

# Impact of an educational intervention on smoking counseling practice among Nigerian dentists and dental students

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## Abstract

**Introduction:** Oral health professionals are important in smoking cessation and prevention as their role is very crucial given the impact of smoking on oral health. Therefore, dental professionals need adequate education in tobacco use prevention and cessation skills to increase their confidence and be able to help patients to quit smoking. This study was aimed at determining the impact of an educational intervention on the attitudes, willingness, and perceived barriers of a group of Nigerian dental students and dentists to smoking cessation counseling in the dental clinic.

**Methods:** A self-administered questionnaire-based study was conducted in September 2007 at the Lagos University Teaching Hospital Idi Araba, Lagos. This was followed by a series of lectures and seminars using the brief intervention strategies for patients willing to quit using the Ask, Advise, Assess, Assist, and Arrange of cessation. A repeat study was conducted in January 2009 using the same questionnaire. Post intervention attitudes were significantly improved over pre intervention values for each parameter used in the assessment.

**Results:** A significantly higher proportion of the respondents were interested in providing cessation services after the intervention ( $P = 0.00002$ ). Most (83.1%) of the respondents were willing to undergo training with a slight increase in the post intervention group from 80.9% to 86%. All the reported barriers were significantly reduced after the intervention ( $P = 0.000$ ).

**Conclusion:** This study has shown that educational interventions such as didactic instructions and practical training in tobacco use cessation can help to increase the willingness, confidence, and ability to provide information, during encounters with patients.

**Key words:** Educational intervention, dental students, dentists, Nigeria, smoking cessation

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## Introduction

Tobacco use continues to be a substantial risk factor in the development and severity of diseases especially oral cancer and periodontitis. It has an impact on dental treatment as it has been found to increase the risk of root canal treatment failure; implant failure<sup>[1,2]</sup> as well as poor wound healing.<sup>[3]</sup> Furthermore, periodontal treatments in smokers are less effective than in nonsmokers<sup>[4]</sup> and a wide range of oral soft tissue changes have been attributed to tobacco

use. Among sites that have been considered to be at the highest relative risk for cancer due to smoking is the lung. Following the lung, the highest relative risks are observed for the larynx and oral cavity. Therefore, the importance of oral health professionals taking active roles in smoking cessation services and prevention is very crucial given the impact of smoking on oral health. Second, the typical patient visits the dental clinic several times a year to receive treatment or preventive services. These dental visits are opportunities

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to provide tobacco cessation services and counseling by the dental team.

Most patients who smoke have been reported to have a desire to quit or have unsuccessfully tried to quit.<sup>[5]</sup> Although there is evidence that smokers who receive assistance from health care providers are more successful at quitting than without support.<sup>[6]</sup> Several types of tobacco dependence treatments including counseling, behavioral therapy, and pharmacotherapy are often used in treating smokers who want to quit. The Clinical Practice Guidelines, however, advocates the use of a brief, clinic-based Ask, Advise, Assess, Assist, and Arrange model (five A's) with all tobacco-using patients.

An earlier study of students and dentists in Nigeria reported a low awareness of smoking cessation with majority of them showing poor attitudes and negative perceptions of smoking cessation activities. This was said to be due to a lack of training of the participants and lack of resources to carry it out in the clinics.<sup>[7]</sup> Dental professionals need to be adequately educated in tobacco use prevention and cessation skills to increase their confidence and be able to help patients to quit smoking. Dentists with tobacco cessation training have been reported to perform more interventions, report increased self-efficacy, preparedness, and fewer barriers than those without training.<sup>[8]</sup> Educational intervention seemed to have an immediate intervention effect, being statistically significant in cessation counseling during the 6-month trial period in a study conducted in Finland.<sup>[9]</sup> There has not been any report of a study on the use of educational intervention in smoking cessation among dental students and dentists in Nigeria.

Therefore, this study determined the impact of an educational intervention on the awareness, attitude, practices, willingness, and perceived barriers of a group of Nigerian dental students and dentists to smoking cessation counseling in the dental clinic.

