

ORIGINAL ARTICLE

Nigerian dental students' compliance with the 4As approach to tobacco cessation

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Key words

Compliance • Dental students • Tobacco cessation • Approach

summary

Objective. To assess the Nigerian dental students' present effort at tobacco cessation assistance using the simple stepwise 4As model.

Methods. A cross-sectional survey of all the final level dental students in the Nigerian premier dental schools was carried out using a pretested self administered questionnaire.

Results. The response rate was 98.9%. Majority (95.6%) of the respondents routinely take history of tobacco use. A total of 93.9% of the respondents routinely advice patient who smoke to quit but only 46.1% actually counsel patient on how to quit. Six-tenth of the respondents knew about nicotine replacement therapy but only 36.1% knew the role antidepressant therapy in tobacco

cessation. Majority (87.2%) want cigarette sales to adolescents banned, 73.9% want adverts of cigarettes prohibited, 81.1% want cigarette smoking banned in public areas and only 2.8% will permit smoking in a dental office.

Conclusions. The survey revealed deficiency in compliance to the 4As approach to tobacco cessation among Nigerian dental students. The incorporation of proper tobacco counseling cessation protocol, with emphasis on the pharmacological therapy, into the dental curriculum is therefore desirable. Dental professionals at all levels should be involved effectively with tobacco cessation to significantly reduce the morbidity and mortality of tobacco use.

Introduction

Tobacco use is a significant cause of morbidity and mortality globally [1]. Providing tobacco cessation services to patients who use tobacco is one of the professional responsibilities of dental professionals [2, 3]. Successful tobacco cessation services improve the outcome of dental treatments, add quality and years to patients' lives and lead to cumulative improvement in overall health of patients [4]. Universal adoption of effective tobacco cessation interventions at clinical encounters has remained one of the most important goals of combined efforts of both researchers and clinicians [5]. It is stated that optimal implementation of routine smoking cessation intervention in dentistry is a key aim in the delivery of dental care [5].

Several strategies have been adopted by the World Health Organization (WHO) Global Oral Health Programme to control tobacco-related oral diseases and adverse conditions [6]. They include collaboration with some primary partners in official relations with the WHO (i.e. the World Dental Federation and the International Association for Dental Research), development of models for tobacco control programmes and effective involvement of dental professionals in tobacco cessation programmes. The 4As approach to giving smoking cessation advice is a well documented approach which forms a useful chair side guide for dentists and hygienists has been shown to increase a smoker's chance of quitting [7-10].

It provides a clear and effective way forward for dental professionals to become engaged in this important and relevant area of non communicable disease prevention [11]. The 4As approach is a straightforward and quick means of identifying smokers who want to quit and how best to help them to be successful. It is one of the evidence-based guidelines that provide dental professionals an easy approach and advice on patient smoking cessation practices.

The 4As approach has been described as thus: the first A stands for 'ASK'. This involves asking all patients about their smoking status and recording information in clinical notes. It also involves checking all patients' smoking status at regular intervals. The second A stands for 'ADVISE'. All dental professionals are expected to give clear and personalized advice to all smokers to stop smoking. The third A stands for 'ARRANGE'. Here the oral health benefits of quitting is expected to be stressed, encouragement and information on available cessation services provided and motivated smokers referred to the local Smoking Cessation clinic. The fourth A stands for 'ASSIST'. Support should be offered to those smokers who want to stop but are not prepared to be referred. This will involve reviewing the patient's past experiences of quitting, setting new quit date and encouraging the use of Nicotine Replacement Therapy (NRT). Dental professionals must also support banning of adverts of all forms of tobacco and also make their dental offices smoke free.

It is expected that dental education programs should prepare students to deal effectively with functional tobacco cessation approach. As future oral health providers, the compliance of dental students to the 4As approach should be given considerable attention. Non compliance with the accepted standard can be corrected easily as dental students are generally receptive to the educational material on tobacco use and smoking cessation counseling. The previous work on tobacco cessation services among Nigerian dental students was on their attitudes to tobacco cessation [12]. No work has been done to assess the compliance of dental students to any universal tobacco cessation services models.

The objective of the study was to assess the Nigerian dental students' present effort at tobacco cessation assistance using the simple stepwise 4As model.

Materials and methods

The study was carried out between March and December, 2008. The final year dental students of the four Nigerian premier dental schools located in Benin-City, Lagos, Ibadan and Ile-Ife were recruited for the study (N = 182). The data was collected using a self-administered questionnaire. The questionnaire was pretested to ensure reliability. The questionnaire obtained information on respondents' demographic variables, attitude to banning of smoking in public places and banning of cigarette advertisement, their exposure to second hand smoking and compliance with tobacco cessation programme using the 4As approach. The demographic variables obtained include age, sex, dental school, tobacco use and the type used. The assessment of the compliance with tobacco cessation programme using the 4As approach contained in the questionnaire as thus.

