Allied Dental Education

Dental Hygiene Students’ Perceptions of a Cultural Competence Component in a Tobacco Dependence Education Curriculum: A Pilot Study

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Abstract: First Nations and Inuit peoples have tobacco use rates three times that of the Canadian national average. Providing tobacco dependence education (TDE) requires an understanding of the factors surrounding tobacco use that are culturally specific to this population. The aim of this pilot study was to evaluate the effectiveness of a new cultural competence component for Canadian First Nations and Inuit peoples in a TDE curriculum at Dalhousie University School of Dental Hygiene, Halifax, Nova Scotia, Canada. In 2011, the TDE curriculum was revised to include a First Nations and Inuit people’s cultural component. A 32-question survey was developed for the study, with questions divided into four subscales regarding students’ perceived knowledge, skills, comfort level, and attitudes about working with this population. Responses from students in two succeeding years were compared: the first cohort had not participated in the revised curriculum (56% response rate), and the second cohort had (63% response rate). The results showed an overall improvement in the subscales evaluated and a significant (p=0.002) improvement in the knowledge subscale of the students who received the new TDE curriculum, specifically regarding knowledge about sociocultural characteristics, health risks, and cultural healing traditions of First Nations and Inuit people. Although the results indicated an increase in the knowledge of the culture of First Nations and Inuit peoples, it is unclear whether the students felt better prepared to provide TDE to this population. For future research, the investigators would examine what learning experiences and further changes to the curriculum could be provided to facilitate the level of preparedness to successfully deliver TDE.

Cultural competence is described as “a process in which an understanding of cultural attitudes, values, beliefs, and practices is used to help guide care for an individual, taking into consideration specific history and needs and avoiding the use of stereotypes and personal biases.” Cultural competence has sparked the interest of policy makers as a strategy that can help guide health care providers in better meeting an individual’s needs and reducing racial/ethnic disparities in health care delivery. Cultural competence is to create a health care system and workforce that are capable of delivering the highest quality care regardless of race, ethnicity, culture, or language proficiency. Decreasing disparities surrounding health care requires all health care sectors to take action in increasing cultural competence among providers in specific fields.

There has been discussion since the 1990s on the importance of developing dental hygiene curricula that include the knowledge and skills necessary to provide care in a culturally competent manner. Darby and Walsh stress the importance of culture in oral health care, noting that “culture plays an integral role in dental hygiene because oral health and wellness, disease and illness are culturally determined.” Charbonneau et al. suggested that more studies should be conducted to evaluate the effectiveness of cultural competence education in dental and dental hygiene programs.
Tobacco use can have a direct effect on the development of many oral diseases and can decrease the success rate of periodontal therapy. Tobacco use has also been indicated as a causative factor in development of many other chronic diseases, such as heart disease, lung disease, diabetes mellitus, and cancer of the cervix and bladder. It is estimated that 21% of all deaths in Canada are due to smoking. Smoking rates have declined in the last 25 years, but since 2009, the decline has levelled off.

Oral health professionals are well placed to educate and motivate their patients in tobacco cessation. The Canadian Health Measures Survey reported that 74% of Canadians visited a dentist in 2009; and, of these, 84% of adolescents and 70% of adults aged 20 to 39 made an annual dental visit. Regular appointments with the dentist and dental hygienist allow for multiple opportunities for discussion of tobacco use and the opportunity to provide brief interventions aimed at positive health behavior changes. Previous studies have found that tobacco interventions by an oral health care provider can increase the abstinence rate among tobacco users.

Tobacco dependence education (TDE) requires knowledge related to tobacco use and knowledge of motivational techniques aimed at facilitating positive health behavior changes. Studies have found that health professionals who received TDE training as part of their formal education are more likely to provide TDE to their patients. Dental schools have made progress in incorporating TDE into their curricula, but there are still concerns that there may not be enough time spent on ensuring that students are adequately prepared to confidently provide TDE to patients. This lack of adequate training and the absence of financial incentives have been reported to be barriers to the provision of TDE by dentists and dental hygienists. Another study suggested that an additional barrier to providing TDE is a lack of perceived cultural competence by oral health professionals. Lo and Tan emphasized the importance of enhancing the education of oral health care providers to include cultural competence to help students acquire an understanding of how to communicate effectively with patients from diverse cultural backgrounds.

In 2013, Statistics Canada reported that 19.3% of Canadians smoked, with smoking rates varying in the Canadian provinces from a high of 59% in Nunavut to a low of 16.2% in British Columbia. In 2006, a survey of the aboriginal peoples in Canada found that 59% of on-reserve First Nations peoples and 58% of Inuit peoples in the north were current smokers. A recent study reported that 24.9% of aboriginal youth living off-reserve were current smokers compared to 10.4% of non-aboriginal youth. There are unique challenges surrounding tobacco use education in First Nations and Inuit communities in Canada. Challenges include understanding the use of tobacco from both socioeconomic and historical contexts and developing educational strategies that take these factors into account. An increase in cultural competence involving these two specific populations may help to address these challenges. Therefore, every effort should be made to incorporate cultural competence regarding the First Nation and Inuit populations into TDE training.

