



National Journal of Medical and Allied Sciences

[ISSN Online: 2319 – 6335, Print: 2393 – 9192|Original article |Open Access]

Website:-www.njmsonline.org

KNOWLEDGE ABOUT SMOKING AND SECOND HAND SMOKE AMONG THE MALE ADULTS OF ABUJA, NIGERIA

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ABSTRACT

Introduction: The Framework Convention on Tobacco Control (FCTC) was introduced by the WHO to curtail the global tobacco pandemic that is claiming millions of life yearly. Though Nigeria is a signatory, it has lacked behind in implementation and this to a large extent can be blamed on poor surveillance. Very few studies in Nigeria have assessed knowledge about harmful effects of Second Hand Smoke (SHS). This study was undertaken to determine the level of knowledge of the ill effects of tobacco among the male adults aged 15-49 years residing in Abuja, Nigeria

Material and Methods: This cross-sectional study was carried using a sub-set of the Global Adult Tobacco Survey questionnaire. The WHO 30 X 7 Multi-stage, modified cluster technique was used to obtain a sample for smokers and another for non-smokers. Microsoft Excel was used to create a database.

Results: Smokers were found to be older and less educated than non-smokers. Levels of tobacco-related knowledge were found to be high in Abuja but were higher amongst non-smokers and were also associated with the educational achievement of respondents. Overall, non-smokers were found to be more knowledgeable than smokers about the harmful effects of smoking and SHS.

Conclusion: It observed that male adults in Abuja were very knowledgeable about the harmful effects of tobacco consumption; however, smokers had significantly less knowledge as compared to non smokers. Larger nationwide studies using all the protocols of GATS are further required.

Key words: Nigeria, Knowledge, Second Hand Smoke

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INTRODUCTION

Tobacco is the single most preventable cause of death in the world today". (1) Tobacco use is also known to be causally related to heart disease, emphysema, stroke, peripheral vascular disease and adverse outcomes of pregnancy and healing following surgery.(2) There are currently approximately 1.1 billion smokers around the world (3,4) and this figure is set to rise to 1.6 billion by 2030 if the current trend is left unchecked. (2) Over 80% of smokers today reside in middle and low-income countries. (3,4) Moreover, secondhand Smoke (SHS) or involuntary smoking is known to be carcinogenic

to humans with no safe levels of exposure. (5) SHS is even more dangerous than active smoking because it contains higher concentrations of small particles as it is not "filtered", has toxic gases, and includes exhaled mainstream smoke. Even brief exposures to SHS greatly increase the risk of developing atherosclerosis. (6) Other diseases caused by SHS include acute respiratory infection, sudden infant death syndrome, asthma, middle ear infection and possibly certain learning defects. (5) SHS is estimated to kill about 3000 non-smokers each year in the USA mostly due to cardiovascular disease (2) while in the UK about 11,000 deaths are attributed to the adverse effects

of SHS. (6) This explains to a large extent why more and more countries are enforcing smoking bans to protect the people from SHS. Lopez et al (7) developed a conceptual framework that presents the 4 stages of the Tobacco epidemic, considering the fact that Nigeria is still at stage 1 of the pandemic; there lies a huge opportunity to prevent it from progressing to more advanced stages and hopefully reverse it out of the pandemic by employing aggressive tobacco control strategies. It is important to realize that there has been limited research on smoking in Nigeria and most studies have focused on Knowledge, Attitudes and Practice (KAP) of smoking in subgroups such as Soldiers (8), Physicians (9) and Secondary school children (10, 11). Knowledge about tobacco may be an important determinant of behavior such as initiating and quitting smoking. (12) In Nigeria currently, very little data is available on the amount of knowledge about tobacco use and its harmful effects amongst adult. Aim of the present study was to determine the level of knowledge of the ill effects of tobacco among the male adults aged 15-49 who are resident of Abuja, Nigeria.

MATERIAL AND METHODS

Study design

This cross sectional, descriptive study collected primary data through a survey of a representative sample using a structured questionnaire with close-ended questions.

Sampling Approach

Multi-stage, modified cluster sampling (13) approach was used. This sampling technique includes the following steps: 1) estimating the population of the communities and villages in the study area; 2) dividing each of the communities into non-overlapping Local Government Councils (LGCs) of roughly the same population size; 3) random sampling of 30 clusters, with probability proportionate to the size (PPS) of the population of the LGC in the study area; 4) selection of seven subjects in each cluster to give a total sample size of 210. (14) Since this approach assumes uniformity of the general characteristics of the respondents, and because this study aimed to compare the knowledge between smokers and

non-smokers; two samples of 210 were chosen one for the smokers and one for the non-smokers.

