Original Article

Awareness and perception of harmful effects of smoking in Abia State, Nigeria

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ABSTRACT

Background: The goal of the health education is to influence their perception of tobacco use, thereby discouraging smokers and would be-smokers from smoking.

Objective: This study is aimed at ascertaining the level of awareness of the warning against smoking, perception of tobacco use and tobacco control measures among residents of Abia State, South-East Nigeria.

Materials and Methods: A cross-sectional, population-based survey of respondents (aged 18 years and above) were selected by multi-staged sampling technique. Responses were elicited from them using an interviewer-administered questionnaire on sociodemographic characteristics; awareness of warning against tobacco use, sources of information, perception of harmful effect of tobacco and tobacco control measures.

Results: About 88% of the respondents were aware of warning against tobacco use, the most common source of information was media adverts (50.7%). Awareness of warning against tobacco use was found to be associated with sociodemographic characteristics, history of smoking, exposure to smoke at home and public places, and perception of tobacco use.

Conclusion: The findings from this study present an opportunity for initiating more robust policies, programs and interventions for tobacco control in the state.

KEY WORDS: Awareness, health education, Nigeria, perception, smoking, tobacco control

INTRODUCTION

Tobacco is the second major cause of adult death and diseases in the world today.[1] Nearly 5 million people die due to tobacco use every year, and this figure will increase to 10 million tobacco-attributable deaths per year by 2020.[1] For each cigarette smoked, an average of 5.5 min of life is lost.[2] There are over 50 diseases that are caused, increased or exacerbated by smoking. Globally there are 1.1 billion smokers, and 70% of whom are in low-income countries where control measures are reported to be weak.[2] In past, it is believed that between 1950 and 2000, 70 million people died of tobacco-related conditions, while about 450 million may die from similar causes in the next 50 years if adequate measures/interventions are not put in place to address it.

In Nigeria, several studies have reported tobacco smoking prevalence of between 4.1% and 8.6%.[3-16] While not many studies have been conducted to ascertain the burden of tobacco-related morbidity in the country, the rising prevalence of noncommunicable diseases (NCDs) is no doubt related to increasing prevalence of NCDs-related risk factors including smoking. Hence, controlling tobacco use provides a significant opportunity of preventing NCDs in the country.

Understanding factors influencing tobacco use are important in developing measures to control it. Some known determinants of tobacco use are sociodemographic factors like age, sex, religion, and socioeconomic status such as the urbanity, environmental factors as use by parents, friends or school teachers, exposure to media, and advertisements. Other factors include low awareness regarding tobacco hazards and behavioral intention to use.[6] The interventions to control smoking have ranged from the use of health education campaigns through the mass media to enlighten the public on the hazardous

effects of smoking to the use of more robust interventions such as incentives/disincentives and legislations aimed at restricting cigarette smoking promotion as well as reducing the acceptability of smoking.

Targeting parents/guardian is also suggested as a good strategy for reducing adoption of smoking. This emphasizes the need for parental/guardian's health education through antenatal/child health clinic to avert their children from health damaging practices.[6] Considering that peer influence is one the most significant factors in the initiation of smoking, there is a need to explore the possibility of using peer education as a strategy for reducing the initiation. The challenge of tobacco use is both behavioral and addiction. Consequently, interventions or strategies for modifying acceptance of smoking should aim at addressing the challenge of peer influence, thereby complementing health education via the mass media and legislation.

Health education is aimed at increasing awareness of hazards of smoking and discouraging smoking among smokers and would be smokers. In Nigeria, unlike in many developed countries the strategy has remained the promotion of voluntary adoption of behavior change through warnings of the dangers of cigarette smoking and banning on smoking in public places (though not backed with legislation). Over the years, the anti-smoking message has changed from "smoking is dangerous to health" to "smokers are liable to die young" as recommended by the Federal Ministry of Health.

