Perception and Attitudes of Dental Students towards Their Role in the Delivery of a Brief Smoking Cessation Intervention

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Significance of the Study

- This study evaluated the perceptions and attitudes of dental Students' towards their role in the delivery of a brief smoking cessation intervention.
- The study had dental students identify areas in smoking cessation counseling training that will help them implement counseling into their clinical practice.
- Students need more client-centered skills and knowledge to bolster their confidence in cessation counseling.

Keywords

Dental students · Smoking · Cessation · Brief interventions

Abstract

Objectives: An assessment of dental students' attitudes and perceptions towards smoking, and their role in smoking cessation, needs to be understood to develop an effective training program in smoking cessation counseling. The aim of the study was to understand attitudes, perceptions, and knowledge of students towards their role in smoking cessation, to understand students' self-reported requirements in relation to skills and knowledge prior to training, and to understand students' self-reported learning from training. **Materials and Methods:** Dental students ($n = 46$) in clinical training at the Kuwait University's Faculty of Dentistry participated in this study. Prior to the training on smoking cessation, an evaluation of the students' attitudes, perceptions, and knowledge was conducted. The students also completed a pre- and post-classroom assessment technique (CAT). De-

scriptive analysis of the students' attitudes, perceptions, and knowledge towards smoking and their role in smoking cessation was evaluated. A qualitative content analysis of the students' responses to a CAT was conducted. **Results:** Ninety-eight percent of the students showed willingness to perform a brief smoking cessation intervention; 62% of the students perceived their role in smoking cessation as difficult; and 95% agreed that leaders in the profession expected them to engage in a smoking cessation intervention. Four categories from the pre-CAT responses were generated: how to influence; effective communication skills; bolster knowledge and understanding; and intrapersonal skills. Analysis of the post-CAT responses identified the following three categories: patient-centered communication; gaining self confidence in skills set; and support frameworks. **Conclusions:** Students need more client-centered skills and knowledge to bolster their confidence in cessation counseling.

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Introduction

Tobacco use has detrimental effects on health, including the occurrence of cardiovascular and respiratory diseases, carcinomas, and a range of other chronic ailments. Approximately six million annual mortalities worldwide are associated with tobacco use [1]. From these, the reported annual incidence of oral and lip cancers was estimated to be 1,98,975 worldwide and 1,30,933 in developing countries in 2012 [2]. The consumption of tobacco products also has a negative impact on oral health; tobacco smoking, in particular, is a significant etiological factor in periodontal diseases, deficits in postoperative healing and recovery, and plays a role in the failure of dental implants [3].

Global indicators show a decline in smoking among high-income countries; however, in low- and middle-income countries, there is a continuous increase in the use of tobacco products [4]. Smoking incidence and prevalence in Middle Eastern countries do not mirror those of Western or developing countries in Asia [5]. The current trend in Kuwait, among adult males, shows a higher prevalence of smoking, as compared to females. Whereas, among adolescent females, there is an increased reported smoking prevalence, which appears to be related to limited awareness of smoking hazards and their detrimental effects on health [6, 7].

A WHO Framework Convention for Tobacco Control, ratified by 177 countries worldwide, is one of the several attempts in the global fight against tobacco use. One of the six measures developed to advance tobacco control is “offer help to quit tobacco use” [8]. The European Union Working Group on Tobacco and Oral Health also adopted the same position, recommending that healthcare clinicians screen and provide smoking cessation counseling to all adults [9]. In this regard, smoking cessation counseling is more effective if delivered integrated with general clinical practice activities [10]. Dentists are in a perfect position to utilize their clinical contact to incorporate smoking cessation interventions [11–15]. Furthermore, dentists are prepared to participate and have a positive attitude towards smoking cessation [16].

Dental schools in the United States have acknowledged that students need training in patient education and counseling and have developed their curricula with tobacco cessation-related content [17]. A study conducted in the Faculty of Dentistry at Kuwait University showed that both the faculty and students believed counseling to be effective but were reluctant to take an interventionist role in this regard [18, 19].

The current study aimed to evaluate dental students’ perceptions and attitudes towards their role in the delivery of a brief smoking cessation intervention. It also aimed at identifying self-perceptions of what would be required for smoking cessation counseling training in Kuwait.