Inclusion and exclusion criteria:

Non-institutionalized male adults aged between 15-49 years residing in the FCT, Abuja were included. Female subjects due to the fact that the prevalence of tobacco use among them is less than 1 % were excluded. (15) Male adults with physical or mental handicap that could prevent them from providing informed consent were also excluded.

Questionnaire design

Data for this study was collected in a questionnaire that was based on a subset of the GATS questionnaire. The GATS questionnaire provides a global standard protocol for the consistent monitoring of tobacco use amongst adults and ensures that the obtained results are comparable with the results obtained from standard tobacco surveys in other parts of the world. (16)

Ethical considerations

Approval from the Health Research Ethics Committee (HREC) of the FCT and that of the University of Liverpool HREC was obtained. A written consent was obtained from each respondent after explaining the essence of the study and the voluntary nature of their participation using the information sheet.

Sampling procedure/Selection of households/Participants

Table 1 shows the cluster selection. In which all districts and localities in each local government councils (LGC) were obtained from the Abuja Geographic Information Systems (AGIS). A list of all localities by districts and LGCs was created. Each LGC was divided into clusters. In every LGC, each cluster was given a unique number and the 30 required clusters were randomly selected. On the day of the interview, the first identified house was visited followed by the next nearest household, followed by the next until 7 eligible smokers and 7 non-smokers were interviewed.

‘Complete knowledge’ represented correct response (yes) to all 8 questions; ‘good knowledge’ represented 5 to 7 correct responses; ‘Poor knowledge’ represented 1 to 4 correct responses; and ‘No knowledge’ represented 0 correct responses.

Data Analysis

Microsoft Excel was used to create a database. Questionnaire information was inputted into IBM's SPSS version 18.0 and was used for all analysis. Knowledge about the ill effects of smoking and SHS was analyzed as categorical variables. Statistical significance of the differences between the two groups was analyzed using Chi-square statistics. Next, the questions that identified the level of knowledge about hazardous effects of tobacco use were combined to create a new variable that was used as the dependent variable in multivariate logistic regression analysis. $P < 0.05$ was considered as statistical significant.

RESULTS

The age distribution of the smokers and nonsmokers were very similar, 16 to 49 years and 15 to 48 years, respectively. However, nonsmokers on the average were 2.2 years younger than smokers. Majority of respondents in both groups have received some level of formal education; 95.7% of non-smokers and 91.4% of smokers. Overall, 41.0% of non-smokers reported being unemployed as compared to 35.7% of smokers. Close examination of the employment pattern in the two groups detected no statistical significance. (Table 2)

Table 1: Cluster Selection in the study population

LGCs	Population	Percentage of the total population	Percentage of 30 cluster	Potential clusters in the locality	Number of clusters selected
Abaji	91,168	4.2	1.2	9	1
Bwari	354,438	16.2	4.9	35	5
Gwagwalada	246,108	11.2	3.4	25	3
Kuje	151,884	6.9	2.1	15	2
Kwali	133,898	6.1	1.8	13	2
Municipal-Area-Council	1,214,498	55.4	16.6	121	17
Total	2,191,994	100.0	30.0	219	30

Table 2: Univariate distribution of age, education level and work status

Variables		Nonsmokers		Smokers		Statistic al Test
		Mean	SD	Mean	SD	
Age (years)		26.59	6.84	28.78	7.55	t value = 3.120 p=0.348
Variables		No	Percent	No	Percent	Statistic al Test
Education	No Education	9	4.3	18	8.6	Chi-square = 4.014, p= 0.259
	Primary	28	13.3	33	15.7	
	Secondary	86	41.0	78	37.1	
	More than secondary	87	41.4	81	38.6	
Work status over past 12 months	Unemployed	86	41.0	75	35.7	Chi-square test = 1.869, p= 0.393
	Self-employed	84	40.0	85	40.5	
	Formally employed	40	19.0	50	23.8	
Total		210	100.0	210	100.0	

Table 3: Association between smoking status and background characteristics

Background characteristics		p value	Odds Ratio	95% C.IN	
				Lower	Upper
Age	15-19 years *	0.205			
	20-24	0.536	1.245	0.621	2.496
	25-29	0.203	1.603	0.775	3.314
	30-34	0.060	2.121	0.968	4.644
	35-39	0.053	2.660	0.986	7.171
	40-44	0.094	2.550	0.851	7.637
	45-49	0.028	4.734	1.183	18.948
Education	No Education *	0.099			
	Primary	0.343	0.628	0.240	1.644
	Secondary	0.098	0.478	0.199	1.146
	>Secondary	0.027	0.365	0.150	0.889
Work	Unemployed *	0.584			
	Self-employed	0.514	0.846	0.513	1.397
	Formally employed	0.729	1.116	0.600	2.075