### Methods

A self-administered questionnaire based study was conducted in September 2007 to determine the awareness, attitude, practices, willingness, and perceived barriers of dental students and dentists in Lagos University Teaching Hospital, Idi Araba, Lagos, Nigeria, in relation to smoking cessation in the dental care setting. Subsequently, a series of lectures and seminars was given on smoking cessation and oral health to both students and dentists at the Lagos University Teaching Hospital. The lectures and seminars emphasized the brief intervention strategies for patients willing to quit using the five A's of cessation. Participants were followed-up with a repeat study in January 2009 using the same questionnaire that was used in 2007. Participants indicated their level of agreement with statements used to assess (1) the attitudes

on professional responsibility, (2) scope of dental practice in smoking cessation, and (3) effectiveness of smoking cessation counseling in the dental setting. The statements had a five-point Likert scale response which ranged from strongly agree to strongly disagree. Comparisons were made between initial results and current results to assess the impact of the educational intervention.

Data entry and analysis were done with Epi Info statistical software 3.5.4 version (CDC, Atlanta). Descriptive statistics were conducted and frequency tables generated. Chi-square tests of association were used to determine differences between the students and dentists' attitudes. Differences were considered statistically significant at the level of  $P < 0.05$ .

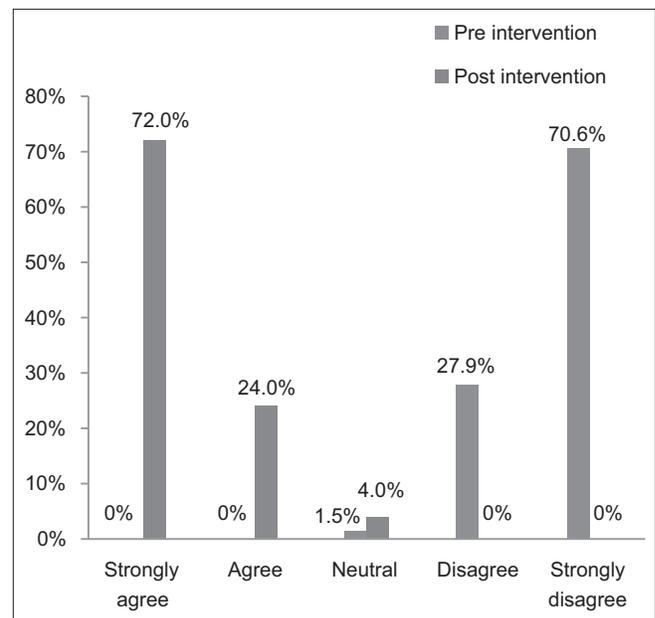
### Results

A total of 136 respondents participated in 2007 and 100 participated in 2009 (36 were lost to follow-up due to transfers). The demographic characteristics of the respondents are shown on Table 1.

Post intervention attitudes were significantly improved over pre intervention values for each parameter used in assessing attitudes as seen on Figures 1-4 and Table 2.

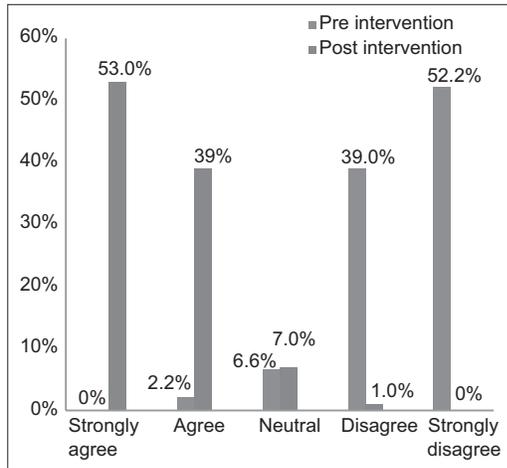
Awareness of smoking cessation programs had significantly increased among the participants from 30.1% to 87% ( $P = 0.000$ ).