Methods

Participants

The study population comprised students at the Faculty of Dentistry in the clinical years of training. This consisted of two classes, with a total of 46 students, 22 in the 7th year (final year) and 24 in the 6th year.

Classroom Assessment Technique: Minute Paper

The minute paper technique was utilized for classroom assessment. The technique employs a quick way to collect written feedback on students’ learning, with minimal time and energy. The instructor gives the students 2 min in the beginning of the class to answer the question “what do you expect to learn from the smoking cessation training?” and stops the class 2 or 3 min early to ask students to respond briefly to the questions “what are you taking away from this training?”, “what needs further clarification?”, and “what has yet to be addressed?” [20].

Procedure

Before the initiation of a workshop on smoking cessation counseling, the students were asked to respond to a 35-item attitude questionnaire [21]. The initial four questions in the questionnaire asked about the respondents’ date of birth, sex, if they currently smoke tobacco products, and if there are any smokers in their family. The subsequent questions assessed students’ agreement/disagreement with 15 negative-attitude statements against smoking and their agreement/disagreement with 17 positive-attitude statements against smoking; the responses to the questions were on a 5-point Likert scale (disagree strongly, disagree, do not agree or disagree, agree, and strongly agree). The students also answered a three-item survey questionnaire asking them about their willingness to perform smoking cessation and their attitudes towards smoking cessation counseling. This was also assessed on a 4-point Likert scale (agree strongly, agree somewhat, disagree somewhat, and disagree strongly).

An anonymous, open-ended pre- and post-classroom assessment technique (CAT; minute paper) in a paper and pencil format was presented to the students.

A Pre-CAT question asked “what do you expect to learn from smoking cessation training?” This was asked prior to the initiation of the workshop. The post-CAT question was “what learning are you taking away from the workshop?”, which was given to the students after they participated in an introductory 4-h smoking cessation workshop.

Workshop Smoking Cessation

The introductory workshop on smoking cessation counseling was a 4-h lecture and hands-on simulation activities. This introductory workshop was guided by a brief motivational interviewing (MI) approach and stages of change [22, 23]. MI has been linked flexibly with the framework of the Trans-Theoretical Model of Intentional Human Behavioral Change [23], which offers a view of

Table 1. Demographics

Mean age $\pm$ SD	23.40 $\pm$ 0.74
Gender, <i>n</i> (%)	
Male	11 (25)
Female	33 (75)
Smoking, <i>n</i> (%)	
Yes	3 (6.8)
No	41 (93.2)
Smokers in the family, <i>n</i> (%)	
None	14 (31.8)
Parent and/or siblings	21 (47.7)
Others	9 (20.5)

behavioral change as a series of gradual steps involving multiple tasks and various coping activities.

Data Analysis

A mixed-method design was employed in this study. Quantitative analysis (SPSS Version 20.0; SPSS Inc., Chicago, IL, USA) was used to perform statistical analysis. Descriptive statistics included the mean age, sex distribution, and smoking status of the survey respondents. Responses to attitude and willingness to perform cessation counseling questions were listed along with associated percentages, medians, and interquartile range.

Qualitative Analysis

A qualitative content analysis was conducted in which coding categories were derived directly and inductively from the raw data. Individual themes were generated as the unit for analysis, expressed in a single word, a phrase, or a sentence. A coding was assigned to the text once it represented a single theme [24]. Since categories were developed inductively from the raw data, a constant comparative method was used to stimulate original insights and identifying patterns, themes, or relationships, to enhance the analysis and synthesis of the results. It involved the researchers taking one portion of the data and comparing it to all other portions of the data, whether similar or different. The constant, comparative method allows new connotations to be drawn from the research data, unlike the deductive approach, which at the outset indicates what will be found and defined [25]. Coding consistency was checked through an assessment of inter-coder agreement. There were two evaluators involved in the research, and an inter-rater agreement of >80% was obtained, as outlined by Hartmann [26]. To determine codability, a reliable occurrence was taken to be a minimum of 10% of the completed surveys (a minimum of 4 to deduce a coded theme). Whenever the percentage of the agreement did not reach the acceptable level (80%), the coding was revised [27].