* = Reference category

Table 3 shows that the likelihood of being a smoker increases with age and respondents between the ages of 45-49 years are almost 5 times more likely to be smokers than non-smokers as compared to respondents aged 15-19 years. The likelihood of smoking declines as levels of education increases. Actually, those who have

completed 'more than secondary education' have significantly lower smokers than the uneducated ones (OR: 0.365, 95% CI: 0.150-0.889). However, none of the odds ratio of the association between the employment and smoking status was found to be statistically significant. Therefore, based on this sample, smokers in the study area are older and less educated.

Tobacco related knowledge

The level of knowledge that smoking causes serious illness was higher amongst non-smokers as compared to smokers. There was relatively poor knowledge in both groups that smoking could result in stroke; with smokers knowing even less than non-smokers. Overall, knowledge about the four major harmful effects of smoking tobacco that were investigated in the study was consistently higher amongst non-smoker as compared to smokers. (Table 4)

Table 4: Knowledge about the Harmful effects of Smoking

Variables	Smoking Status				Total		Chi-Square
	Non-smokers		Smokers				
	Count	Percent	Count	Percent	Count	Percent	
Smoking causes serious illness							
Yes	204	97.1	186	88.6	390	92.9	19.51, p<0.001
No	5	2.4	3	1.4	8	1.9	
Don't know	1	0.5	21	10	22	5.2	
Smoking causes Stroke							
Yes	124	59	98	46.7	222	52.9	8.23, p=0.016
No	44	21.0	68	32.4	112	26.7	
Don't know	42	20.0	44	21.0	86	20.5	
Smoking causes Heart attack							
Yes	184	87.6	162	77.1	346	82.4	10.256, p=0.006
No	8	3.8	24	11.4	32	7.6	
Don't know	18	8.6	24	11.4	42	10.0	
Smoking causes Lung cancer							
Yes	195	92.9	171	81.4	366	87.1	17.141, p=0.000
No	4	1.9	25	11.9	29	6.9	
Don't know	11	5.2	14	6.7	25	6.0	
Total	210	100	210	100	420	100	

Non-smokers were more aware of the fact that SHS can cause serious illness as compared to smokers. The level of knowledge that SHS causes heart disease in adults was higher amongst non-smokers than smokers. Knowledge that SHS causes lung illness in children was higher in non-smokers as compared to smokers. Non-smokers were found to be more knowledgeable about lung cancer being an effect of smoking as compared to smokers. Overall, non-smokers were found to be more knowledgeable than smokers about each of the 4 ill effects of SHS investigated in the survey. (Table 5)

Table 5: Knowledge about the Harmful effects of SHS

Variables	SHS Causes				Total		Chi-Square
	Non-smokers		Smokers				
	Count	Percent	Count	Percent	Count	Percent	
SHS causes illness							
Yes	180	85.7	144	68.6	324	77.1	17.630, p<0.001
No	16	7.6	38	18.1	54	12.9	
Don't know	14	6.7	28	13.3	42	10.0	
SHS causes adult heart disease							
Yes	165	78.6	121	57.6	286	68.1	21.482, p<0.001
No	26	12.4	47	22.4	73	17.4	
Don't know	19	9.0	42	20.0	61	14.5	
SHS causes lung illness in children							
Yes	180	85.7	153	72.9	333	79.3	10.940, p=0.004
No	20	9.5	34	16.2	54	12.9	
Don't know	10	4.8	23	11.0	33	7.9	
SHS causes lung cancer in adults							
Yes	166	79.0	124	59.0	290	69.0	19.784, p<0.001
No	23	11.0	48	22.9	71	16.9	
Don't know	21	10.0	38	18.1	59	14.0	
Total	210	100	210	100	420	100	

Table 6: Overall knowledge about the ill effects of Smoking and SHS

Knowledge	Smoking Status		Total	chi square
	Non-smoker	Smoker		
No knowledge	4	14	18	20.17, p<0.001
Poor Knowledge	28	56	84	
Good Knowledge	79	96	148	
Complete Knowledge	99	71	170	
Total	210	210	420	

Overall, non-smokers were found to be more knowledgeable than smokers about the harmful effects of Smoking and SHS and this difference was statistically significant- Therefore, smoking status is associated with the amount of knowledge respondents possess. (Table 6)

Table 7: Factors associated with knowledge about ill effects of active and passive smoking