Most (83.1%) of the respondents were willing to undergo training for smoking cessation with a slight increase in the post intervention group (an increase from 80.9% to



**Figure 1:** Dental professionals' responsibility to educate patients about risks of tobacco use

86%) There was no statistically significant difference between pre and post intervention willingness to undergo training for cessation ( $P = 0.300$ ). Only 11.3% of the

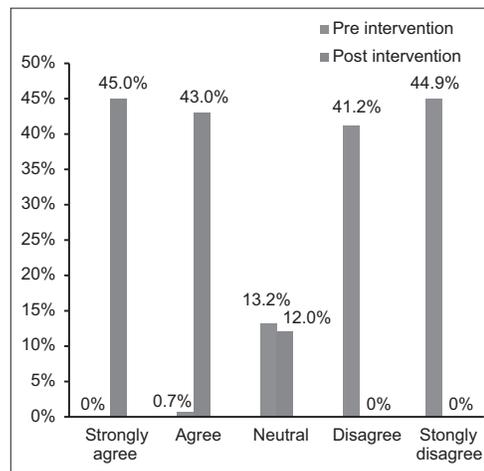


**Figure 2:** Comparison of respondents' belief about dental practitioners' involvement in smoking cessation counseling

Characteristics	Pre intervention (%)	Post intervention (%)
Age		
< 20 years	1 (0.7)	0
20-24	51 (37.5)	29 (29)
25-29	51 (37.5)	39 (39)
> 30 years	33 (24.3)	32 (32)
Gender		
Female	65 (47.8)	49 (49)
Male	71 (52.2)	51 (51)
Designation		
Dentists	63 (46.3)	62 (62)
Students	73 (53.7)	38 (38)

respondents were uninterested in providing smoking cessation services to their patients. A significantly higher proportion of the respondents were interested in providing cessation services after the intervention than before the intervention ( $P = 0.00002$ ) [Figure 4].

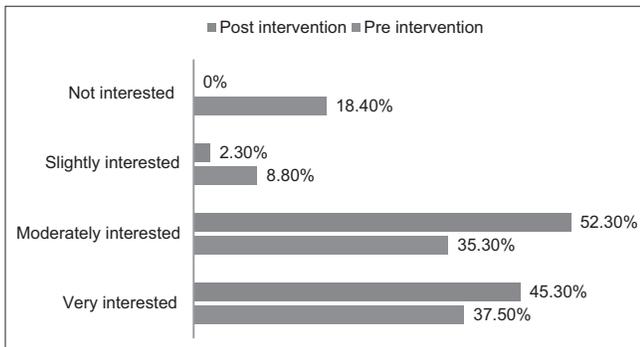
Perceived barriers to smoking cessation reported were lack of time, lack of necessary materials such as nicotine replacement therapy (NRT) and lack of knowledge. All the



**Figure 3:** Respondents views on effectiveness of smoking cessation in helping patients quit smoking

Barrier	Pre intervention (%)	Post intervention (%)	P value
Lack of knowledge	100 (74.1)	60 (60)	0.0000
Lack of materials	110 (80.9)	55 (55)	0.0000
Lack of time	120 (88.2)	64 (64)	0.0000

Attitude parameters	Pre intervention (%) n = 136			Post intervention (%) n = 100			P value
	Agree	Neutral	Disagree	Agree	Neutral	Disagree	
It is the dental professional's responsibility to							
Educate patients about the risk of tobacco use related to overall health or well-being	3 (2.2)	10 (7.4)	123 (90.4)	91 (91.0)	6 (6.0)	3 (3.0)	0.000
Educate patients about the risk of tobacco use related to oral health	0 (0)	2 (1.5)	134 (98.5)	96 (96.0)	4 (4.0)	0 (0.0)	0.000
Encourage patients to quit using tobacco	4 (2.9)	13 (9.6)	119 (87.5)	93 (93.0)	7 (7.0)	0 (0.0)	0.000
It is within the scope of dental practice to							
Ask patients if they use tobacco	1 (0.7)	2 (1.5)	133 (97.8)	98 (98.0)	2 (2.0)	0 (0.0)	0.000
Advice patients to stop using tobacco	3 (2.2)	9 (6.6)	124 (91.2)	92 (92.0)	7 (7.0)	1 (1.0)	0.000
Discuss health hazards of tobacco use	2 (1.5)	8 (5.9)	126 (92.6)	95 (95.0)	5 (5.0)	0 (0.0)	0.000
Discuss benefits of stopping	1 (0.7)	11 (8.1)	124 (91.2)	96 (96.0)	4 (4.0)	0 (0.0)	0.000
Tobacco use cessation counseling offered in the dental clinic can have an impact on patient stopping	1 (0.7)	18 (13.2)	117 (86.0)	88 (88.0)	12 (12.0)	0 (0.0)	0.000
The dentist's time can be better spent doing things other than trying to stop tobacco use in patients	111 (81.6)	14 (10.3)	11 (8.1)	14 (14.0)	16 (16.0)	70 (70.0)	0.000
It is not worth discussing tobacco use with patients since most people already know they should stop	119 (87.5)	10 (7.4)	7 (5.1)	7 (7.0)	4 (4.0)	89 (89.0)	0.000



