KNOWLEDGE, PERCEPTION REGARDINGTHE EFFECT OF TOBACCO USE AND CESSATION PRACTICES: A CASE STUDY FROM COLLEGE OF HEALTH TECHNOLOGY STUDENTS, LAGOS STATE, NIGERIA

ABSTRACT

The study is the investigation of knowledge, perception regarding the effect of tobacco use and cessation practices among students of Lagos state college of health technology in Yaba mainland local government area. Snowball sampling techniques selected by Lagos State, Nigeria, and 200 respondents. A structured and validated questionnaire was used to elicit information from the respondents.

The study adopted a descriptive cross-sectional study design. Demographic data were analyed using frequencies and percentages in tabular form to test demographic data of the respondents with chi-square (x^2) analysis was used to test the hypothesis at 0.005 level of significance.

The result revealed that majority of the students knows that tobacco use has harmful effects on its users, while few have a perception about tobacco use cessation techniques and majority have the positive perception that role modeling of health professionals on cessation practices plays an important role in patients quitting tobacco use.

Based on these findings, some recommendations were suggested among which are the urgent need of Government to enhance the synergy between the Ministry of Health and Ministry of Education so as to include cessation techniques in the training curricula of health professionals as well as the development of improved and effective enforcement and compliance on cigarette ban in public places.

Keyword: *knowledge, perception, tobacco use and cessation practices*

1. INTRODUCTION

Tobacco use is one of the major preventable causes of untimely death, disease, and disability, which accounts for a significant percentage of various health inequalities around the earth. (Ezzati, M al 2002). It is ranked 6 out of 8 top causes of death in the world. Tobacco use comprises of the smoking and non-smoking tobacco products; Tobacco smoking is a custom harmful to the eyes, odious to the nose, dangerous to the brain and harmful to the lungs. It poses colossal health and non-health related costs to the affected persons and society at large.

In many modern societies, smoking tobacco is an accepted habit with adults of all ages and sexes. The practice used to be socially acceptable in Europe and the United States but is less so now (Brar et al., 2022). Laws have been passed in some American States restricting smoking, and people can no longer smoke in public places like bars, restaurants, and clubs. (Shafey et al, 2012) In Africa, similar laws that are supposed to be in effect have remained on

paper, and there is minimal enforcement where people can or cannot smoke (Weiss et al., 2020; Gallaway et al., 2019).

Therefore, a lower awareness of the dangerous effects of smoking is just one of the many reasons for the higher predominance of smoking among lower socio-economic groups. A successful strategy for controlling tobacco use for disadvantaged groups should address their living conditions and social environment and inform them about the effects of smoking on health.

2. METHODOLOGY

Research Design

A descriptive research design was adopted in conducting this study. It was used to carry out design in order to allow relevant instruments to be identified, evaluated and summarized.

Study design

The study was a descriptive cross-sectional study design to assess the knowledge, perception regarding the effect of tobacco use and cessation practices among students of Lagos State College of Health Technology in Yaba local government area.

Study population

The study population comprises of individuals who use tobacco and are students of Lagos State College of Health Technology.

Sample size determination

The sample size (n) was calculated using the Cochran's sample size formula

$n = \frac{Z^2 pq}{d^2}$. (Cochran WG, 1997)

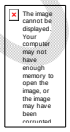
Where n = minimum sample size when target population n $\geq$10,000

z= standard normal deviate at 95% confidence = 1.96

p=the proportion in the target population estimated to be current tobacco users in Nigeria = 16.7% (GATS, 2012)

q= 1-p=proportion of the target population estimated to be non-tobacco users: 1- 0.167=0.833
d=margin of error=5%=0.05

Applying this formula:

n = 

$$n = \frac{z^2 p q}{d^2} = \frac{1.96^2 \times 0.167 \times 0.833}{(0.05)^2}$$

$$= \frac{3.84 \times 0.167 \times 0.833}{0.0025}$$

$= \frac{0.534}{0.0025}$

n = 213 respondents (smokers)

With reference to population under investigation

N = Population of students in the College of Health Technology = 1,193

n= Calculated minimum sample size from the Cochran formula

n_f =Calculated sample size relative to study population

$n_f = \frac{n}{\text{Expected response rate}}$

n_f = 

$= \frac{213}{1+\frac{213}{1193}}$

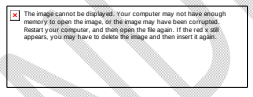
$= \frac{213}{1+0.18}$

$= \frac{213}{1.18}$

= 180 respondents (smokers)

Adjusting for non- response

To compensate for questionnaire that may not be completely filled will be set at 10%

na = 

$na = \frac{nf}{0.90} = \frac{180}{0.90}$

= 200 respondents (smokers)

Sampling methodology

Methodology

The study is a multi-stage sampling method and a sample frame designed for each level of students, and the respondents were selected using the snowball sampling method: The snowball sampling method is a non-probability sampling technique used to identify potential

respondents (i.e., smokers); whereby participants identified and invited other possible potential respondents.

