Critical Issues in Dental Education

An Assessment of Cross-Cultural Education in U.S. Dental Schools


Abstract: The purpose of this study was to assess the status of cross-cultural education in U.S. dental schools and to identify characteristics associated with having a formal cross-cultural curriculum. An eighteen-item survey, which included questions about curricular format, teaching and evaluation methods, time, and course content, was sent to all U.S. dental schools. Comparisons were made using whether or not institutions had formal cross-cultural curricula. Forty-five of fifty-six schools responded. Twenty-nine schools reported having formal cross-cultural curricula in a separate course and/or integrated with other courses with specific goals and objectives. Schools that have formal cross-cultural curricula had higher scores on depth of curricula and spent more time than schools that reported having informal curricula (p=0.03). Competing curricular time and lack of faculty expertise were the most frequently cited impeding factors for inclusion of cross-cultural issues (87.8 percent and 68.3 percent, respectively), while diverse patient population and leadership commitment were the most frequently cited facilitating factors (92.5 percent and 67.5 percent, respectively). There is wide variation among dental schools regarding how they teach these issues and how students are evaluated. Dental schools lack guidance about how to best incorporate this curricular content.

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Key words: culture, dental curriculum, dental school, race, ethnicity, survey

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The U.S. population is becoming increasingly diverse. In recent years, Hispanic and minority racial groups—non-Hispanic blacks, Asians, and American Indians—have each grown faster than the population as a whole. Minorities have increased from 16 to 27 percent of the population from 1970 to 1998, with some trend analysis indicating that these groups will account for almost half of the country’s population by 2050.1 Although such projections are not necessarily precise, they do predict that racial and ethnic diversity will grow substantially. There has been growing evidence that disparities in health care occur among certain populations in the United States.2,3 Oral Health in America: A Report of the Surgeon General documented profound and consequential disparities in the oral health of vulnerable populations.3 These disparities are evident in compromised oral health status among minorities and limited access to dental care for these populations. Ethnic minorities have several potential barriers to obtaining dental care including culture, age, language, and socioeconomic limitations.2,4 One cannot get to the root of disparities in health care without understanding the critical role that culture plays in health and disease. Eliminating disparities requires that we go beyond financial barriers and pay attention to social and cultural determinants of health.

Cultural competence has been emphasized recently as an important component of the health care process. The ongoing process of cultural competency can be viewed as a set of academic and interpersonal skills that allows individuals to increase their understanding and appreciation of cultural differences and similarities.5 Many strategies for dealing with cultural issues emphasize the role of education because cultural competence is widely recognized as a learned process.6 Many professional and educational organizations have realized the importance of cultural competence, resulting in efforts in medicine, nursing, and other health-related fields to include cultural competence in their curricula and continuing education.7-10
Studies have been conducted to evaluate the effect of different educational interventions on the attainment of cultural competence. A systematic review by Beech et al. synthesized the findings of studies evaluating interventions to improve the cultural competence of health professionals. Beech et al. found evidence that cultural competence training improves the knowledge of health professionals (seventeen of nineteen studies demonstrated a beneficial effect on provider knowledge) and found evidence that cultural competence training improves the attitudes and skills of health professionals (twenty-one of twenty-five demonstrated a beneficial attitudinal effect, one study showed no effect, and three studies showed a partial/mixed effect). Of the fourteen studies that evaluated skills only, all demonstrated a beneficial effect. Results of measuring the intermediate outcomes of knowledge, skills, and attitude of providers also have been encouraging.

Dental educators realize the importance of providing students with the skills and tools to assist them in becoming more culturally competent as evidenced by the accreditation standard established by the Commission on Dental Accreditation that states: “Graduates must be competent in managing a diverse patient population and have the interpersonal and communication skills to function successfully in a multicultural work environment.” Dental schools are left to determine the methods by which to achieve this standard. The format and extent to which dental schools incorporate cross-cultural education in the curriculum is not documented in the literature. Thus, little is known about the curricular content, teaching methods, or outcomes evaluation for cultural competency.