Hence, to ascertain the impact of the message, there is a need to understand the extent of awareness, likely sources of information through which the public accessed it, community perception of smoking and measures to control it. This is imperative to guide the development of subsequent anti-smoking interventions as well as strengthen existing measures.

MATERIALS AND METHODS

Study area

The study was conducted in randomly selected communities in Abia State of Nigeria. Abia is one of the 36 states in Nigeria, with an estimated population of 3,152,691 inhabitants and located in the South-Eastern part of the country. The state is divided into three senatorial zones and 17 local government areas (LGAs) and has 291 political wards. It is largely inhabited by Igbo people (one of the three major ethnic groups in the country). The predominant economic activities of the people are subsistence agriculture and commerce.

Study population

These were adult men and women aged 18 years and above, who were resident in the state, and did not include pregnant women, temporary visitors to the state.

Study design and sampling technique

The study was cross-sectional in design, and a total of 2999 respondents selected by multi-stage stratified cluster sampling technique were studied. The state is traditionally, divided into three senatorial zones: Abia North, Abia Central and Abia South; and from each senatorial zone, one rural and one urban LGAs were randomly selected. The selected LGAs were Ohafia and Isuikwuato/Bende for Abia North, Umuahia North and Ikwuano for Abia Central and Aba South and Ukwa East for Abia South Senatorial Zones. Next, in each selected LGA, four enumeration areas (EAs) were randomly selected from the listing of all the EAs in the LGA. Furthermore, households in these EAs were enumerated and listed. From the list of households two eligible participants of either sex were selected, such that not more than two eligible respondents were selected per household. Using the EA map and starting from a prominent landmark, trained interviewers proceeded from household to household; interviewing eligible listed respondents until a minimum of 120 respondents were interviewed.

Data collection

Data were collected using interviewer-administered modified WHO-STEPs questionnaire. These were administered by a team of trained health workers comprising of six interviewers and a supervisor. Information collected included: Sociodemographic characteristics, awareness and perception of warning against the use of tobacco, sources of information, perception of the ban against smoking in public.

Ethics approval

The ethics approval was obtained from the Abia State, Ministry of Health Research Ethics Committee. Approval was obtained from the community leaders prior to the study, and all the respondents gave consent.

Data management and statistical analysis

Data obtained were entered using EpiData Software Version 3.1 (EpiData Association Odense, Denmark), while analysis was carried out using SPSS Version 17.0 (SPSS Inc., Chicago, Illinois, USA). Relevant means and standard deviation were calculated for continuous variables.

RESULTS

Although 2999 respondents were selected for the survey, 2983 consented to be interviewed giving a response rate of 99.5%. Table 1 shows the sociodemographic characteristics of the respondents. There was a significant difference in the sociodemographic characteristics of respondents of both localities. Most of the respondents were female (52.1%), and were predominantly from the rural area ($P = 0.029$). The mean age of the respondents was 41.7 ± 18.5 years. The rural respondents were