Results

Attitudes

A total of 46 students responded to the distributed questionnaires. Table 1 outlines demographic details of the respondents. Overall, the majority of students dis-

played strong agreement that smoking generally has detrimental effects and that there should be exerted effort made to stop smoking in the general population. The statements that respondents agreed most strongly with were that smoking should be avoided and that smoking has serious health effects. The negative-attitude statements against smoking presented were that life is too short to worry about disease and that smoking is relatively harmless, which most respondents disagreed with.

Willingness, Attitude, and Expectation

When asked about the perception of their role and responsibility in smoking cessation counseling, approximately 91% of the students showed willingness to perform cessation counseling. Regarding their perceived perception of what other professionals expect them to do in terms of smoking cessation counseling, 95% believed that leaders in the profession expect them to perform cessation counseling; 72% also believed that their colleagues expected them to counsel, 77% felt that their staff expected them to perform cessation counseling, and 45% felt that their patients expected them to perform counseling. Ninety-eight percent indicated that they would be willing to implement smoking cessation counseling in their practice. Seventy-one percent of these felt that cessation counseling in the dental setting would be effective, while 62% felt that performing it would be difficult.

Qualitative Analysis

Pre-CAT

This analysis aimed to identify skills expected to be learned from training. From the raw data of the pre-CAT, four broad categories were identified in the context of smoking cessation counseling: (1) how to influence; (2) effective communication skills; (3) bolster knowledge and understanding; and (4) intrapersonal skills (self and identity).

Category 1, how to influence others: the students' perception of the strength of their perceived interaction with patients differ along the persuasion continuum between direct – manage – advise – convince – support. Some students felt that the most significant role is to be able to convince patients of the long-term benefits of smoking cessation directly. Other students looked at their role in a more supportive and less directive way to bring long-term change.

Category 2, effective interpersonal skills: the category of effective interpersonal skills identified the student desire to develop and master some effective skills, such as how to “talk to,” “interact with,” “approach,” “deliver the

message,” “raise awareness,” and “refer.” Some students emphasized the importance of interpersonal skills, such as talking to, interacting with, or approaching the patient. However, some students realized the importance of how they deliver the message to the patient, while other students believed that raising awareness was an important interpersonal skill needed to be developed.

Category 3, bolster knowledge and understanding: students of dentistry need to understand the harmful effects of smoking, including the risks and consequences of smoking. For some students, it was not necessarily about the risks associated with smoking but wanting to know how to provide evidence-based information and how to inform the patient effectively, while other students highlighted the particular types of specific information they required. Students also required more details about treatments and/or therapies that are available either to prescribe or recommend devices/medications that help stop smoking. They were also enquired about the appropriate level of treatment or realistic targets for a patient.

Category 4, intrapersonal skills: some students were aware of the need for an internal shift of attitude and were concerned about how to manage professional boundaries. Others expressed the need to build self-efficacy or self-belief. While others expressed a need to learn how to regulate their reaction to the patient.

Post-CAT

The following categories were identified: (1) patient-centered communication; (2) gaining self-confidence in skills; and (3) supportive frameworks or guides.

Category 1, patient-centered communication: some students realized their professional role, which was to communicate with the patient as “adult-to-adult,” and not to take a parental or superior moral high ground. Most students also noted the importance of listening attentively to the patient. Key values gained that supported patient-centered communication were primarily supporting patient autonomy, with a few students mentioning the importance of nonjudgmental attitudes and showing respect towards the patient. However, a few students required more guidance on the language/phrasing to use with patients to facilitate, rather than direct. Furthermore, students requested more guidance on how to intrinsically motivate their patients.

Category 2, gaining self-confidence in skills: many students recognized that gaining the skills that help facilitate or open up communication with the patient will make them more confident. Some students felt better able to

communicate with patients and more professionally, while others felt able and aware of how to deal with patients’ resistance and reactions, such as how to roll with resistance – which is working with the patient to elicit their own motivation to make a change in their behavior. Some students expressed a need for further training and support to develop their self-efficacy in this regard. In addition, to further support their self-efficacy and confidence regarding skills, students requested more training and support in dealing with individual differences and personality traits.

Category 3, supportive frameworks or guides: a supportive structure, or framework, was beneficial for some students as it gave them more of an understanding of what was happening in the change process. Furthermore, a scaling method provided a good structure for some students to help assess patient motivation. However, more details on the maintenance and relapse phase of change were sought, and some students required medical and therapeutic knowledge to support them in their clinical dental work. Ongoing support and specialized training delivered by different modalities were also requested by some students.