The first A was assessed by two questions to determine if the respondents routinely take detailed history of tobacco use from patients and if they document the information adequately. The positive response to the two questions was assumed as compliance to the first A while a negative response to one or both questions was assumed as non compliance.

The second A was assessed with a question titled "do you routinely advice smokers to stop smoking". The structured response was either yes or no. A yes response was assumed as compliance with the second A. All dental professionals are expected to give clear and personalized advice to all smokers to stop smoking.

The third A was assessed with question on whether the respondents encourage smokers to quit by emphasizing the oral health benefits of quitting.

The fourth A was assessed with 3 questions which elicited information on respondent's knowledge of the use of pharmacological methods like nicotine replacement therapy in tobacco cessation, their attitude towards smoke free dental offices and the ban of adverts of all forms of tobacco. The compliance with 4As approach was assessed for each of the As independently.

The questionnaires were distributed and filled during regular class sessions by the participants and returned to the researchers in an anonymous envelope. Participants were educated on the objective of the study, assured of strict confidentiality of their responses, and informed consent obtained prior to questionnaire administration. Participation in the research was voluntary and non participation did not adversely affect their academic, clinical and activities of the involved students. Data analysis was done using SPSS version 15.0 and the analysis was done using frequency distribution, cross tabulation, test of significance with chi-square, level of significance $p < 0.05$.

Results

Response rate was 98.9% (180/182). Respondents were 52.8% male and 47.2% female, with mean age 25.4 ± 3.0 years. Only 3.3% of respondents reported the use of tobacco and cigarette smoking is the only form reported. Majority (83.3%) of the smokers were males (Tab. I). Many of the respondents (61.1%) reported exposure to secondhand smoke, mostly in public places (68.2%) and 81.1% want cigarette smoking banned in public places, only 2.8% will permit smoking in a dental office, 87.2% want cigarette sales to adolescents banned and 73.9% want advertisement of all forms of tobacco prohibited. Majority (95.6%) routinely take the history of tobacco consumption from all patients at the point of diagnosis (Tab. II), 93.9% routinely advice patients who smoke to quit (Tab. III) but only 46.1% stress the oral benefit of stopping tobacco consumption and actively counsel smokers who are willing to quit how to (Tab. IV). Sixty percent had the knowledge of the use of Nicotine replacement therapy in Tobacco cessation (Tab. V) but only 36.1% is aware that antidepressants has any role

Tab. I. Demographic characteristics of respondents.

| Characteristics | Frequency (no.) | Percent (%) |
|----------------------------------|-----------------|-------------|
| Age group (years) | | |
| 20-24 | 76 | 42.2 |
| 25-29 | 87 | 48.3 |
| 30-34 | 14 | 7.8 |
| 35-39 | 3 | 1.7 |
| Gender | | |
| Male | 95 | 52.8 |
| Female | 85 | 47.2 |
| Tobacco use | | |
| Smokers | 6 | 3.3 |
| Non- smokers | 174 | 96.7 |
| Location of Dental School | | |
| Benin-City | 70 | 38.9 |
| Ibadan | 33 | 18.3 |
| Ile-Ife | 34 | 18.9 |
| Lagos | 43 | 23.9 |
| Total | 180 | 100 |

to play (Tab. VI). Almost 80% agree that there is a need to include tobacco cessation techniques in the Nigerian dental school curriculum (Tab. VII).

Discussion

The results obtained from this study showed that the Nigerian dental students' attempt at tobacco cessation, following the 4As guideline, is better than what was recorded in a previous study [13] where dental students provided counseling inconsistently, with 69% asking about smoking, 58% advising cessation, 24% offering assistance, and 22% providing follow-up on a routine basis. It is also better than another result where 64% of respondents stated that they gave advice on tobacco cessation fairly regularly or always [14].