Table 1: Sociodemographic characteristics of the respondents by locality

Characteristics	*n* (%)			χ^2	*P*
	Total	Urban	Rural		
Gender	*n*=2983 (%)	*n*=1396 (%)	*n*=1587 (%)		
Male	1430 (47.9)	699 (50.1)	731 (46.1)	4.8	0.029
Female	1553 (52.1)	697 (49.9)	856 (53.9)		
Age in years	*n*=2955	*n*=1384	*n*=1571		
<25	564 (19.1)	292 (21.1)	272 (17.3)	61.6	<0.001
25-34	764 (25.9)	391 (28.3)	373 (27.3)		
35-44	467 (15.8)	256 (18.5)	211 (13.1)		
45-54	418 (14.1)	174 (12.6)	244 (15.5)		
55-64	309 (10.5)	114 (8.2)	195 (12.5)		
≥65	433 (14.7)	157 (11.3)	276 (17.6)		
Mean age±SD	41.7±18.5	39.3±17.4	43.9±19.2		
Educational status	*n*=2975	*n*=1392	*n*=1583		
No formal education	282 (9.5)	90 (6.5)	192 (12.2)	152.0	<0.001
Primary	731 (24.6)	261 (18.8)	470 (29.7)		
Secondary	1387 (46.6)	664 (47.7)	723 (45.7)		
Tertiary	538 (18.1)	359 (25.8)	179 (11.3)		
No response	37 (1.2)	18 (1.3)	19 (1.2)		
Annual income	*n*=2006	*n*=929	*n*=1077		
<50,000	593 (29.6)	206 (22.2)	387 (35.9)	65.5	<0.001
50,000-99,999	411 (20.5)	182 (19.6)	229 (21.3)		
100,000-199,999	435 (21.7)	212 (22.8)	223 (20.7)		
200,000-499,999	392 (19.5)	227 (24.4)	165 (15.3)		
≥500,000	175 (8.7)	102 (11.0)	73 (6.8)		
Marital status	*n*=2972	*n*=1389	*n*=1583		
Single	1028 (34.6)	560 (40.7)	458 (29.2)	47.8	<0.001
Married	1733 (58.3)	740 (53.8)	981 (62.4)		
Widowed/divorced/separated	211 (7.1)	77 (5.6)	134 (8.4)		
Ever smoked	*n*=2957	*n*=1382	*n*=1575		
Yes	385 (13.0)	180 (13.0)	205 (13.0)	35.5	<0.001
No	2572 (87.0)	1202 (87.0)	1370 (87.0)		

SD – Standard deviation

relatively older ($P \leq 0.001$) and had a greater proportion of those who were married ($P \leq 0.001$) than their urban counterparts. On the other hand, the urban residents had better educational status ($P \leq 0.001$) and earned more income than those in a rural area ($P \leq 0.001$).

About 88% of the respondents were aware of the warning against cigarette smoking and most common sources of this information in both urban and rural communities of the state were radio adverts (50.7%) and TV/radio program (26.3%) as shown in Table 2. About 10% of them knew through cigarette packs, while fewer came to know through either their peers or relatives (5.1%) and television adverts (4.4%). Billboards and print media played a much less significant role as a source of information on warning against tobacco use. Urban dwellers were more likely to acquire the information via radio/TV program than rural dwellers, while rural dwellers were more likely to be informed through radio adverts than their urban counterparts ($P < 0.001$).

Table 3 shows all factors associated with awareness of warning against smoking. Being an urban resident, a male, <45 years old, being unmarried, high educational status, high income status, history of smoking, exposure to cigarette smoke at home and public places were all found to be associated with awareness of the above warning; as well as positive perception of the law banning cigarette smoking in public places and harmful effects of smoking.

Two thousand six hundred and sixteen (93%) of the respondents were of the opinion that law banning smoking in public places was right [Table 4]. Respondents who were younger, with high educational status, with no present and past history of smoking, were exposed to smoke in both public and household levels were more likely to have positive perception of the law banning smoking in public places.

Table 5 shows that over 96% of the respondents think that smoking is harmful to health. However, only individuals

Table 2: Sources of information on the warning against smoking

Sources of information	Total *n*=2590 (%)	Urban *n*=1254 (%)	Rural *n*=1336 (%)	χ^2	*P*
Radio adverts	1316 (50.8)	581 (46.3)	735 (55.0)	43.35	<0.001
Radio/ television program	682 (26.3)	380 (30.3)	302 (22.6)		
Cigarette pack	251 (9.7)	132 (10.5)	119 (8.9)		
Friends/ relatives	130 (5.0)	54 (4.3)	76 (5.7)		
Television adverts	113 (4.4)	65 (5.2)	48 (3.6)		
Newspaper/ magazine article	30 (1.2)	19 (1.5)	11 (0.8)		
Billboard adverts	25 (1.0)	11 (0.9)	14 (1.0)		
Newspaper/ magazine	16 (0.6)	3 (0.2)	13 (1.0)		
Health care workers	11 (0.4)	52 (0.2)	8 (0.6)		
Others	16 (0.6)	6 (0.5)	10 (0.7)		

with high income status and those who were exposed to cigarette smoke in public places were more likely to perceive smoking to be harmful to health, while a greater proportion of those who had ever smoked and were exposed to smoke at the household level did not perceive smoking to be harmful to health but it was not statistically significant.