Since 1992, there have been four North American surveys concerning the incorporation of cross-cultural issues in medical schools. In addition, a literature search identified and described programs that teach cultural diversity issues to undergraduate medical students in the United Kingdom, United States, and Australia. Cross-cultural education in medical specialty training programs also has been described. One research team concluded that the medical field needs to move from descriptive studies towards more rigorous evaluation of effects of cross-cultural education on clinician behavior and patient care outcomes. Dentistry, however, still needs descriptive information before it can proceed with further evaluation and research. There are limited data concerning cultural competency in the curriculum of U.S. dental schools.

Acknowledging the importance of including cross-cultural education for future dentists, and in the absence of formal, uniform consensus on how this should be done in health care professions, baseline information on how cross-cultural issues are addressed in dental schools is needed. The aims of our study were thus to assess the current status of cross-cultural education; identify whether there is a relationship between several general institutional characteristics (e.g., percentage of students, faculty, and patients who are from a minority racial group) and whether the school addressed cross-cultural issues; and explore the content, teaching methods, and evaluation methods for teaching cross-cultural issues at U.S. dental schools. While culture goes beyond race and ethnicity to include socioeconomic status, religion, gender, sexual orientation, occupation, disability, etc., our research focused on the race and ethnicity components of culture.

**Methods**

This research was a descriptive, cross-sectional study of the status of cross-cultural education in U.S. predoctoral dental schools. The original eighteen-item survey instrument was divided into four major sections: 1) questions about racial/ethnic percentages of dental students, faculty, and patients visiting the dental school clinic; 2) how faculty members address cross-cultural issues at their schools (years in curriculum, methods of teaching and evaluation, clock hours devoted to cross-cultural issues, extent to which certain topics are addressed, and why the respondents thought cross-cultural issues were or were not addressed in their schools); 3) extramural or outreach programs; and 4) a free-response question for additional comments. (The survey appears as an appendix.) Some response options are based on the existing literature. Findings concerning extramural programs are not included in this article. Three University of Iowa faculty members and an ADEA staff member revised draft copies of the survey for its content and clarity. Although this survey was exempt because it does not collect personal or “human” information, a copy was filed with the University of Iowa Institutional Review Board office.

For this study “formal cross-cultural curriculum” is operationally defined as a dental school that reported addressing cross-cultural issues in a separate, independent course and/or integrated with other
courses with specific goals, objectives, and methods of evaluation. Conversely, “absence of formal cross-cultural curricula” is defined as schools responding that cross-cultural issues are either not addressed at all or are integrated with other courses without specific goals and objectives.

Schools were categorized as either public or private, and each was placed into one of four regional geographic areas (Northeast, South, Central, and West). Time devoted to cross-cultural issues was divided into six categories: <5, 5-10, 11-20, 21-30, 31-40, and >40 clock hours. Percentages of each racial/ethnic category collected by the U.S. Bureau of the Census were requested for students, patients, and faculty. A new variable was created that summed all of the minority racial/ethnic categories for each of the three groups.

Each school was asked to identify when (D1-D4) cross-cultural issues were addressed in its curriculum. Responses were also grouped into preclinical years (first two years) or clinical years (last two years). Teaching and evaluation methods were selected based on the most frequently cited methods in the literature, with “other” provided to allow schools the opportunity to explain any other method they use. Schools were asked to rank order the top three facilitating and impeding factors to why (or why not) cross-cultural issues were addressed.

The extent of the cross-cultural education within the school’s curriculum was measured on a 4-point scale (0=not addressed at all, 1=minimally addressed, 2=moderately addressed, 3=extensively addressed) for the following seven content areas: definitions and concepts of culture, diversity, ethnicity, and cultural competence; oral health cultural belief models and practices; access issues; oral health disparities; communication and interviewing skills; issues related to Limited English Proficiency (LEP); and awareness and respect of culturally different groups. The maximum possible total score was 21.