Data collection tool and techniques

A pre-tested, structured interviewer-administered questionnaire developed from modified version of the global health professional surveys core questionnaire which was developed from global adult tobacco survey and validated by collaboration of centres of Disease Control and Prevention(CDC) ,World Health Organization , CDC Foundations, John Hopkins Bloomberg School of Public Health(JHSPH) and Research Triangle Institute(RTI)will be used for the data collection. The questionnaire will be designed to obtain information on

Data collection

The data was collected among students of Lagos State College of Health Technology in July 2016 after modification and adjustment of the pre-tested questionnaire as a result of discrepancies obtained during the pre-test. The researcher collected data and assisted by the 8 participants (respondents)

Data analysis

The data collected were analyzed using the Statistical Package for Social Sciences version 20.

Data presentation

Quantitative data are presented with frequency tables and charts, percentages, means, and standard deviation were determined, chi-square was used to compare variables confidence, the interval the was set at 95%, and statistical tests were considered significant at p values less than 0.05.

3. RESULTS AND DISCUSSION

Table 1
Respondents patterns of tobacco use

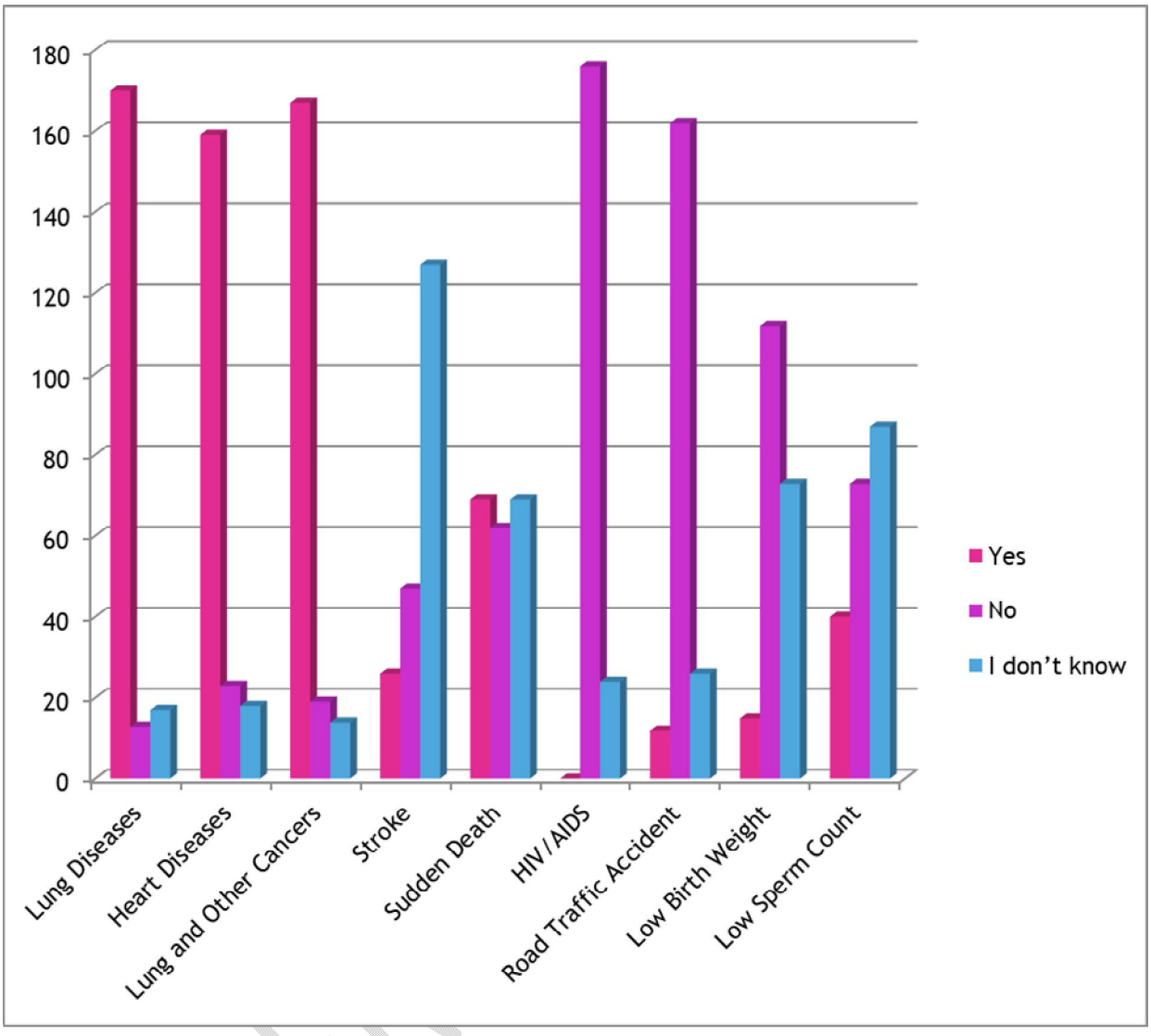
Age Range(Yrs) Frequency	**Below 14 Daily**	**14-18 Weekly**	**19-25 Monthly**	**26-30 Occasionally**	**Total**
Age of First Smoked	0	178	22	0	200
Percentage (%)	0.0	89.0	11.0	0.0	100%
Responses	195	0.0	0.0	5.0	200
Observed	97.5	0.0	0.0	2.5	100%
Expected	195	0	0	5	200
Percentage(%)	97.5	0.0	0.0	2.5	100%
Average Per Day/Sticks	1	2	3	4-10	Total
Observed	32	7	64	97	200
Percentage %	16	3.5	32	48.5	100%
Average Per Week/Sticks	**8-14**	**15-21**	**22-28**	**29-30**	**Total**
Observed	**32**	**7**	**64**	**97**	**200**
Percentage%	**16**	**3.5**	**32**	**48.5**	**100%**