DISCUSSION

Only few studies have explored the effect of anti-smoking behavioral change communication interventions in the Nigeria in time past. In addition, this is the first population-based survey in Abia State to ascertain awareness of warning against smoking, common sources of information and community perception of smoking and measures for controlling the practice. Majority of the respondents were females and relatively young with a mean of age of 41.7 ± 18.5 years. In addition, most of them had at least primary education. Sixty percent of them earned <N200, 000 ($1,330) per annum and were currently in a marital relationship. Only about 13% of them had ever smoked cigarette in their lifetime so far.

Awareness of warning against smoking was found to be quite high (87%). Most respondents heard of the warning through the media, and a few via cigarette packs and family members. Health workers did not play a significant role in informing the public of the dangers of cigarette smoking. An earlier study by Desalu *et al*.[13] had also reported that media-radio and TV were most common sources of information regarding the harmful of effects of smoking in Nigeria. Elsewhere, awareness of smoking messages among students in Uganda was found to be about 67%.[17]

Table 3: Respondent's characteristics associated awareness of warning against smoking

Characteristic	*n* (%)	χ^2	*P*
Locality			
Urban (*n*=1391)	1273 (91.5)	26.20	<0.001
Rural (*n*=1583)	1353 (85.5)		
Sex			
Male (*n*=1427)	1335 (93.6)	73.41	<0.001
Female (*n*=1546)	1290 (83.4)		
Age in years			
<24 (*n*=560)	518 (92.5)	115.43	<0.001
25-34 (*n*=763)	700 (91.7)		
35-44 (*n*=464)	436 (94.0)		
45-54 (*n*=417)	368 (88.2)		
55-64 (*n*=309)	266 (86.1)		
≥65 (*n*=433)	323 (74.6)		
Mean±SD	40.5±17.7		
Marital status			
Married (*n*=1728)	1494 (86.5)	1.03	<0.001
Single (*n*=1236)	1124 (90.9)		
Educational status			
Had at least secondary education	1893 (89.6)	159.96	<0.001
No secondary (*n*=282)	175 (62.1)		
Income level			
<50,000 (*n*=589)	483 (82.0)	63.06	<0.001
50,000-99,999 (*n*=411)	360 (87.6)		
100,000-199,999 (*n*=435)	409 (94.0)		
200,000-499,999 (*n*=391)	371 (94.9)		
≥500,000 (*n*=174)	165 (94.8)		
Smoking status			
Yes (*n*=387)	384 (96.5)	29.79	<0.001
No (*n*=2587)	2242 (87.0)		
Consumed alcohol			
Yes (*n*=1658)	1535 (92.6)	65.29	<0.001
No (*n*=1313)	1089 (83.0)		
Exposure to smoke at homes			
Yes (*n*=397)	367 (92.4)	7.42	0.024
No (*n*=2382)	2102 (87.9)		
Exposed to smoke in public places			
Yes (*n*=1204)	1133 (94.1)	64.76	<0.001
No (*n*=1586)	1331 (84.3)		
Perception of the law banning smoking in public places			
Yes (*n*=2611)	2335 (89.4)	72.84	<0.001
No (*n*=192)	146 (76.1)		
Perception of smoking as being harmful to health			
Yes (*n*=2680)	2387 (89.1)	24.18	<0.001
No (*n*=106)	83 (73.8)		

