

Knowledge of and practices related to smoking cessation among physicians in Nigeria^{*, **}

Conhecimento e práticas para a cessação do tabagismo entre médicos nigerianos

Olufemi Olumuyiwa Desalu, Adebowale Olayinka Adekoya, Adetokunbo Olujimi Elegbede, Adeolu Dosunmu, Tolutope Fasanmi Kolawole, Kelechukwu Chukwudi Nwogu

Abstract

Objective: To evaluate the knowledge and practices of smoking cessation among physicians in Nigeria. **Methods:** We conducted a cross-sectional survey in Lagos and three geopolitical zones of Nigeria. A self-administered structured questionnaire was used to obtain information on tobacco use and its health effects, as well as on the knowledge and practices of smoking cessation, from 436 physicians. **Results:** Of the 436 physicians, 292 (67.0%) were aware of smoking cessation, but only 132 (30.3%) showed good knowledge on this topic. The prevalence of smoking among the physicians was 17.7%. In addition, 308 physicians (70.6%) reported that tobacco education in the medical school curriculum was inadequate. Of the 436 physicians, 372 (86.2%) asked their patients whether they smoked, and 172 (39.4%) asked their patients the reasons for using tobacco. As a means of smoking cessation intervention, 268 (61.5%) used brief advice/counseling (2-5 min), 12 (3.7%) prescribed antidepressants, 16 (2.8%) prescribed nicotine replacement therapy (NRT), and 76 (17.4%) arranged follow-up visits. When the physicians were questioned regarding the obstacles to smoking cessation interventions, 289 (66.3%) cited poor knowledge of the issue, 55 (12.6%) cited a lack of time, and 20 (4.6%) cited unavailability of NRT. **Conclusions:** The results of this study highlight the lack of knowledge among physicians in Nigeria in terms of smoking cessation, as well as their failure to apply appropriate practices. The results of this study can further the evaluation and formulation of guidelines on smoking cessation and smoking education programs for physicians. Our findings also underscore the need to offer smoking cessation programs in all treatment facilities.

Keywords: Smoking cessation; Tobacco; Physicians; Nigeria; Health knowledge, attitudes, practice.

Resumo

Objetivo: Avaliar o conhecimento e as práticas para a cessação do tabagismo entre médicos na Nigéria. **Métodos:** Um inquérito transversal foi realizado na cidade de Lagos e em três zonas geopolíticas da Nigéria. Um questionário estruturado de autopreenchimento foi respondido por 436 médicos para a obtenção de informações a respeito do uso de tabaco e de seus efeitos na saúde, seu conhecimento e as práticas para cessação do tabagismo. **Resultados:** Dos 436 médicos, 292 (67,0%) estavam informados a respeito da cessação do tabagismo, mas somente 132 (30,3%) demonstraram bons conhecimentos sobre esse assunto. A prevalência de tabagismo entre os médicos foi de 17,7%. Além disso, 308 médicos (70,6%) relataram que a educação sobre tabagismo nos currículos de medicina era inadequada. Dos 436 médicos, 372 (86,2%) questionavam seus pacientes quanto ao tabagismo, e 172 (39,4%) os questionavam quanto aos motivos para o fumo. Como forma de intervenção para a cessação do tabagismo, 268 (61,5%) utilizavam breve aconselhamento (2-5 min), 12 (3,7%) prescreviam antidepressivos, 16 (2,8%) prescreviam terapia de reposição nicotínica (TRN), e 76 (17,4%) agendavam consultas de acompanhamento. Quando os médicos eram questionados quanto aos obstáculos para as intervenções para a cessação do tabagismo, 289 (66,3%) citaram pouco conhecimento do assunto, 55 (12,6%) citaram a falta de tempo, e 20 (4,6%) a indisponibilidade de TRN. **Conclusões:** Os resultados deste estudo destacam a falta de conhecimento dos médicos na Nigéria quanto à cessação do tabagismo, assim como a sua falha em aplicar práticas adequadas. Os resultados deste estudo podem auxiliar na avaliação e na formulação de diretrizes sobre cessação do tabagismo e de programas de educação em tabagismo para médicos. Nossos achados também destacam a necessidade da oferta de programas para cessação do tabagismo em todos os centros de atendimento.