Content areas were further divided into knowledge (i.e., definitions and concepts of culture, diversity, ethnicity, and cultural competence; oral health cultural belief models and practices; access issues; and oral health disparities) and topics that focus on skills and attitude (i.e., communication and interviewing skills; issues related to LEP; and awareness and respect of culturally different groups). The maximum score for knowledge was 12, whereas the maximum for skills and attitude was 9.

In November 2004, one author (YC) sent an introductory email stating the purpose of the study and encouraging participation to the dean of academic affairs or equivalent at all U.S. dental schools. A hard copy of the cover letter, which reiterated the purpose of the study and encouraged the academic deans to share the survey with appropriate faculty and staff, was mailed along with the survey and a stamped return envelope. Fourteen schools responded to the initial mailing. A second mailing to non-respondents was sent after one month. Telephone calls were made to each school that didn’t respond, reminding them of the survey and encouraging their participation. Schools that could not be reached by telephone were contacted by email. By March 2005, thirty-one additional surveys were returned for an overall total of forty-five responses.

Data were entered into an Excel file and exported to SAS version 9.1 for data analysis. Wilcoxon rank sum test, a nonparametric test for data that are not normally distributed, was performed to find the relation between the dependent variable and minority percentages and clock hours. Chi-square statistic or Fisher’s exact test was used for comparisons with categorical data. Statistical significance was set at $p<0.05$.

One-way analysis of variance was used to compare the mean scores of the variables “total content,” “focus on knowledge,” and “focus on skills and attitude” by the format of cross-cultural course (i.e., a separate course, integrated with specific objectives, or integrated without specific objectives). Substantive and statistically significant variables were entered into a logistic regression model that compared those with and without a formal cross-cultural curriculum that included race/ethnicity.

**Results**

Forty-five dental schools (80.4 percent) returned the survey. The percentage of minority students ranged from 4 to 100 percent, with a mean value of 36.1 percent (S.D. 22.4 percent) and a median of 33 percent. The percentage of minority faculty ranged from 4 to 100 percent, with a mean of 25.8 percent (S.D. 19 percent) and a median of 20 percent. The percentage of minority patients ranged from 30 to 100 percent, with a mean of 56.2 percent (S.D. 14.9 percent) and a median of 55 percent. However, ten schools indicated that statistical information concerning patients’ race or ethnicity was not collected, and thus they did not respond to these questions about student, faculty, and patient ethnicity.
Twenty-eight public and seventeen private schools returned the survey. The geographic distribution of the respondents was: Northeast, nine; South, sixteen; Central, ten; and West, ten. Four schools indicated that cross-cultural issues were not addressed at all. While ten schools addressed cross-cultural issues in a separate independent course, four schools reported that this was the only way they addressed cross-cultural issues. Twenty-five schools (55.6 percent of the respondents) indicated that cross-cultural issues were integrated within other courses with specific goals, objectives, and evaluation methods pertinent to the topic, while nineteen schools addressed cross-cultural issues integrated within other courses but without specific goals and objectives related to the topic. Twelve of these nineteen schools reported that this was the only way they addressed cross-cultural issues. These twelve schools, in addition to the four schools that responded they don’t address cross-cultural issues at all, were operationally defined as not having a formal cross-cultural curriculum. The remaining twenty-nine schools, which addressed cross-cultural issues in a separate course or integrated with other courses with specific goals and objectives, were defined as having a formal cross-cultural curriculum.

Of the forty-one schools that reported some type of formal or informal cultural competency instruction, thirty-four addressed cross-cultural issues in the D1 year. This number decreased with each subsequent year (D2, thirty-one schools; D3, twenty-eight schools; and D4, twenty-two schools). Only 39 percent of responding schools said that they addressed cross-cultural issues in all four years. While eleven schools reported that they did not address cross-cultural issues at all, were operationally defined as not having a formal cross-cultural curriculum. Of the forty-one schools, which addressed cross-cultural issues in a separate course or integrated with other courses with specific goals and objectives, were defined as having a formal cross-cultural curriculum.