Mean Age ± S.D 16.7 ± 1.88

Table 2 Respondents knowledge regarding the effect of tobacco use

STATEMENT Frequency (100%)	**Yes**	**No**	**I do not know**	**Total /(%)**
Harmful to health	183(91.5)	17(8.5)	0 (0.0)	200(100)
Second-hand smoke is harmful to health	174(87.0)	10(5.0)	16 (8.0)	200(100)
Diseases associated with smoke:				
Lung Diseases	170(85.0)	13(6.5)	17 (8.5)	200(100)
Heart Diseases	159(79.5)	23(11.5)	18 (9.0)	200(100)
Lung and other cancer	167(83.5)	19(9.5)	14 (7.0)	200(100)
Stroke	26(13.0)	47(23.5)	127(63.3)	200(100)
Sudden Death	69(34.5)	62(31.0)	69(34.5)	200(100)
HIV/AIDS	0(0.0)	176(88.0)	24(12.0)	200(100)
Road Traffic Accident	12 (6.0)	162(81.0)	26(13.0)	200(100)
Low birth weight in female smokers children	15(7.5)	112(56.0)	73(36.5)	200(100)
Low Sperm counts	40(20.0)	73(36.5)	87(43.5)	200(100)

Fig .1 Chart for respondents knowledge regarding effects of tobacco use.



The overall percentage grading of respondents knowledge regarding the health effects of tobacco use was found to be 55.5% which is scored fair knowledge, while 28.7% was scored poor knowledge and I do not know 15.8% neutral on lung, heart, lung and other diseases, low birth weight from pregnant smoker and low sperm count for male sexual dysfunction.

For stroke, HIV, road traffic accidents, 6.3% out of the respondents affirmed that these could be the health effects of tobacco use and this was rated poor knowledge regarding the health effect of tobacco use, while 67.6% affirmed negative and 59% were neutral; this is rated poor overall knowledge.

Table 3: Respondents knowledge regarding the effect of tobacco use

Responses	yes	no	total
Observed	183	17	200
%	91.5	8.5	100
Expected	100	100	200
%	50	50	100

Agree	183	91.5
Disagree	17	8.5
Total	200	100.0

X^2 value= 0.000; P 0.05 (significant) df =1

As shown in table three, 183 subjects representing 91.5% agreed that knowledge regarding the effect of tobacco use would not significantly promote the knowledge, perception regarding the harmful effect of tobacco use and cessation practises among students of LASCOHET in Yaba Mainland Local Government area of Lagos State.