Knowledge	Degree of Freedom (df)	p value	Odds ratio	95% C.I for Odds Ratio	
				Lower Bound	Upper Bound
Poor Knowledge	Intercept	1	0.085		
	Age in 7 categories	1	0.703	1.082	0.721-1.623
	Education	1	0.983	0.994	0.564-1.752
	Work	1	0.331	0.641	0.262-1.569
	Smoking status	1	0.506	0.649	0.182-2.314
Good Knowledge	Intercept	1	0.031		
	Age in 7 categories	1	0.980	0.995	0.688-1.441
	Education	1	0.225	1.384	0.819-2.340
	Work	1	0.964	0.982	0.442-2.180
	Smoking status	1	0.037	0.291	0.091-.930
Complete knowledge	Intercept	1	0.109		
	Age in 7 categories	1	0.291	0.816	0.560-1.190
	Education	1	0.113	1.544	0.903-2.640
	Work	1	0.263	1.581	0.709-3.527
	Smoking status	1	0.010	0.218	0.068-0.699

To determine the association of tobacco-related knowledge with smoking status, age, education and employment status; multivariate logistic regression was used. For this analysis, the reference group was “no knowledge”. Smoking status was the only factor that showed statistically significant association with the knowledge about ill health effects of tobacco smoke. Smokers were less likely to have good knowledge (29%) or complete knowledge (22%) about the ill effects of smoking and SHS as compared to having no knowledge. (Table 7)

DISCUSSION

The study found that both groups had similar age distribution. However, smokers on the average were 2.2 years older than non-smokers and the odds of being a smoker increases with increasing age. Furthermore, the modal age of smokers was shown to be 30 years and these findings are similar to the NDHS (2008) finding that indicated the highest proportion of smokers among men in the age group 30-34 was 13%. (15) Helsinki a study by Laaksonen et al (2005) showed that smoking displays clear association with socioeconomic differences, being more common among those with lower occupational, education and income status.(17) While the majority of the sample in both groups was found to have acquired similar proportions of formal education, multivariate regression showed that higher educational achievement is associated with lower odds of being a smoker. This kind of association has also been reported several other studies. A study by Cavelaars et al (2000) of 12 European countries found that in men between the ages of 20 to 44 years smoking rates were higher among lower educated people in most countries. (18) While a cross-sectional study in New Delhi, India found that education was the strongest predictor of smoking, and men with no education were 1.8 (1.5 to 2.0) times more likely to be smokers than those with college education. (19) In the USA, another study found greater education was strongly associated with both never and former smoking. (20) Therefore, the findings of this study are in line with growing evidence that smokers tend to be less educated than non-smokers. This study did not find any statistically

significant association between smoking and the employment status of the respondents and this was surprising as occupational status is closely related to one's educational level (17) and therefore one would expect non-smokers to have better employment by virtue of their better educational achievement. One possible explanation could lie in the definition of unemployment used in the study. In India, men who were self-employed smoking prevalence of 55.7%, compared to 9.5% amongst students. (22) In both groups, lung cancer was the most commonly identified disease that resulted from smoking while stroke was the least commonly identified. No other study from Nigeria provides comparable results, however a study on adults in north-eastern Nigeria by Olufemi et al (2008) show much lower levels of knowledge with only 60.7% of smokers agreeing that smoking was injurious to health. (22) GATS study above asked respondents if they believed SHS caused serious illness, but only the GATS of Thailand asked about specific diseases associated with SHS. (23) Multivariate regression showed that smoking status was the only factor in the study to be associated with the amount of knowledge respondents possessed about the harmful effects of active and passive smoking, while age, educational and employment showed no significant association. Additionally, a study from the USA by Finney et al (2008) showed that tobacco-related knowledge is not equally distributed in the population, that there is a knowledge gap between those with lower and higher levels of education and income, and that non-smokers have more accurate knowledge than smokers. (12)

CONCLUSION

It is found that the male adults in Abuja were very knowledgeable about the harmful effects of tobacco consumption, however, smokers had significantly less knowledge as compared to non smokers and this is also associated with their lower educational achievement. Abuja is only one part of Nigeria and for any control measure to be truly successful, data is required from the whole country. Therefore, future studies should cover the entire nation using all the protocols of GATS and

not only the questionnaire as was the case in this study.

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Conflicts of Interest: Nil Source of Funding: Nil

Citation: Siddiqui MU, Saiqa S. Knowledge about Smoking and Second Hand Smoke among the Male Adults of Abuja, Nigeria. National Journal of Medical and Allied Sciences 2022; 11(1): Online first

Date of Acceptance: 02-04-2022

Date of Submission: 08-11-2021