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Of the thirty-eight institutions that responded to the question of how extensively they addressed each of the seven topic areas, three schools scored the maximum (21), which means that they reported addressing each of the seven areas extensively. Con-

The most frequently reported teaching method was lecture/seminar (n=39, 95.1 percent), and the most frequently reported method for student evaluation was through written exams (n=26, 63.4 percent) (Tables 1-2). While seven schools (17.1 percent) reported using lecture/seminar format as their only method for teaching cross-cultural education, thirty-two schools (78.1 percent) used multiple educational methods in addressing cross-cultural issues.

Although nineteen institutions used multiple student evaluation methods, thirteen schools used only one form of evaluation. Additionally, nine schools (21.9 percent) that had cross-cultural content did not use any form of student evaluation. Although a written exam was the most frequently cited method of evaluation, none of the schools reported using it as the only method (Table 2).

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| Table 1. Methods of teaching cross-cultural issues at U.S. dental schools (n=41) |
|------------------------------------------|----------|
| Methods of Teaching                     | n (%)    |
| Lectures/seminars                      | 39 (95.1%)|
| Case studies                           | 24 (58.5%)|
| Small group discussions                | 23 (58.5%)|
| Presentation by community members      | 14 (34.2%)|
| Problem-based learning                 | 12 (29.3%)|
| Roleplay exercises                     | 12 (29.3%)|
| Other                                  | 5 (12.2%) |
| Lectures/seminars ONLY                 | 7 (17.1%) |
| Multiple educational methods            | 32 (78.1%)|

| Table 2. Methods of student evaluation on cross-cultural education at U.S. dental schools (n=41) |
|------------------------------------------|----------|
| Methods of Evaluation                    | n (%)    |
| Written exams                            | 26 (63.4%)|
| Direct observation                       | 18 (43.9%)|
| Reflective journal                      | 10 (24.4%)|
| No form of evaluation                    | 9 (21.9%) |
| Oral presentations                       | 8 (19.5%) |
| OSCE                                    | 8 (19.5%) |
| Other                                   | 6 (14.6%) |
| Written exams ONLY                      | 0         |
| Multiple evaluation methods              | 19 (46.3%)|
| Any one method of evaluation ONLY       | 13 (31.7%)|

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versely, three schools scored less than 10. Most topics were reported to be moderately addressed. Among the knowledge topics, “culturally different health belief models” was the least to be addressed extensively, with only eight schools reporting that this topic was extensively addressed. Among skills and attitude topics, Limited English Proficiency (LEP) was the topic addressed in the least depth; only seven schools reported they addressed LEP extensively (Figure 1).

Diverse patient population was the most frequently reported reason for including cross-cultural issues in the curriculum (n=37 of 41), followed by leadership commitment (n=27) and faculty expertise/interest (n=18) (Figure 2a). Nineteen schools (46.3 percent) reported diverse patient population as

![Image](https://via.placeholder.com/150)

**Figure 1.** Distribution of responses to how extensively each area is addressed in dental schools’ cross-cultural curricula (n=38)
its most important reason for inclusion, while thirteen schools selected leadership commitment as the most important reason. Leadership commitment refers to administrative faculty and staff who provide guidance and support for this issue and who inculcate it into the fabric of the institution.

Conversely, competing curricular time (n=36) was among the three most frequently cited reasons for not devoting more time to cross-cultural issues, followed by lack of faculty expertise and limited financial resources (Figure 2b). Competing curricular time was reported by thirty-two schools (76.2 percent) as the primary reason for not devoting more time to cross-cultural education. Four schools reported lack of faculty expertise as the primary reason for not addressing cross-cultural issues, and three schools reported leadership commitment.

Faculty expertise made the top three lists as both a facilitating and impeding factor for addressing cross-cultural issues at dental schools. Schools reported financial resources (i.e., grants) as the least important reason to include cross-cultural issues in the curriculum, yet it was reported by schools as the second most important reason for not devoting more time for teaching cross-cultural issues.