Therefore, it can be concluded that knowledge regarding the effect of tobacco use will not significantly promote the knowledge, perception regarding the harmful effect of tobacco use and cessation practices among students of LASCOHET in Yaba mainland local government area of Lagos state.

Table 4 Respondents level of tobacco use

Age range(yrs) **Frequency**	**Below 14** **Daily**	**14-18** **Weekly**	**19-25** **Monthly**	**26-30** **Occasionally**	**Total**
Age of first smoked	0	178	22	0	200
Percentage(%)	0.0	89.0	11.0	0.0	100%
Responses	195	0.0	0.0	5.0	200
Observed	97.5	0.0	0.0	2.5	100%
Expected	195	0	0	5	200
Percentage(%)	97.5	0.0	0.0	2.5	100%
Average per day/sticks	1	2	3	4-10	Total
Observed	32	7	64	97	200
Percentage %	16	3.5	32	48.5	100%
Average per week/sticks	**8-14**	**15-21**	**22-28**	**29-30**	**Total**
Observed	**32**	**7**	**64**	**97**	**200**
Percentage%	**16**	**3.5**	**32**	**48.5**	**100%**

Mean Age ± S.D 16.7 ± 1.88

table 5: Respondents level of tobacco use

Responses	Yes	know	Total
Observed	183	17	200
%	91.5	8.5	100
Expected	100	100	200
%	50	50	100

	Daily	Occasional	Total	%
Agree	179	4	183	91.5%
Disagree	16	1	17	8.5%
Total	195	5	200	100.0%

X^2 value= 0.000; P 0.05(significant) df = 3

As shown in table five, 183 subjects representing 91.5% agreed that the level of tobacco use cessation practices would not significantly promote the knowledge, perception regarding the harmful effect of tobacco use and cessation practises among students of LASCOHET in Yaba Mainland Local Government area of Lagos State.

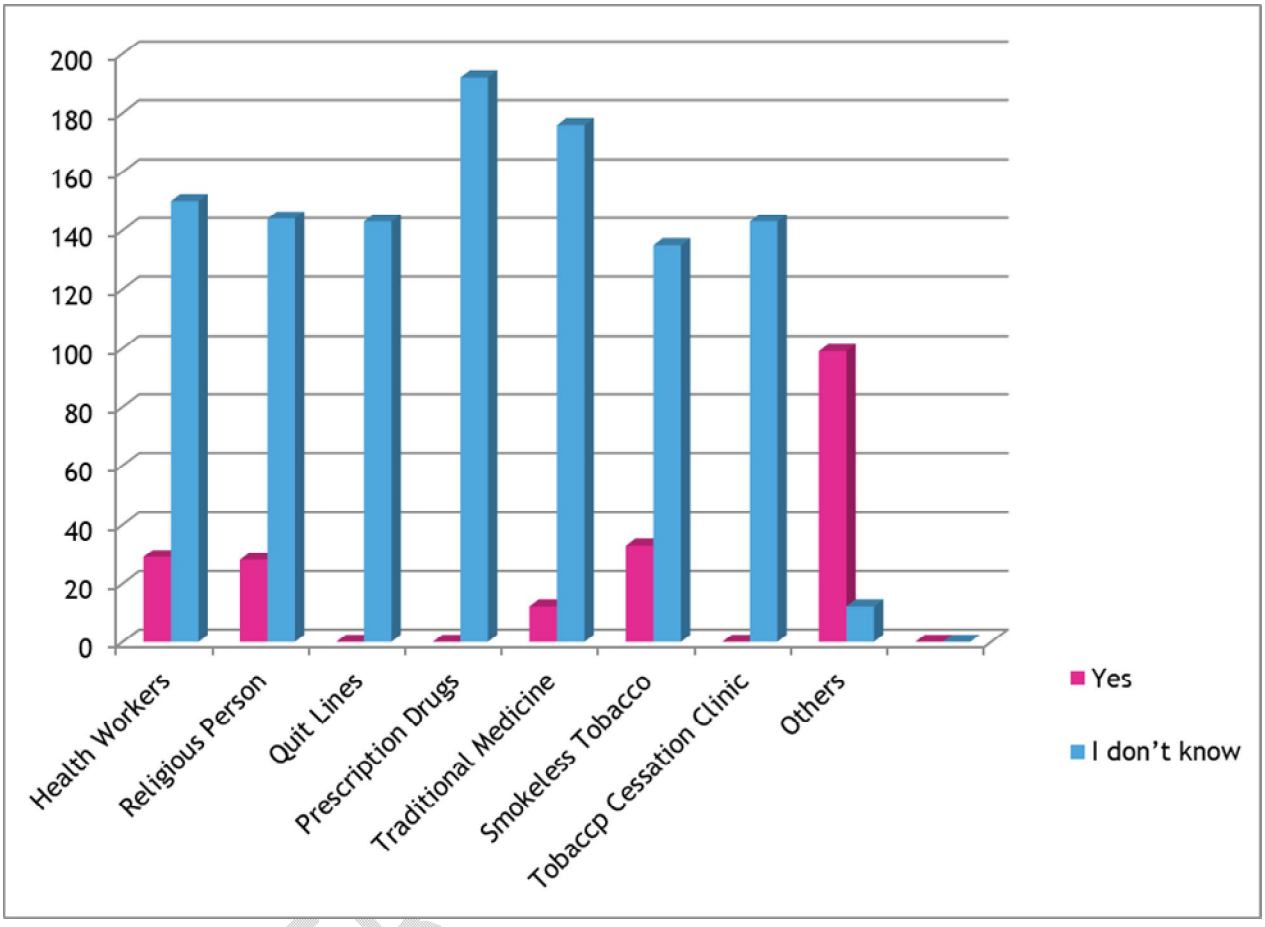
On the other hand,17 subjects representing 8.5% disagreed in their opinion on the issue.