Fewer Nigerian dental students actually arrange for smokers to quit smoking. This study revealed that less than half of the respondents actually state the oral benefits of tobacco cessation and teach the steps involved. It is even more difficult to arrange tobacco cessation for willing and motivated patients because most oral health care facilities are not properly integrated with the few available local cessation services. This makes referrals very difficult. The most cost-effective tobacco control strategies are population-wide policies, such as bans on direct and indirect tobacco advertising, tobacco tax and price measures, smoke-free environments in all public and workplaces, and large clear graphic health messages on tobacco packaging [15]. All these measures are included in the provisions of the WHO Framework Convention on Tobacco Control (WHO FCTC). Dental professionals are also expected to campaign for smoke-free or tobacco-free oral health care facilities to make nonsmok-

Tab. II. Respondents who routinely take history of tobacco consumption.

| | Male n (%) | Female n (%) | Total n (%) |
|-------|------------|--------------|-------------|
| Yes | 90 (94.7%) | 82 (96.5%) | 172 (95.6%) |
| No | 5 (5.3%) | 3 (3.5%) | 8 (4.4%) |
| Total | 95 (100%) | 85 (100%) | 180 (100%) |

$\chi^2 = 0.04$; df = 1; P = 0.84.

Location of dental school

| | BENIN | 1BADAN | ILE-IFE | LAGOS | TOTAL |
|-------|------------|-----------|------------|------------|-------------|
| Yes | 66 (94.3%) | 33 (100%) | 32 (94.1%) | 41 (95.3%) | 172 (95.6%) |
| No | 4 (5.7%) | 0 (0%) | 2 (5.9%) | 2 (4.7%) | 8 (4.4%) |
| Total | 70 (100%) | 33 (100%) | 34 (100%) | 43 (100%) | 180 (100%) |

$\chi^2 = 1.97$; df = 3; P = 0.58.

Tab. III. Respondents who routinely advice smokers to quit.

| | Male | Female | Total |
|-------|------------|------------|-------------|
| Yes | 86 (90.5%) | 83 (97.6%) | 169 (93.9%) |
| No | 9 (9.5%) | 2 (2.4%) | 11 (6.1%) |
| Total | 95 (100%) | 85 (100%) | 180 (100%) |

$\chi^2 = 2.82$; df = 1; P = 0.09.

Location of dental school

| | BENIN | 1BADAN | ILE-IFE | LAGOS | TOTAL |
|-------|------------|-----------|------------|------------|-------------|
| Yes | 65 (92.9%) | 32 (97%) | 31 (91.2%) | 41 (95.3%) | 169 (93.9%) |
| No | 5 (7.1%) | 1 (3%) | 3 (8.8%) | 1 (4.7%) | 11 (6.1%) |
| TOTAL | 70 (100%) | 33 (100%) | 34 (100%) | 43 (100%) | 180 (100%) |

$\chi^2 = 2.22$; df = 3; P = 0.53.

Tab. IV. Respondents who counsel patients on how to quit smoking.

| | Male | Female | Total |
|-------|-----------|------------|------------|
| Yes | 38 (40%) | 45 (52.9%) | 83 (46.1%) |
| No | 57 (60%) | 40 (47.1%) | 97 (53.9%) |
| Total | 95 (100%) | 85 (100%) | 180 (100%) |

$\chi^2 = 2.53$; df = 1; P = 0.11.

Location of dental school

| | BENIN | 1BADAN | ILE-IFE | LAGOS | TOTAL |
|-------|------------|------------|------------|------------|------------|
| Yes | 22 (31.4%) | 19 (57.6%) | 15 (44.1%) | 27 (62.8%) | 83 (46.1%) |
| No | 48 (68.6%) | 14 (42.4%) | 19 (45.9%) | 16 (36.2%) | 97 (53.9%) |
| Total | 70 (100%) | 33 (100%) | 34 (100%) | 43 (100%) | 180 (100%) |

$\chi^2 = 12.69$. df = 3; P = 0.005.

Tab. V. Respondents' knowledge of nicotine replacement therapy.

| | Male | Female | Total |
|-------|------------|------------|------------|
| Yes | 54 (56.8%) | 54 (63.5%) | 108 (60%) |
| No | 41 (43.2%) | 31 (36.5%) | 72 (40%) |
| Total | 95 (100%) | 85 (100%) | 180 (100%) |

$\chi^2 = 0.58$; df = 1; P = 0.45.

Location of dental school

| | BENIN | 1BADAN | ILE-IFE | LAGOS | TOTAL |
|-------|------------|------------|------------|------------|------------|
| Yes | 40 (57.1%) | 13 (39.4%) | 14 (41.2%) | 41 (95.3%) | 108 (60%) |
| No | 30 (42.9%) | 20 (60.6%) | 20 (58.8%) | 2 (4.7%) | 72 (40%) |
| Total | 70 (100%) | 33 (100%) | 34 (100%) | 43 (100%) | 180 (100%) |

$\chi^2 = 33.48$; df = 3; P = 0.000.

ing the norm. These supportive measures will go a long way in assisting a smoker who is willing to quit smoking. There was an overwhelming support for banning of smoking in public places, especially in dental offices, banning of advertisement of tobacco products and sales of cigarette to adolescents. This supports results from other previous studies [16, 17].