SD – Standard deviation

It is curious that most common source information on the warning against tobacco use is media adverts, the primary objective of which is to promote cigarette smoking. However, it is a well-known fact that sponsors

Table 4: Respondent's characteristics associated with perception of the law banning smoking in public places

Characteristics	*n* (%)	χ^2	*P*
Gender			
Male (*n*=1345)	1237 (92.0)	5.92	0.052
Female (*n*=1464)	1379 (94.2		
Locality			
Urban (*n*=1303)	1221 (93.7)	1.83	0.414
Rural (*n*=1506)	1395 (92.6)		
Age in years			
<24 (*n*=530)	490 (92.5)	25.02	0.007
25-34 (*n*=719)	679 (94.4)		
35-44 (*n*=442)	420 (95.0)		
45-54 (391)	359 (91.8)		
55-64 (289)	267 (92.4)		
≥65 (411)	377 (91.7)		
Mean±SD	41.6±18.4		
Income level			
<50,000 (*n*=557)	525 (94.3)		0.213
50,000-99,999 (*n*=391)	356 (91.0)		
100,000-199,999 (*n*=422)	400 (94.8)		
200,000-499,999 (*n*=374)	351 (93.9)		
≥500,000 (*n*=164)	151 (92.1)		
Educational status			
≥Secondary education (*n*=2006)	1874 (93.4)	8.35	0.015
<Secondary education (*n*=262)	237 (90.5)		
Marital status		0.177	0.910
Married (nd=1639)	1530 (93.3)		
Single/widowed/divorced or separated (*n*=1162)	1080 (92.9)		
Currently smoking			
Yes (*n*=181)	154 (85.1)	22.07	0.001
No (*n*=2620)	2455 (93.7)		
Ever smoked			
Yes (*n*=374)	343 (89.1)	15.79	0.001
No (*n*=2435)	2273 (93.8)		
Exposed to smoke at home			
Yes (*n*=394)	374 (94.9)	34.82	0.008
No/DNK (*n*=2378)	2206 (92.4)		
Exposed to smoke at public places			
Yes (*n*=1200)	1144 (95.3)	19.03	0.018
No/DNK (*n*=1581)	1447 (91.5)		

SD – Standard deviation; DNK – Does not know

Table 5: Respondent's characteristics associated with perception hazards of tobacco smoking

Characteristics	*n* (%)	χ^2	*P*
Gender			
Male (*n*=1337)	1284 (96.0)	2.24	0.402
Female (*n*=1455)	1402 (96.4)		
Locality			
Urban (*n*=1299)	1253 (96.5)	3.06	0.192
Rural (*n*=1493)	1433 (96.0)		
Age in years			
<24 (*n*=526)	503 (95.6)	10.48	0.369
25-34 (*n*=718)	691 (96.2)		
35-44 (442)	430 (97.3)		
45-54 (*n*=387)	374 (96.6)		
55-64 (*n*=283)	274 (96.8)		
≥65 (*n*=409)	388 (94.9)		
Mean±SD	41.6±18.4		
Income level			
<50,000 (*n*=555)	542 (97.7)	19.99	0.037
50,000-99,999 (*n*=388)	365 (94.1)		
100,000-199,999 (*n*=420)	407 (96.9)		
200,000-499,999 (*n*=369)	361 (97.8)		
≥500,000 (*n*=163)	159 (95.5)		
Educational status			
≥Secondary education (*n*=1944)	1918 (96.2)	4.58	0.090
<Secondary education (*n*=259)	244 (94.2)		
Marital status			
Married (*n*=1627)	1572 (96.6)	3.92	0.120
Single/widowed/divorced or separated (*n*=1158)	1108 (95.7)		
Currently smoking			
Yes (*n*=181)	169 (93.4)	4.64	0.154
No (*n*=2603)	2509 (96.4)		
Ever smoked			
Yes (*n*=373)	352 (94.5)	4.08	0.108
No (*n*=2419)	2323 (96.5)		
Exposed to smoke at home			
Yes (*n*=393)	384 (97.7)	3.63	0.245
No/DNK (*n*=2363)	2266 (95.8)		
Exposed to smoke in public places			
Yes (*n*=1195)	1170 (97.9)	17.27	0.009
No/DNK (*n*=1569)	1490 (95.0)		

