to ethical standards and academic rigor, reviewed drafts of the report, and offered critical feedback on the methodology and findings.
- **Osaeloka C.**: Assisted in the design of the study and contributed to data collection and analysis.
- **Elvis S.**: Supported the research by assisting with data collection and providing insights during the analysis phase.
- **Tilako B.H**: Played a role in data collection and contributed to the analysis of the results.
- **Luke Oche Peterd (Contributing Author)**: Contributed to the manuscript writing by providing and participated in revising the document for clarity and coherence.

References

1. Adams TN, Morris J. Smoking. [Updated 2023 May 22]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK537066/
2. Blecher E, Ross H. Tobacco Use in Africa: Tobacco Control through Prevention. ICCP Portal,2013. https://www.iccp-portal.org › files › acspc-041294
3. Oyewole BK, Animasahun VJ, Chapman HJ. Tobacco use in Nigerian youth: A systematic review. PLoS One. 2018 May 3;13(5):e0196362. doi: 10.1371/journal.pone.0196362. PMID: 29723203; PMCID: PMC5933721.
4. Kaur J, A quantitative study to assess the knowledge and reasons of smoking among young people in Sweden,Master Thesis in Nordic Welfare, School of Health and WelfareHalmstad University, 2021. diva2:1528926; DiVA.org:hh-43880DiVA.
5. Barrington-Trimis JL, Braymiller JL, Unger JB, McConnell R, Stokes A, Leventhal AM, Sargent JD, Samet JM, Goodwin RD. Trends in the Age of Cigarette Smoking Initiation Among Young Adults in the US From 2002 to 2018. JAMA Netw Open. 2020 Oct 1;3(10):e2019022. doi: 10.1001/jamanetworkopen.2020.19022. PMID: 33021650; PMCID: PMC7539122.
6. Osuh ME, Fagbule OF, Olatunji YD. Prevalence and predictors of susceptibility and future intention to smoke cigarettes among school-going adolescents in Ibadan, Nigeria. Pan Afr Med J. 2020 Nov 11;37:230. doi: 10.11604/pamj.2020.37.230.24174. PMID: 33520069; PMCID: PMC7821788.
7. American Lung Association. Why Kids Stars Smoking, 2023. https://www.lung.org/quit-smoking/helping-teens-quit/why-kids-start-smoking.
8. Adeloye D, Auta A, Fawibe A, Gadanya M, Ezeigwe N, Mpazanje RG et al. Current prevalence pattern of tobacco smoking in Nigeria: a systematic review and meta-analysis. BMC Public Health 19, 1719 (2019).

9. Smoking and Rural Health, Fact Sheet, National Rural Health Alliance INC.2014. https://www.ruralhealth.org.au/sites/default/files/publications/nrha-factsheet-smoking.pdf

10. Silva LC, Araújo AJ, Queiroz ÂM, Sales MD, Castellano MV; Comissão de Tabagismo da SBPT. Smoking control: challenges and achievements. J Bras Pneumol. 2016 Jul-Aug;42(4):290-298. doi: 10.1590/S1806-37562016000000145. PMID: 27832238; PMCID: PMC5063447.

11. 10 Countries Where People Smoke The Most, World Atlas, 2023. https://www.worldatlas.com/society/10-countries-where-people-smoke-the-most.html

12. Gelder KV, Prevalence of tobacco users by African countries in 2019, Consumer Goods & FMCG› Tobacco, Statista, 2022. https://www.statista.com/statistics/1038449/prevalence-of-tobacco-users-african-countries/

13. Prochaska J J. Smoking Cessation , Stanford Prevention Research Center, Stanford University. Healthy Living Reviewed/Revised Dec 2020 | Modified Sep 2022.https://www.msdmanuals.com/home/special-subjects/tobacco-use/smoking-cessation

14. World Health Organization (WHO),"Tobacco", 2023. https://www.who.int/news-room/fact-sheets/detail/tobacco

15. Ponto J. Understanding and Evaluating Survey Research. J Adv Pract Oncol. 2015 Mar-Apr;6(2):168-71. Epub 2015 Mar 1. PMID: 26649250; PMCID: PMC4601897.

16. Vance L, Glanville B, Ramkumar K, Chambers J, Tzelepis F. The effectiveness of smoking cessation interventions in rural and remote populations: Systematic review and meta-analyses. Int J Drug Policy. 2022 Aug;106:103775. doi: 10.1016/j.drugpo.2022.103775. Epub 2022 Jun 27. PMID: 35772266.

17. Trigg J, Skelton E, Lum A, Guillaumier A. Smoking Cessation Interventions and Abstinence Outcomes for People Living in Rural, Regional, and Remote Areas of Three High-Income Countries: A Systematic Review, Nicotine & Tobacco Research, 2023; ntad098, https://doi.org/10.1093/ntr/ntad098

18. Lasebikan V, Lasebikan T, Adepoju S. Outdoor smoking in Nigeria: prevalence, correlates and predictors. BMC Public Health. 2019 Oct 21;19(1):1313. doi: 10.1186/s12889-019-7601-8. PMID: 31638945; PMCID: PMC6802310.

19. Liang YC, Liao JY, Lee CT, Liu CM. Influence of Personal, Environmental, and Community Factors on Cigarette Smoking in Adolescents: A Population-Based Study from Taiwan. Healthcare (Basel). 2022 Mar 14;10(3):534. doi: 10.3390/healthcare10030534. PMID: 35327011; PMCID: PMC8951170.

20. Charan J, Biswas T. How to calculate sample size for different study designs in medical research? Indian J Psychol Med. 2013 Apr;35(2):121-6. doi: 10.4103/0253-7176.116232. PMID: 24049221; PMCID: PMC3775042.

21. Iken O, Cadmus E, Ahmed B. Correlates of quit intentions among current Nigerian smokers: Evidence from the 2012 Global Adult Tobacco Surveys (GATS). Tob Prev Cessat. 2020 Feb 18;6:13. doi: 10.18332/tpc/115168. PMID: 32548350; PMCID: PMC7291887.

22. Howell CR, Su W, Nassel AF, Agne AA, Cherrington AL. Area based stratified random sampling using geospatial technology in a community-based survey. BMC Public Health 20, 1678 (2020).

23. Maniscalco L, Barretta S, Pizzo G, Matranga D. Knowledge and attitudes towards smoking cessation counselling: an Italian cross-sectional survey on tertiary care nursing staff. PeerJ. 2021 Oct 15;9:e12213. doi: 10.7717/peerj.12213. PMID: 34721965; PMCID: PMC8522640.

24. Golechha M. Health Promotion Methods for Smoking Prevention and Cessation: A Comprehensive Review of Effectiveness and the Way Forward. Int J Prev Med. 2016 Jan 11;7:7. doi: 10.4103/2008-7802.173797. PMID: 26941908; PMCID: PMC4755211.