The aim of this pilot study was to determine the effect of incorporating a cultural competence educational component for specific populations (in this case, First Nations and Inuit peoples) into the dental hygiene TDE curriculum at Dalhousie University School of Dental Hygiene, Halifax, Nova Scotia, Canada. TDE is part of the curriculum in the first year of the diploma in dental hygiene program. In 2008, the school adopted a TDE curriculum that consisted of modules developed in the United States. Although those modules contained statistics related to smoking rates for American Indians and Alaska Natives, they did not contain strategies specific to the provision of TDE to these two populations. In 2011, this TDE curriculum was revised to include Canadian and Canadian Aboriginal specific content. This study evaluated the effect of this curriculum change on the students’ perceptions of their cultural competence regarding these populations.

### Methods

The study received approval from the Health Sciences Research Ethics Board at Dalhousie University (REB file # 44976). This pilot study was a quasi-experimental, non-equivalent control design. When the TDE curriculum was revised to include Canadian and Canadian Aboriginal-specific content, seven TDE PowerPoint modules were developed that included Canadian-specific statistics on tobacco use rates, forms of use, sales, health costs, regulations, pharmacotherapies, and tobacco cessation programs and services available in this country. Content also included tobacco history, forms of tobacco, effects of tobacco, help for tobacco users, pharmacotherapies, Canadian Aboriginals and to—
bacco use, and implementation of TDE in the office setting. The module specific to the Canadian Aboriginal population contained historical and present-day perspectives on the culture and tobacco use patterns of First Nations and Inuit peoples in Canada. It also included specific strategies for addressing tobacco use in these populations.

A survey was developed to assess the effect of the revised curriculum on students’ perceived knowledge of Canadian Aboriginals and their perceived preparedness to provide TDE to these populations. The survey, which was adapted with permission from the Clinical Cultural Competency Questionnaire (CCCQ),23 consisted of 34 questions organized into four subscales: knowledge (5 questions); skills in dealing with sociocultural issues (7 questions); comfort level in cross-cultural encounters (5 questions); and attitudes and self-awareness relative to identity, stereotypes, biases, and prejudices (16 questions), along with an additional question on previous cultural diversity training (Table 1).

The paper survey was administered to all members of two cohorts of dental hygiene students at the beginning of their second year of the two-year diploma of dental hygiene program. The first cohort (N=32; referred to as Year 1) had received the old version of the TDE curriculum that did not include the Canadian content or the Aboriginal-specific content. The second cohort (N=30; referred to as Year 2) had received the new TDE curriculum that included the Canadian-specific content and the Canadian Aboriginal peoples module. The students received the TDE curriculum in January of their first year in the hygiene program, and the survey was administered to them the following October. The survey was voluntary and anonymous.

Subscale and survey total scores were compared for the two cohorts using the independent samples Mann-Whitney U test. Responses to individual questions by the two cohorts were compared using chi-square test. The significance level was set at 0.05 for all analyses.

**Results**

The response rate was 56% for the first cohort (Year 1; 18 respondents out of a possible 32) and 63% for the second cohort (Year 2; 19 respondents out of a possible 30). The total cultural competence score was higher for the cohort who had received the revised TDE curriculum compared to the cohort who had not (mean 107±16 vs. 92±23, out of a maximum score of 170) (p=0.04), indicating an overall improvement in cultural competence.

Analysis of the survey subscales revealed that although all four subscale scores (knowledge, skills, comfort, and attitudes) were higher for the Year 2 cohort, only the knowledge subscale showed a statistically significant improvement (mean 14±4 vs. 9±3, out of a maximum score of 25) (p<0.01) (Figure 1). Further analysis of the knowledge subscale revealed significant improvements in students’ perceived knowledge of the sociocultural characteristics, health risks, and cultural healing traditions of First Nations and Inuit peoples (p<0.05) (Figure 2).

**Discussion**

The purpose of this study was to evaluate the effectiveness of revising the TDE curriculum in the School of Dental Hygiene, Dalhousie University, to include Canadian content and a cultural component specific to First Nations and Inuit peoples. The results of the study showed a higher total cultural competence score for the students who received the new TDE curriculum. However, the knowledge subscale of the survey was the only subscale that showed statistically significant improvement.

The subscales did not improve significantly for skills in dealing with sociocultural issues; comfort in dealing with cross-cultural encounters; and attitude and self-awareness relative to identity, stereotypes, biases, and prejudices. This result suggests that although the students’ knowledge of the cultural aspects of First Nations and Inuit peoples had increased, it did not significantly affect their perceived ability to communicate in a culturally sensitive manner with these populations.