The data were subjected to chi-square analysis X^2 test for acceptance or non- acceptance of the hypothesis.The obtained chi-square value at df 3, and the significant level of 0.05 is 0.000. Since the obtained P value X^2 is less than < 0.05, the hypothesis is rejected. Therefore, it can be concluded that the level of tobacco use cessation practices will significantly promote the knowledge, perception regarding the harmful effect of tobacco use and cessation practises among students of LASCOHET in Yaba Mainland Local Government area of Lagos State.

Table 6
Perception of tobacco use cessation practices

Statement	**Frequency(100%)**			
	Yes		**No**	**IDont Know**
Ever tried to stop smoking during the past year,	79 (39.5)		121(60.5)	0 (0.0)
Ever tried to stop using tobacco now	50 (25.0)		71 (35.5)	79 (39.5)
If Yes,Why?	Health reason		It wastes money	To please family
	25 (12.5)		10 (5.0)	15 (7.5)
If No,Why?	I don't want to stop		Nothing bad to stop	Addiction/ Withdrawal
	25 (12.5)		29 (14.5)	17(8.5)
Quit period	Not stopped	<1mnth	1-5mnths	6-11mnths
	9 (4.5)	5 (2.5)	4 (2.0)	5 (2.5)
	1year		2years	> 3years
	2 (2.0)		2 (2.0)	1(0.5)
Help /Advice to stop tobacco use	Program	Friend	Family	Professional
	6(3.0)	72 (36.0)	10 (5.0)	6(3.0)
	Program/ Professional	Professional/family/friend		None
	6 (3.0)	6 (3.0)		100
Ever heard of Nicotine Replacement Therapy/ others	**Yes**	**No**		**Don't Know**
	20	60		120

Fig.2 Chart for table 6 on the perception of tobacco cessation practices among the respondents.



Yes denotes good: No denotes poor: I do not know: denotes neutral

The negative perception regarding respondents on tobacco cessation approaches from health worker was rated poor perception because only 20%(health worker),10%Prescription drugs,35% tobacco cessation clinic with good knowledge, hence poor scoring on perception of tobacco use cessation practices; While the positive perception (25%) health workers, 3%prescription drugs, (1%) tobacco cessation clinic with overall percentage scoring of 35,5%positive perception on tobacco use

Grading of respondent's overall perception of tobacco use cessation practices

39.5 % of the respondents surveyed had a good perception of tobacco use cessation while 60.5% have a poor perception of tobacco cessation practices.