**Figure 4:** Comparison of degree of interest in providing smoking cessation services among respondents

barriers were significantly reduced after the intervention [Table 3].

### Discussion

A few factors need to be considered in interpreting the findings of this study. First, the two studies were conducted at the Lagos University Teaching Hospital, Idi Araba, Lagos over a period of 2 years. The study population were dentists and dental students at the time of study, therefore, cannot be said to be representative of dentists and dental students in Nigeria. There are currently about eight dental schools with teaching hospitals spread all over Nigeria with different cultural attributes. Second, the smoking status of the respondents was not assessed as it was not one of the objectives of the study. These limitations do not, however, invalidate the important findings from this study.

The study was aimed at assessing the impact of an educational intervention on the awareness, attitude, practices, willingness, and perceived barriers to tobacco use cessation in a group of Nigerian dental students and dentists.

The provision of effective treatment for tobacco dependence using both pharmacological and behavioral interventions has achieved considerable progress globally. Gordon *et al.* compared a program utilizing dental practitioner advice to quit, along with proactive telephone counseling versus the standard five A's a follow-up from Clinical Practice Guidelines in 2,177 tobacco users from 68 dental offices. Both programs resulted in higher quit rates than did "usual care;" the five A's program resulted in the highest quit rate and was found to be the most applicable.<sup>[10]</sup> Others have also found the five A's program to be effective in helping smokers quit.<sup>[6]</sup> Despite these successes reported in most industrialized countries, earlier findings showed that Nigerian dentists and dental students had poor attitudes, low awareness and pessimistic views about smoking cessation in the dental clinic. The same study, however, found only 3% of the dentists and students had received any formal training while 80.9% were willing to receive training

in smoking cessation, and this may have accounted for the poor attitudes.<sup>[7]</sup>

The current study found a statistically significant positive change in the awareness, attitude, practices, and perceived barriers to tobacco use cessation of the participants after the educational intervention which involved didactic lectures and seminars. The significant shift from a pessimistic view and lack of professional obligation to a more optimistic and responsible stance toward smoking cessation in this study are also remarkable. While the proportion of dentists who reported barriers reduced significantly, barriers expectedly still existed after the educational intervention. This is likely to be an organizational problem as time is likely to be a problem to a dentist who has to provide services to a large number of patients in a government hospital. Second, the needed materials like NRT are not easily accessible in Nigeria and have to be imported, therefore, cost of providing the service may be another factor. Inclusion of this service in the National Health Insurance Scheme may breach this barrier. Didactic training has proven to be effective especially in the altering of attitudes in this study population, but the inclusion of methods such as role plays, motivational interviewing methods, and clinical sessions will further improve the confidence and ability to deliver effective smoking cessation to patients.

Training of dental health care professionals is not only an essential element of a cost-effective, evidence-based strategy for the control of tobacco use dependence; it also helps oral health care providers to perform their role as health communicators in the dental clinic setting.

### Conclusion

This study has shown that educational interventions like lectures and seminars can help in changing the attitudes of Nigerian dental students and dentists toward smoking cessation. Dental schools need to incorporate not just didactic instructions on the health impact of tobacco use but practical training in tobacco use cessation. Training in smoking cessation counseling will increase the willingness, confidence, and ability to provide information, during encounters with patients. We suggest incorporation of skills-based tobacco use cessation training into the dental educational curricula and continuing educational programs for dental health professionals.

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