Dental professionals are also expected to assist smokers who want to stop, but are not prepared to be referred. This may involve the use of NRT and the use of other pharmacological agents like antidepressants. Research findings suggest that these medications are safe and effective [18-22]. NRT is not the mainstay of smoking cessation but is an effective supplement to behavioural interventions and good support. It is support on top of pharmacokinetics further increases the chance of success. In fact, research indicates that the more support provided to the patient the higher the cessation rates [10]. This study revealed that the dental students' knowledge of the pharmacological aspect of tobacco cessation is not optimal. This may affect the way they will recommend it to their patients in the future. A previous study reported this area of deficiency in tobacco cessation services where only 37% of respondents recommended over-the-counter nicotine replacement therapy [14].

Many respondents will like tobacco cessation techniques to be included in the dental curriculum. This may be because they realize that there are gaps in their training in this area that needs to be filled. Studies have shown gaps still exist within undergraduate medical education in the area of tobacco cessation [23-25].

Conclusion

It can be inferred from the study that the Nigerian dental students' performance in the 1st two As ('ASK AND 'ADVICE') was well above average although there are areas of deficiencies in the last two As ('ARRANGE AND

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Tab. VI. Respondents' of knowledge of the use of antidepressant therapy in tobacco cessation.

| | Male | Female | Total |
|-------|------------|------------|-------------|
| Yes | 35 (36.8%) | 30 (35.3%) | 65 (36.1%) |
| No | 60(63.2%) | 55 (64.7%) | 115 (63.9%) |
| Total | 95 (100%) | 85 (100%) | 180 (100%) |

$\chi^2 = 0.00$; $df = 1$; $P = 0.95$.

Location of dental school

| | BENIN | 1BADAN | ILE-IFE | LAGOS | TOTAL |
|-------|------------|------------|------------|------------|-------------|
| Yes | 29 (41.4%) | 8 (24.2%) | 10 (29.4%) | 18 (41.9%) | 65 (36.1%) |
| No | 41 (58.6%) | 25 (75.8%) | 24 (70.6%) | 25 (58.1%) | 115 (63.9%) |
| Total | 70 (100%) | 33 (100%) | 34 (100%) | 43 (100%) | 180 (100%) |

$\chi^2 = 4.15$; $df = 3$; $P = 0.25$.

Tab. VII. Respondents in support of inclusion of cessation techniques in dental school curriculum.

| | Male | Female | Total |
|-------|------------|------------|-------------|
| Yes | 77 (81.1%) | 66 (77.6%) | 143 (79.4%) |
| No | 18 (18.9%) | 19 (22.4%) | 37 (20.6%) |
| Total | 95 (100%) | 85 (100%) | 180 (100%) |

$\chi^2 = 0.14$; $df = 1$; $P = 0.70$.

Location of dental school

| | BENIN | 1BADAN | ILE-IFE | LAGOS | TOTAL |
|-------|------------|------------|------------|------------|-------------|
| Yes | 59 (84.3%) | 27 (81.8%) | 26 (76.5%) | 32 (74.4%) | 143 (79.4%) |
| No | 12 (15.7%) | 6 (18.2%) | 8 (23.5%) | 11 (25.6%) | 37 (20.6%) |
| Total | 70 (100%) | 33 (100%) | 34 (100%) | 43 (100%) | 180 (100%) |

$\chi^2 = 1.55$; $df = 3$; $P = 0.67$.

ASSIST'). More needs to be done to incorporate tobacco cessation counseling into routine dental care and the culture of dentistry must be changed to view tobacco use as a dental problem. It is therefore recommended that there should be a national standard for tobacco cessation curriculum in Nigerian dental schools. The curriculum content should include the biological effects of tobacco use, the history of tobacco culture and psychosocial aspects of tobacco use, prevention and treatment of tobacco use and dependence, and development of clinical skills for tobacco use prevention and cessation. In addition, tobacco cessation should be considered a clinical competency. Dental professionals at all levels should be involved effectively with tobacco cessation to significantly reduce the morbidity and mortality of tobacco use.

The findings from this study are likely to be of interest to researchers working in other nations. They represent what obtains in the third world countries and may serve as a basis for comparison with similar works done in developed world. The principal concern of Tobacco control is to provide a forum for research, analysis, commentary and debate on policies, programmes and strategies used in various part of the world.

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