List 1: Grading of respondent's overall perception of tobacco use cessation practices

Perception Grade	Frequency	Percentage (%)
Good	79	39.5
Poor	121	60.5
Neutral	0	0.0
Total	200	100.0

table 7: Respondents perception of tobacco use cessation practices

Responses	Yes	no	I do not know	Total
Observed	50	71	79	200
%	25.0	35.5	39.5	100
Expected	66. 67	66.67	66.67	200
%	33.33	33.33	33.33	100.0

Agree	50	25.0
Disagree	71	35.5
Neutral	79	39.5
Total	200	100.0

X^2 value= 0.035; P 0.05(significant) df = 2

As shown in table seven, 50 subjects representing 25%, agreed that perception of tobacco use cessation practices will not significantly promote the knowledge, perception regarding the harmful effect of tobacco use and cessation practices among students of LASCOHET in Yaba Mainland Local Government area of Lagos State.

On the other hand, 71 subjects representing 35.5%disagreed, while 79 subjects are representing 39.5%were neutrals in their opinion on the issue.

The data were subjected to chi-square analysis X^2 test for acceptance or non- acceptance of the hypothesis. The obtained chi-square value at df 2 and the significant level of 0.05 is 0.035. Since the obtained P value X^2 is less than < 0.05, the hypothesis is rejected. Therefore, it can be concluded that perception of tobacco use cessation practices will significantly promote the knowledge, perception regarding the harmful effect of tobacco use and cessation practises among students of LASCOHET in Yaba Mainland Local Government area of Lagos State.

Table 8: Perception of role modelling in tobacco cessation practices

Statement	Frequencies (%)		
	Yes	**No**	**I do not know**
Should you be involved in the use of any tobacco products	3 (21.5)	67 (33.5)	90 (45.0)
Do you serve as a role model for patients and the public	98 (49.0)	25 (12.5)	77 (38.5)

As a tobacco smoker, is it less likely to advise patients to stop smoking	31 (15.5)	66 (33.0)	103 (51.5)
As a user of other tobacco products (chewing tobacco, snuff, cigars/ pipes), is it likely to advise patients to stop smoking	37 (18.5)	2 (1.0)	1 (0.5)
Should information on tobacco use Be taken while taking patients' history	147 (23.5)	13 (6.5)	40 (20.0)
Should you get specific training on Tobacco cessation techniques	138 (69.0)	10(5.0)	52 (26.0)
Should medical professionals be role models by being non-smokers to advise their patients smoking cessation?	99 (50.0)	25 (12.5)	76 (37.5)
Should all medical schools have smoking cessation clinics with facilities for counseling, treatment & follow-up?	146 (22.5)	13 (6.5)	41 (21.0)
Should smoking amongst medical teachers and students be the main obstacle in effectively implementing tobacco education?	40 (20.0)	13 (6.5)	147 (23.5)
Does the current curriculum teach adequately about the health effects of active and passive smoking?	138 (69.0)	10(5.0)	52 (26.0)
Should you routinely advise Patients who smoke to quit	174 (87.0)	26 (13.0)	0.(0.0)
Does the current curriculum teaches about clinical guidelines, tobacco cessation methods and its contraindications.	147 (23.5)	13 (6.5)	40 (20.0)
Should you routinely advice patients who use other tobacco products to quit using these products	148 (74.0)	26 (13.0)	26 (13.0)
Role in giving advice /information on smoking cessation to patients	138 (69.0)	13 (6.5)	39 (19.5)
Are a patient's chances of quitting smoking increased if health Professional advice him or her to quit	127 (63.5)	32 (16.0)	41 (20.5)

Does your religion support the use Of any tobacco products	168 (84.0)	0(0.0)	32 (16.0)
Do you serve as 'role models for patients	195 (97.5)	5 (5.0)	0 (0.0)
Role in advising patients	187(93.5)	9(5)	4(2.0)
Chances of patients quitting	17(85.5)	10(5.0)	19(9.5)

Finally, the participants were requested of their readiness to make available assistance to patients who like to stop smoking and 31(15.5%) responded positively in providing help to patients. 138 (69%) responded positively to getting specific training on tobacco cessation techniques and giving advice and information about smoking cessation(Table 8).

More than three quarter 148 (71%) responded positively to advise patients who use other tobacco products to quit the use. The respondents 127(63.5%) agreed that the chances of patients to quit smoking are high if a health professional advice.

For questions about tobacco education in the health professionals' curricula, only 33.33% sensed that they are being educated satisfactorily about the health effects of smoking, and tobacco cessation methods. Approximately 50% of the students felt that they should be educated about tobacco cessation methods, including counselling; recent training about tobacco smoking is not methodical and incorporated with other disciplines.