Descritores: Abandono do uso de tabaco; Tabaco; Médicos; Nigéria; Conhecimentos, atitudes e prática em saúde.

* Study carried out in the Division of Internal Medicine, Department of Medicine, Federal Medical Centre, IdoEkiti, Nigeria. Correspondence to: Desalu O.O. Department of Medicine, University of Ilorin Teaching Hospital, PMB 1459, Ilorin, Kwara, Nigeria, 240001.

Tel +234 0 803 502-5771. E-mail: femuy1967@yahoo.co.uk

Financial support: None.

Submitted: 5 May 2009. Accepted, after review, 27 July 2009.

** A versão completa em português deste artigo está disponível em www.jornaldepneumologia.com.br

Introduction

Smoking causes certain fatal diseases, such as COPD (emphysema and chronic bronchitis), cancer and ischemic heart disease.^(1,2) Between 1950 and 2000, approximately 70 million people died due to tobacco use; over the next fifty years, another 450 million might die from smoking-related diseases.⁽³⁻⁵⁾ Smoking cessation is defined as sustained abstinence from cigarettes and other tobacco products for at least 6 months, but preferably for one year, as confirmed by measurement of expired carbon monoxide or other objective tests.⁽⁶⁾ The methods of smoking cessation intervention can be classified as behavioral, pharmacological or alternative.⁽⁷⁻⁹⁾ Physicians play an important role in smoking cessation,⁽⁹⁾ since they are perceived as a credible source of information, and many patients attempt to quit smoking if advised to do so by their physicians.⁽⁷⁾ However, some studies have revealed that most doctors rarely advise and assist smokers in quitting smoking due to a lack of training, skills and confidence in smoking cessation, as well as to other obstacles to performing smoking cessation interventions.^(10,11) In Hong Kong, 77% of doctors obtained information on the smoking status of their patients, but only 29% advised all smoking patients to quit.⁽¹²⁾ In Norway, 78-93% of doctors obtained information on the smoking status of their patients, depending on whether the patients had smoking related diseases, although only 25% of the patients were assisted in quitting.⁽¹³⁾ A study involving doctors in the United States reported that 67% asked about smoking and 74% advised their patients to quit, but only 35% provided assistance in quitting and only 8% scheduled follow-up visits.⁽¹⁴⁾ A 2004 survey of 4,000 doctors in China revealed that less than half (48%) asked patients about their smoking status, 64% advised known smokers to quit, 6.1% set quit dates, and 6.6% prescribed pharmacotherapy to help smokers quit.⁽¹⁵⁾ The success of smoking abstinence is often determined by the knowledge and practices of the physician regarding smoking cessation. Unlike in other regions of the world, there are no data on the knowledge and practices related to smoking cessation among physicians in sub-Saharan Africa. Data on the knowledge of smoking cessation might be used in planning smoking cessation programs for physicians and other health professionals. The aim of this study

was to evaluate the knowledge and practices of smoking cessation among physicians in Nigeria.

Methods

Between February of 2008 and April of 2008, we carried out a cross-sectional study among physicians in the state of Lagos and in three geographical regions of Nigeria: northern, southern and central. These regions were selected because they are representative of three major regions in Nigeria as well as because 50% of the registered physicians in Nigeria practice in the state of Lagos. The level of literacy, affluence, economic indices and infrastructural development were higher in the southern and central regions than in the northern region. In the southern and central regions, the health care delivery system is slightly more organized than it is in the northern region. The physicians were selected by multistage (clustered) sampling technique. Each of the three geographical regions is composed of states, these states, together with the state of Lagos, forming the clusters. A sample frame containing the list of the clusters in each of the geographical region was drawn, and a cluster was selected from the sampling frame by simple random sampling. Within each selected cluster (state), the hospitals were stratified into university/tertiary hospitals, district/general hospitals, primary health care centers and private hospitals. One of the stratified categories of hospital was selected by simple random sampling in each cluster. The sample size for the study was calculated using the following equation⁽¹⁶⁾:

$$N = n/1 + n(e)^2$$

where N is the sample size, n is the population of registered physicians in Nigeria (34,923),⁽¹⁷⁾ and e is the desired level of precision, assuming a 95% confidence interval. The calculated minimum sample size was 395. The minimum sample size was increased to 420 due to a non-response rate of 5% obtained in a pilot study. The study design was approved by the Research Ethics Committee of the Federal Medical Centre in Ido-Ekiti, Nigeria. All participating physicians gave written informed consent. We used a structured self-report questionnaire to obtain data from the physicians. The test-retest reliability of the questionnaire at a two-week interval was $r = 0.80$, and the internal consistency was

acceptable (Cronbach's alpha = 0.76). A total of 450 questionnaires were divided among the three selected clusters (state) in each region and in the state of Lagos: 100 to Kwara; 100 to Kebbi; 100 to Ekiti; and 150 to Lagos. The questionnaires were mailed to designated physicians in each region who asked their colleagues in the selected hospital to participate in the study. Physicians who consented to participate in the study were asked to complete the questionnaire based on their own knowledge and awareness of the subject. They were also asked to do so in a quiet environment without interference from their colleagues. The questionnaire was designed to collect or assess the following: sociodemographic data; location of practice (urban or rural); years of experience; personal smoking status; number of smoking patients encountered per week; knowledge of the health effects of tobacco use; benefits of smoking cessation; awareness of smoking cessation; methods of cessation intervention adopted; and obstacles to performing smoking cessation interventions. A scoring system was developed on the basis of four of the questions (components of tobacco, methods of tobacco use, health effects of smoking and smoking-related diseases). The responses to four knowledge statements were distributed on a dichotomous response scale: 1 point for each correct response; and 0 points for each incorrect, partial or missing response. Therefore, the maximum score was 4 points. Physicians scoring at or above the mean were categorized as having good knowledge, and those scoring below the mean were categorized as having poor knowledge. All of the data were collected without personally identifying information.

The data obtained were analyzed using the Statistical Package for the Social Sciences, version 15.0 (SPSS Inc., Chicago, IL, USA), and descriptive statistics were performed to examine the general characteristics of the physicians. Pearson's chi-square and Fisher's exact test were employed in order to test the significance of categorical variables. Values of $p < 0.05$ were considered significant.

Results

Of the 450 physicians contacted, 436 completed the questionnaire translating to a response rate of 96.9%. The mean age of the

physicians was 30.6 ± 4.1 years and the mean number of years of practice was 3.5 ± 2.7 . Three hundred and thirty (75.7%) of the physicians were male, and 106 (24.3%) were female. Table 1 shows the characteristics of the physicians. The mean tobacco use knowledge score was 3.3 ± 0.7 (mode, 3). Respondents scoring ≥ 3 were judged to have good knowledge of tobacco use. When the score was stratified into 2 dichotomous variables (good score and poor score), 388 (89.0%) of the physicians had good knowledge of tobacco use, whereas 48 (11.0%) had poor knowledge ($\chi^2 = 265$; degrees of freedom = 1; $p \leq 0.001$). Two hundred and ninety-two (67.0%) of the physicians were aware of smoking cessation therapy, and 136 (31.2%) were unaware ($p < 0.001$). Only 132 (30.3%) had knowledge of smoking cessation therapy, compared with 300 (68.8%) who had no such knowledge ($p < 0.001$). The common sources of current information on smoking cessation were the medical schools, which accounted for 144 (33.0%). Three hundred and eight respondents (70.6%) reported that tobacco education content in the medical school curriculum was inadequate, whereas 68 (15.6%) believed it was adequately incorporated into their medical school curriculum. Three hundred and seventy-six (86.2%) of the physicians asked their patients

Table 1 - Demographic characteristics of the participating physicians (n = 436).