Discussion

This study aimed to evaluate dental student’s perception of and attitudes towards their role in the delivery of a brief smoking cessation intervention before receiving a 4-h introductory training and to understand and reflect upon self-reported learning from training. The approach to this study was based on the belief that while knowledge is actively constructed by learners based on their existing cognitive structures, learning will progress relative to the stage of cognitive development, understanding, and the existing intellectual framework. This was done to identify areas of student self-reported weaknesses and strengths that would have an impact on the effectiveness in delivering a brief smoking cessation instruction to patients.

Two ground rules that were to be established before embarking on this two-tier evaluation and analysis. The majority of participants were aware of the detrimental effects of smoking on individuals and displayed positive attitudes and willingness towards smoking cessation. Furthermore, the study group had very few smokers; which was promising, as it has been reported that smokers tend to show less favorable attitudes towards smoking cessation activities [28]. Nonetheless, in Kuwait and in-

ternationally, barriers for implementation continue to emerge despite positive attitudes and willingness of practitioners to implement some form of smoking cessation counseling into their clinical practice. A belief of insufficient skill to be able to help patients, as well as the lack of training of both the trainees and the trainers, are further barriers [16, 19, 26]. In this regard, universities and faculties identified the need to adjust the curricula to allow for adequate clinical training in counseling skills. However, a report from New York City-based academic institutions showed that residency programs are still not able to adequately prepare students for smoking cessation counseling. For this to be effective, there should be a move from traditional didactic teaching to a more comprehensive training strategy that includes practical instruction and clinical supervision [29]. Kuwait University's Faculty of Dentistry currently provides smoking cessation mainly as part of didactic teaching. Kuwaiti dental students identified areas in which they wished to have a better understanding, such as the physical and chemical effects of smoking. They highlighted the need for communication and counseling skills to be part of their training and also identified a need for skilled-based learning such as to "how to convince patients to change, and the supportive and directive ways to bring about change in patients". Furthermore, they identified a need for training in communication with and approach to patients, in how to deliver effective messages, and how to raise awareness. Intrapersonal skills were also highlighted, as well as concepts of the internal shift of behaviors, management of professional boundaries, and building of self-efficacy.

The brief smoking cessation training facilitated students' understanding of the psychological frameworks and theories. They also achieved an understanding and development of the skills related to client-centered practice, especially in how to approach and engage a patient in smoking cessation. While some students reported confidence/self-efficacy and felt more capable to deal with patients, they still cited resistance and severe reactions as potential barriers. Thus, the brief intervention training helped students gain an understanding of basic behavioral change theories in a clinical context and develop some basic patient-centered communication skills, which included counseling and MI [22, 23]. However, more work and training is required to improve the skills related to the delivery of smoking cessation.

This initial study was conducted to explore and evaluate students' attitudes and perceptions related to smoking cessation, as well as their skill level. We need to be mind-

ful of the limitations of this study such as the small sample size. Furthermore, we need to be cautious with the interpretation of results; as the professional language of communication is English, students in the Faculty of Dentistry are required to develop a high level of proficiency in English before being accepted. However, the native language of the students is Arabic, and it is not clear if this would have influenced the development of communication between colleagues (professional communication with colleagues is done in English) and with patients (depending on the patient background – communication is either in English or Arabic).

Conclusions

Students have shown willingness to perform brief smoking cessation interventions. It is apparent that more client-centered skills and knowledge are required to bolster their confidence in engaging with the patients. However, they indicated that performing such counseling is difficult, even though all students receive lectures on cessation counseling as part of their didactic training. To help reduce the barriers to the performance of cessation counseling, students should benefit from practical training that would address ways to teach them practical strategies that would aid their inter-personal skills. This would increase confidence and ability to bring about change in students and to bring about long-term change in student behavior (providing counseling) and their patients (help quit smoking).

Statement of Ethics

This study received approval from the Ethical Committee of the Faculty of Dentistry at Kuwait University, in accordance with the Human Subject Oversight Committee.

Disclosure Statement

The authors of this publication, M.E. Khalaf, S. Curtin, and A. O'Reilly Trace, declare that they have no conflicts of interest. The authors did not receive institutional financial support for this publication.

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