Almost half of the students approved that health professionals curricula should include a distinct module about tobacco education. Three-quarters of the students from agreed about teaching tobacco cessation, and counseling, in a separate module of the health professionals' curriculum.

table 9: Perception of role modelling in the tobacco cessation practices

Responses	**Yes**	**Know**	**I do not know**	**Total**
Observed	99	24	77	200
%	49.5	12.0	38.5	100
Expected	66. 67	66. 67	66. 67	200
%	33.3	33.3	33.3	100

Agree	99	49.5%
Disagree	24	12.0%
Neutral	77	38.5%
Total	200	100.0

X^2 value= 0.00; P 0.05(significant) df = 2

As shown in table nine, 99 subjects representing 49.55%, agreed that the perception on role modelling in the tobacco use cessation practices would not significantly promote the knowledge, perception regarding the harmful effect of tobacco use and cessation practises among students of LASCOHET in Yaba Mainland Local Government area of Lagos State.

On the other hand, 24 subjects representing 12.0% disagreed, while 77 subjects representing 38.5% were neutral in their opinion on the issue.

The data were subjected to chi-square analysis X^2 test for acceptance or non- acceptance of the hypothesis. The obtained chi-square value at df 2, and the significant level of 0.05 is 0.000. Since the obtained P value X^2 is less than < 0.05, the hypothesis is rejected. Therefore, it can be concluded that the perception on role modelling in the tobacco use cessation practices will significantly promote the knowledge, perception regarding the harmful effect of tobacco use and cessation practises among students of LASCOHET in Yaba Mainland Local Government area of Lagos State.

Table 10: Relationship between socio-demographic characteristics and knowledge on the health effect of tobacco use

Frequency % **Socio-demographic Characteristics**	**Good (n=183)**	**Poor (n=17)**	**Statistical test**
Age Mean ± SD	27.2 ± 4.04		t=29.14 p=0.000
Gender			
Male	157	17	X^2 =110.6
Female	26	0	df =3 p=0.000
Course Year			
First Year	15	0	
Second Year	62	0	
Third Year	90	16	
Fourth Year	16	1	*p=0.000
Religion			
Christianity	68	16	
Islam	115	1	*p=0.000
Ethic Group			
Yoruba	98	1	
Hausa/Fulani	6	0	
Igbo	79	16	*p =0.000
Marital status			
Single	163	15	
Married	20	2	
Separated			
Widowed			*p =0.000

*Fisher's exact tests

Table 10 shows that at 95% confident interval, age has no effect on knowledge regarding health effect of tobacco use, the p-value is 0.000, this is less than 0.05; it means that there is a significant relationship between age and knowledge. It also shows that there is statistically significant relationship gender and knowledge as 157(78.5%) males know more than the females.

Table 11: Relationship between socio-demographic characteristics and perception of tobacco cessation practices

Socio-demographic Characteristics	Frequency % Good (n=183)	Poor (n=17)	Statistical test
Age			
Mean + SD	27.2 + 4.04		t=20.35 p=0.000
Gender			
Male	57	117	X^2 =71.43
Female	22	4	df =1 p=0.0003
Course Year			
First Year	4	11	
Second Year	38	24	
Third Year	33	73	
Fourth Year	4	13	*p=0.000
Religion			
Christianity	57	74	
Islam	22	47	*p=0.000
Ethic Group			
Yoruba	48	59	
Hausa/Fulani	5	1	
Igbo	37	61	*p =0.000
Marital status			
Single	64	114	
Married	15	7	
Separated			
Widowed			*p =0.001

*Fisher's Exact tests Table 11: At 95% confident interval p-value is 0.000, this is less than 0.05; it means that there is a significant relationship between age and perception of tobacco cessation practices. It also shows that there is a statistiacally significant relationship between gender, religion , educational background, and the respondents.

Table 12: Association between pattern and knowledge of the effects of tobacco use

Association of a pattern of use and knowledge of the health effects of tobacco use

Below 10	Between 11 and 20

Health problems associated Tobacco use	Y	N	IDK		Y	N	IDK
Lung Disease	168	13	12		2	0	5
Heart Diseases	152	23	18		7	0	7
Lung and Other Cancers	163	17	18		4	2	1
Stroke	22	47	124		4	0	3
Sudden Death	69	55	69		0	7	0
HIV/AIDS	0	173	20		0	3	4
Road Traffic Accident	12	155	26		0	7	0
Low Birth Weight	15	108	70		0	4	3
Low Sperm Count	40	66	87		0	7	0

Y = Yes. N= No & IDK = I don`t know

Below10 :

Majority of the respondent are heavy tobacco users and have good knowledge on the health effect on tobacco use .