Characteristic	n (%)
Age bracket, years	
25-34	353 (83.5)
35-44	79 (18.1)
45-55	4 (0.9)
Gender	
Male	330 (75.7)
Female	106 (24.6)
Location of practice	
Urban	321 (73.6)
Rural	115 (26.4)
Rank	
Specialist	19 (4.4)
Nonspecialist	417 (95.6)
Years in practice	
1-5	345 (79.1)
> 5	91 (20.9)
Smoking status	
Smoker	77 (17.7)
Nonsmoker	359 (82.3)

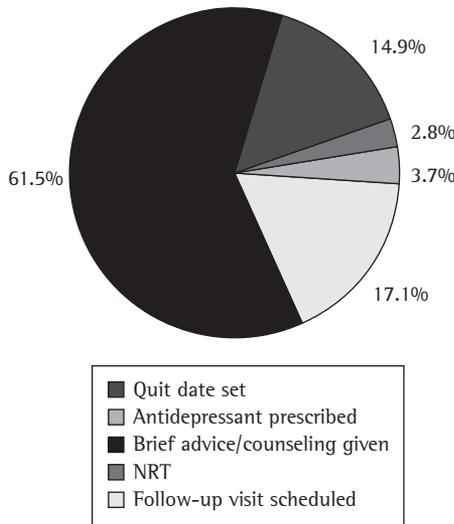


Figure 1 – Methods of smoking cessation used by the physicians. NRT: nicotine replacement therapy.

about tobacco use during the consultation, and 172 (39.4%) asked their patients about their reasons for using tobacco. Two hundred and sixty-eight physicians (61.5%) gave brief advice to their patients regarding smoking cessation. Sixty-five physicians (14.9%) set a target quit date for their patients. Sixteen physicians (3.7%) prescribed oral antidepressants, whereas 12 (2.8%) prescribed nicotine replacement therapy (NRT, nicotine gum, in all cases). None of the physicians referred patients to a smoking counselor or a cessation program. A significant proportion of physicians—308 (70.7%)—did not schedule a follow-up visit after 6–12 months to determine whether smoking abstinence had been sustained, whereas 76 (17.4%) scheduled follow-up visits and 52 (11.9%) felt that it was not relevant to the treatment. These reported methods of smoking cessation are shown in Figure 1. We also found that 289 (66.3%) of the physicians reported that poor knowledge of smoking cessation interventions was an obstacle

Table 2 – Barriers to implementing smoking cessation interventions.

Barriers	n (%) ^a
Poor knowledge of smoking cessation	289 (66.3)
Lack of time	55 (12.6)
Unavailability of NRT	20 (4.6)
Other	7 (2.1)

NRT: nicotine replacement therapy. ^aSome physicians gave multiple responses.

to smoking cessation practice, compared with 55 (12.6%) who cited a lack of time, 20 (4.6%) who cited the unavailability of NRT, and 9 (2.1%) who indicated other reasons. These reported obstacles to smoking cessation are shown in Table 2.

Discussion

The results of our study show that most physicians lack knowledge of smoking cessation when compared with physicians evaluated in other studies.⁽¹²⁾ This might be due to inadequate training in smoking cessation interventions after graduation and a lack of emphasis on smoking education in the medical schools. Our data support this lack of emphasis in medical schools, since 70.6% of the physicians reported that smoking education was not given adequate priority in medical schools. Such a lack of emphasis has also been reported by other investigators.^(18–20) These outcomes underscore the need to give priority to smoking cessation education in the medical school and continuing education programs after graduation. A significant proportion of physicians reported asking their patients about tobacco use, which is higher than the 44–48% reported in other studies.^(15,21) However, only 39.4% asked their patients about the reasons for using tobacco. Failure to ask about the reasons for using tobacco denies physicians the opportunity of recommending the appropriate method of intervention, anticipating challenges during the stages of quitting and enlisting the necessary clinical and social support. The present study also revealed that few physicians set quit dates for their patients, which is in agreement with the findings of other studies.^(15,21) In our study, the most common method of intervention was brief advice, which was reportedly given by 61.5% of physicians as a method of smoking cessation, a considerably lower proportion than the 95.8% reported in a study conducted in Canada.⁽²²⁾ The use of NRT by 2.8% was very low when compared with the 25% reported in Norway and the 95.8% reported in Canada.^(13,22) The use of NRT in the present study was similar to that reported in a study conducted in southwestern Nigeria.⁽²³⁾ Low utilization of NRT might be due to the limited availability of NRT in most hospitals and private pharmacies. Most physicians (70.7%) did not schedule a follow-up visit when they encountered