It is possible that the new modules were simply not effective. Another possible partial explanation for this result could be related to the timing of the survey. At the time of the survey (early in the students’ second year), the students had had limited experience with treating patients in general and little to no experience in treating First Nations and Inuit patients. Therefore, they may not have felt prepared for patient treatment in general, irrespective of cultural considerations. It is possible that an effect of the intervention on the skills and comfort subscales may have been seen if the survey had been administered at the end of the students’ second year when their experience with patients is more extensive.
Studies assessing various methods of including cultural competence in health education curricula emphasize the need for students to be provided with opportunities to provide care to patients from culturally diverse backgrounds.²⁴⁻²⁶ At the Dalhousie University School of Dental Hygiene, a small number of students have the opportunity to treat these populations through an externship initiative. However, due to budget restrictions, the number is limited to five or six each year. Ideally, all students should be offered this opportunity.

Table 1. Selected questions on survey

A. Knowledge
How knowledgeable are you about each of the following?

1. Demographics of First Nations and Inuit peoples
2. Sociocultural characteristics of First Nations and Inuit peoples
3. Health risks experienced by First Nations and Inuit peoples
4. Cultural healing traditions
5. Historical and contemporary impact of racism, bias, prejudice, and discrimination in health care experienced by First Nations and Inuit peoples

B. Skills
How skilled are you in dealing with sociocultural issues with First Nations and Inuit peoples in these areas of patient care?

1. Greeting patients in a culturally sensitive manner
2. Eliciting information about the use of folk remedies and/or other alternative healing modalities
3. Negotiating culturally sensitive patient education and counseling
4. Assessing health literacy
5. Dealing with cross-cultural adherence/compliance to desirable health behaviors
6. Dealing with cross-cultural ethical conflicts

C. Encounters
How comfortable do you feel in dealing with the following cross-cultural encounters with First Nations or Inuit patients?

1. Treating First Nations and Inuit patients
2. Identifying beliefs that are not expressed by a patient but might interfere with the treatment plan
3. Being attentive to nonverbal cues or the use of culturally specific gestures that might have different meanings than you expect
4. Interpreting distinctive cultural expressions of pain, distress, and suffering
5. Advising a patient to change behaviors or practices related to cultural beliefs that impair one's health

D. Attitudes
1. How important are each of the following factors in contributing to health disparities?
   a. genetics
   b. lifestyle
   c. environment
   d. poverty
   e. educational status
   f. illiteracy
   g. ageism
   h. sexism
   i. racism
   j. classism
   k. ableism
   l. homophobia
2. How aware are you of your own:
   a. Racial, ethnic, or cultural identity?
   b. Racial, ethnic, or cultural stereotypes?
   c. Biases and prejudices?

Note: Additional questions asked students how important they feel it is for health professionals to receive training in cultural competence and how much education and training they had previously experienced regarding cultural diversity in First Nations and Inuit peoples.

specific populations and a specific component of patient care: tobacco dependence education. Finally, since the survey was conducted with two separate groups of students, other factors than the intervention that may have influenced the differences in results remain unknown.

The internal validity of the study is limited in that it did not use a randomized design. The generalizability is constrained by the small sample size of students, all drawn from within one dental hygiene program. The intervention itself was very specific in that it focused on cultural competence for two

**Figure 1. Cultural competence subscale scores before (Year 1; n=18) and after (Year 2; n=19) implementation of revised tobacco dependence education curriculum**

*Note:* Maximum possible subscale scores were knowledge 25, skills 35, comfort 25, and attitudes 80.
*Significant difference using Mann-Whitney U test (p<0.01)*

**Figure 2. Responses on individual cultural competence knowledge subscale questions before (Year 1; n=18) and after (Year 2; n=19) implementation of the revised tobacco dependence curriculum**

*Note:* The question stem was “How knowledgeable are you about each of the following regarding First Nations and Inuit peoples?”
*Significant difference using chi-square analysis (p<0.05)*
Conclusion

This study found that implementing a tobacco dependence education curriculum with a cultural competence component specific to First Nations and Inuit peoples increased the dental hygiene students’ cultural competence knowledge. Further refinement to the curriculum to include practical experience in treating patients from these backgrounds, as well as redesign of the modules, may be needed to impact students’ cultural competence skills and comfort in working with these populations. Future evaluations of the curriculum should be timed to occur after students have acquired more experience treating patients. To help guide dental hygienists in providing care to patients from various cultures, cultural competence training for populations other than First Nations and Inuit peoples is also recommended.

Acknowledgments

This research was funded by a seed grant from the Canadian Action Network for the Advancement and Adoption of Practice-Informed Tobacco Treatment (CAN-ADAPTT).

REFERENCES