Number of cigarettes taken per day below 11

Majority of the respondents are heavy tobacco users but have good knowledge of the health effect of tobacco use.

Table 13

Effect of socio-demographic characteristics of respondents on knowledge, perception regarding the effect of tobacco use and cessation practices.

Variable	Test statistics	p values
knowledge on harmful effect of tobacco use df = 1	x^2= 137.78	.000
perception on cessation practices	x^2 = 6.730 df = 2	.035
perception on role modelling df = 2	x^2= 44.59	.000

The P value for knowledge on the health effect of tobacco use was found to be 0.00 and is less than the level of significance 0.05; hence, the respondents have a good knowledge regarding the effect of tobacco use. (X^2 = 137.78; < .000)

It shows that having a positive perception of cessation practices was found to be associated with having good knowledge. The P value was found to be less than the level of significance (X^2 = 6.73; <0.35).SS

Positive perception of role modelling was found to be associated with good knowledge. The P value was found to be less than the level of significance. (X^2 = 44.59; <0.00).

4. Conclusion

The class representations of samples of smokers from the Lagos State College of Health Technology and showed that lower level status is related to less knowledge of the health effects of smoking and toxic elements of smoke. These findings about the consciousness of health effects were consistent with earlier research, awareness of toxins in smoke.

We note the general acceptance of our findings across the other health professional institutions in other countries and hypothesise those alike social variations exist in other high-income countries.

Misconception about nicotine was common with over 40% of all smokers trusting that nicotine causes most of cancer. Nearly half of the smokers in the college and the majority of smokers with low socioeconomic status fostered this belief. It is significant that such misunderstandings are modified, as smokers who thought that nicotine is carcinogenic are not likely to decide to use nicotine replacement therapies, which are verified treatments for ending.

It is possible that a small number of smokers believed that nicotine played a role in the development of cancer because of its role as an addictive substance that keeps people smoking; further research is required to explore this.

Socioeconomic status of lower-level differences in the knowledge that tobacco smoke has mercury was small because little people were conscious of the presence of this substance in tobacco smoke. Mass media campaigns or cigarette pack cautioning labels have not sufficiently emphasised the fact that tobacco smoke comprises of mercury.

We note that normally education had a stronger influence than income, where knowledge was scarce (for example, knowledge about impotence, cyanide, mercury, and nicotine as a cause of cancer), and a weaker influence than income, where knowledge was widespread (for example, knowledge about heart disease and lung cancer).

The only element of knowledge that did not fit this pattern was carbon monoxide. We speculate that when knowledge about the health effects of a substance is available for the first time, higher education groups gain knowledge faster. They are better able to obtain information and use information technology and have a broader knowledge and access to information sources.

It is prominent that among other health professional institutions, smokers in Canada had the utmost level of consciousness of the harms of smoking and toxic compounds in smoke. This is likely due to the strong anti-smoking education campaigns in Canada. In 2001, Health Canada announced the commencement of a five-year $480 million programme to bolster existing tobacco control campaigns.

About 40% of the budget was allocated to mass media campaigns targeting Canadians of all ages. (Canada Tobacco Control, 2004) Canada has one of the most progressive warning labels on cigarette packs in the world. Under Canadian law, 16 rotated picture-based warnings are required in the top 50% of the front and back of the cigarette package. The graphic pictures include a diseased mouth, a lung tumour, and a brain after a stroke, a damaged heart, and a limp cigarette as part of an impotence warning.

Also, there are 16 rotating interior messages. On the side of the package, there is a range of yields for six substances. Cigarette packs in the USA, UK, and Australia contain text warnings. Graphic warnings are expected to be introduced in Australia within two years and in the UK within five years. Package warning labels for health effects and smoke constituents have been linked to greater health knowledge among Canadian, US, UK, and Australian smokers (Hammond et al, 2008).

In addition, the study could investigate the differences in knowledge of the health effects of the components of tobacco smoke; the effect on the health of tobacco smoke in the environment;

Myths about smoking (for example exercise or vitamins undo most of the effects of smoking); and the perception of smokers about their risk of developing diseases related to smoking.

Consent:

The purpose and nature of the study were communicated to the respondents, written informed consent was obtained from the students before the participation in the study, and anonymity of respondents was maintained by non-use of identifiers and personal information. They were also informed that they were free not to participate and or opt out at any time.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

Option 2:

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

1.

2.

3.

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