smoking patients. It has been demonstrated that follow-up visits during the abstinence period often provide the physician with an opportunity to review the progress of smoking cessation, congratulate the patient, stress abstinence, identify problems (current and potential) and initiate a new intervention or modify the current one if necessary.⁽⁷⁻⁹⁾ In the present study, the majority of the physicians (66.3%) reported that having poor knowledge of smoking cessation was the greatest obstacle to implementing smoking cessation interventions. This result is different from that of other investigators who reported inaccessibility of smoking cessation expertise, lack of time and lack of easily-applied tools to help patients quit.^(22,24,25) The majority of physicians evaluated in the present study lacked good knowledge and practices related to smoking cessation. This study has highlighted the areas of such knowledge and practices in which physicians in Nigeria are deficient. We have identified the barriers to good smoking cessation practice. These findings could further the evaluation and formulation of effective guidelines on smoking cessation and smoking education programs. Our data also underscore the need to offer smoking cessation programs at all treatment facilities.

Acknowledgments

The authors are grateful to Mrs. Ibiyemi Desalu for typing and organizing the manuscript.

References

1. American Cancer Society. [homepage on the Internet]. Atlanta: The Society. Cancer Facts and Figures 2007; c2008-09 [cited 2008 Mar 29]. Available from: <http://www.cancer.org/docroot/ipg.asp>
2. Office of the Surgeon General [homepage on the Internet]. Atlanta: U.S. Department of Health and Human Services [cited 2008 Oct 17]. The Health Consequences of Smoking: A Report of the Surgeon General. Available from: <http://www.surgeongeneral.gov/library/smokingconsequences>
3. International Union Against Tuberculosis and Lung Diseases [homepage on the Internet]. Paris: The Union [cited 2009 Jul 17]. 10 Facts on tobacco use. [Adobe Acrobat document, 1p.] Available from: http://www.theunion.org/download/factsheets/facts_tobacco.pdf
4. U.S. Dept. of Health and Human Services; Public Health Service; Centers for Disease Control; Center for Health Promotion and Education; Office on Smoking and Health. The Health consequences of smoking: nicotine addiction: a report of the Surgeon General. DHHS publication, no. (CDC) 88-8406. Rockville: U.S. Dept. of Health and Human Services; 1988.
5. Centers for Disease Control and Prevention (CDC). Cigarette smoking among adults--United States, 2000. *MMWR Morb Mortal Wkly Rep.* 2002;51(29):642-5.
6. European Respiratory Society [homepage on the Internet]. Lausanne: The Society. ERS School Course on Smoking Cessation, Bucharest 2004, 10th Sess. Campbell IA. Smoking cessation: overview of doctors intervention [cited 2008 October 7]. Available from: <http://www.ers-education.org/pages/default.aspx?id=529&idBrowse=36892&det=1>
7. Marlow SP, Stoller JK. Smoking cessation. *Respir Care.* 2003;48(12):1238-54; discussion 1254-6.
8. Reichert J, Araújo AJ, Gonçalves CM, Godoy I, Chatkin JM, Sales MP, et al. Smoking cessation guidelines--2008. *J Bras Pneumol.* 2008;34(10):845-80. Erratum in: *J Bras Pneumol.* 2008;34(12):1090.
9. Fiore MC, Bailey WC, Cohen SJ, Dorfman SF, Goldstein MG, Gritz ER, et al. Treating Tobacco Use and Dependence. Quick Reference Guide for Clinicians. Rockville: U.S. Department of Health and Human Services. Public Health Service; 2000.
10. Wells KB, Ware JE Jr, Lewis CE. Physicians' attitudes in counseling patients about smoking. *Med Care.* 1984;22(4):360-5.
11. Young JM, Ward JE. Improving smoking cessation advice in Australian general practice: what do GPs suggest is needed? *Aust N Z J Public Health.* 1998;22(7):777-80.
12. Abdullah AS, Rahman AS, Suen CW, Wing LS, Ling LW, Mei LY, et al. Investigation of Hong Kong doctors' current knowledge, beliefs, attitudes, confidence and practices: implications for the treatment of tobacco dependency. *J Chin Med Assoc.* 2006;69(10):461-71.
13. Bakke PS, Böker T, Diep TT, Grydeland T, Hansen PR, Brøgger JC, et al. Smoking cessation practice among Norwegian hospital physicians [Article in Norwegian]. *Tidsskr Nor Laegeforen.* 2000;120(14):1629-32.
14. Goldstein MG, DePue JD, Monroe AD, Lessne CW, Rakowski W, Prokhorov A, et al. A population-based survey of physician smoking cessation counseling practices. *Prev Med.* 1998;27(5 Pt 1):720-9.
15. Jiang Y, Ong MK, Tong EK, Yang Y, Nan Y, Gan Q, et al. Chinese physicians and their smoking knowledge, attitudes, and practices. *Am J Prev Med.* 2007;33(1):15-22.
16. Bartlett JE, Kotrlík JW, Higgins C. Organizational research: Determining appropriate sample size for survey research. *Inf Technol Learn Perform J.* 2001;19(1):43-50.
17. World Health Organization. [homepage on the Internet]. Geneva: World Health Organization. [cited 2008 Mar 29]. Country Health System Fact Sheet 2006 Nigeria. [Adobe Acrobat document, 8p.] Available from: http://www.afro.who.int/home/countries/fact_sheets/nigeria.pdf
18. Müller F, Wehbe L. Smoking and smoking cessation in Latin America: a review of the current situation and available treatments. *Int J Chron Obstruct Pulmon Dis.* 2008;3(2):285-93.
19. Roddy E, Rubin P, Britton J; Tobacco Advisory Group of the Royal College of Physicians. A study of smoking and smoking cessation on the curricula of UK medical schools. *Tob Control.* 2004;13(1):74-7.
20. Spangler JG, George G, Foley KL, Crandall SJ. Tobacco intervention training: current efforts and gaps in US medical schools. *JAMA.* 2002;288(9):1102-9.