SD – Standard deviation; DNK – Does not know

of cigarette adverts do so to do encourage the use of tobacco, rather than make it unacceptable to the public. Hence, such adverts are designed to make smoking attractive, rather than make it unappealing. The inclusion of warning in the advert is basically in fulfillment of the mandatory requirement by the Federal Ministry of Health, in line with a global framework for tobacco control. In India, Sarkar *et al*.[18] reported a link between increased awareness of harmful effects of tobacco and influence of peers and family. Therefore, there is a need to explore opportunities provided by other community-based communication channels such as peers, schools, churches, family, and community members to disseminate information on the health dangers of smoking.

Factors likely to influence awareness of dangers of smoking included the locality, sociodemographic characteristics, smoking status, exposure to smoke at home and public places and perception of harmful effects of smoking and control measures. Furthermore, being an urban resident, male gender, being less

than 45 years old, single, higher educational status and income level were all found to be associated with awareness of dangers of cigarette smoking. This is probably because these factors are also associated with increased access to media and also exposure to smoking. In addition, individuals who smoke cigarette, those exposed to smoke in their environment that do perceive smoking as harmful, and were in support of the policy banning smoking in public places were more likely to be aware of anti-tobacco warning. On the contrary, in South Africa most adolescents do not consider second hand smoke as being harmful to others.[19,20] In this survey, a greater proportion of nonsmokers than smokers considered smoking to be harmful, but the difference was not statistically significant. Also, more smokers (93.4%) in our study believed that smoking is harmful to health compared to 60.7% reported from another part of the country.[10]

Most respondents were of the opinion that smoking is harmful to health and were also in support of the ban on smoking in public places. In like manner Sarkar and Biswas[18] reported that most Indians held similar views. This in contrast to the belief among adolescents in South Africa, where only half of them were in favor of banning smoking in public places.[19,20] This study revealed that more females were in support of the ban on smoking in public places. In addition, those aged between 25 and 44 years, as well as those with higher educational status, not currently smoking or ever smoked or those who had been exposed to smoke in both public places and at homes were more likely to support the ban against smoking. Similarly, nonsmokers in India were found to be more likely to support ban on smoking in public places.[18] Expectedly, nonsmokers are not only more likely to be uncomfortable with cigarette smoke, but are even at greater risk of exposure to second-hand smoke than smokers themselves.

Previous studies revealed that the consideration for ban on tobacco sales are motivated primarily by the fact that awareness of dangers of smoking is not enough to discourage people from smoking both current smokers and would-be smokers.[4,10] In Nigeria, ban of smoking in public places is yet to be supported by a smoke-free law, which needs to be enacted by the Federal legislatures; therefore, the enforcement of ban on smoking in public places is weak. Consequently, high exposure of people to smoke in public places is largely due to lack of awareness of the policy and absence of an effective legislation to enforce it.[17] A study in South Africa highlighted the need for integrated, comprehensive and well-coordinated interventions to control tobacco use. It was observed that the introduction of tobacco control act resulted in increased exposure of nonsmoking household members to second-hand cigarette smoke, as smokers were forced to smoke at their homes more often.[20,21]

CONCLUSION

The study had shown a high awareness in the populace the harmful effects of cigarette smoking and also a good knowledge of the harmful effects of smoking. in Abia State, Nigeria. Most people in the state expressed support for a ban on smoking in public places. Hence, the findings of the study provide an opportunity for stakeholders to evolve measures aimed at improving tobacco-control interventions.

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