21. Soto Mas FG, Papenfuss RL, Jacobson HE, Hsu CE, Urrutia-Rojas X, Kane WM. Hispanic physicians' tobacco intervention practices: a cross-sectional survey study. *BMC Public Health*. 2005;5:120.
22. Mowat DL, Mecredy D, Lee F, Hajela R, Wilson R. Family physicians and smoking cessation. Survey of practices, opinions, and barriers. *Can Fam Physician*. 1996;42:1946-51.
23. Nollen NL, Adewale S, Okuyemi KS, Ahluwalia JS, Parakoyi A. Workplace tobacco policies and smoking cessation practices of physicians. *J Natl Med Assoc*. 2004;96(6):838-42.
24. Gill JM, Diamond JJ, Leone FT, Pellini B, Wender RC. Do physicians in Delaware follow national guidelines for tobacco counseling? *Del Med J*. 2004;76(8):297-308.
25. Helgason AR, Lund KE. General practitioners' perceived barriers to smoking cessation—results from four Nordic countries. *Scand J Public Health*. 2002;30(2):141-7.

About the authors

Olufemi Olumuyiwa Desalu

Consultant Pulmonologist. Department of Internal Medicine, University of Ilorin Teaching Hospital, Ilorin, Nigeria.

Adebowale Olayinka Adekoya

Consultant Nephrologist. Department of Internal Medicine, Lagos State University Teaching Hospital, Lagos, Nigeria.

Adetokunbo Olujimi Elegbede

Consultant Psychiatrist. Department of Behavioural Sciences, Federal Medical Centre, Ido-Ekiti, Nigeria.

Adeolu Dosunmu

Registrar. Department of Internal Medicine, Federal Medical Centre, Ido-Ekiti, Nigeria.

Tolutope Fasanmi Kolawole

Registrar. Department of Internal Medicine, Federal Medical Centre, Ido-Ekiti, Nigeria

Kelechukwu Chukwudi Nwogu

Registrar. Department of Internal Medicine, Federal Medical Centre, Birnin-Kebbi, Nigeria.