Table 3 summarizes the relationship of several variables to schools having formal cross-cultural curricula. There was no statistically significant difference in the proportion of schools that have formal cross-cultural curricula by the percentage of minority designation of their students, patients, or faculty. However, there was a statistically significant relationship between student minority percentage and faculty minority percentage (r=0.73, p<0.0001), indicating a strong positive correlation between these two groups. There were no statistically significant differences in the proportion of schools having formal cross-cultural curricula by either location, type of school, or total score on content areas. However, the number of clock hours devoted to cross-cultural issues in the curriculum was statistically significant (p=0.02).

Table 4 shows mean value for summative scores of total content, focus on knowledge, and focus on skills areas compared by the way cross-cultural issues are addressed at dental schools (i.e., whether in a separate course, integrated with specific goals and objectives, or integrated without specific goals and objectives). Schools that addressed cross-cultural issues in a separate independent course had a higher mean value for all scores (total, skills, and knowledge), which were 19.7, 8.3, and 11.3, respectively. When group means were compared in relation to the total score on content areas, addressing cross-cultural issues in a separate course was found to have a significantly higher total score (p=0.04, one way ANOVA) than either category in which cross-cultural information is integrated within another course (with or without specific goals and objectives). On the other hand, schools that address cross-cultural issues integrated with other courses but without having specific goals and objectives had a lower mean score on all three types of content score (total: 11.4, knowledge: 6.6, skills: 4.8). This latter group had a significantly lower summative knowledge score than the other two groups (p=0.01).

While there were no statistically significant differences for whether an institution did or did not have a formal cross-cultural curriculum based on the percentage of minority students, patients, or faculty, the students’ variable was included in the logistic regression model. Clock hours was statistically associated with having a formal cross-cultural curriculum in the final model, which suggests that schools devoting more time to addressing cross-cultural issues are more likely to have it addressed in a formal way (OR=2.1 [1.07-4.20]; p=0.03). This means that schools were 2.1 times as likely to have formal cross-cultural curricula for each level of the clock hours, holding the variable “minority students’ percentage” constant (OR=1.03 [0.98-1.08]; p=0.17).

Discussion

With the rapid influx of immigrants and change in demographics, coupled with the slow change in diversity of dental graduates, there is a need to educate the available workforce to better address the needs of this diverse society. While cultural competence is a continuum, dental schools might be the first and only place where students are made aware of cultural issues and trained to better serve patients. Dental students have perceived the importance of diversity exposure and training. Having a culturally diverse environment at dental schools could influence students’ perceived abilities in working with diverse populations. Hence, the importance of recruiting and retaining underrepresented minority students has been emphasized by the American Dental Education Association. Increasing the percentage of minority dentists is believed to be one method to reduce barriers to access to care. However, the preponderance of minority patients will still be seen by the white majority of
a. Top three reasons reported by schools as facilitating factors for having cross-cultural education at their schools (n=40)

b. Top three reasons reported by schools as impeding factors for having cross-cultural education at their schools (n=41)

Figure 2. Facilitating and impeding factors reported by schools for inclusion of cross-cultural issues
dentists in the near future; thus, it is essential to prepare those dentists to be culturally competent.

This study showed that more schools reported having a formal cross-cultural curriculum (twenty-nine) than those that did not (sixteen). However, similar to medical schools, there is a lack of uniformity among dental schools concerning teaching and evaluation methods. Efforts should now focus on developing research-based, explicit standards that specifically guide dental schools to effective approaches to teach cross-cultural issues. While there is no single “right” way to teach cross-cultural issues, the literature provides some guidance (e.g., Culturally and Linguistically Appropriate Services [CLAS] standards, Institute of Medicine report, and American Medical Student Association [AMSA] project). Using guidelines from other health professions that appear to be more advanced than the dental profession in cross-cultural competency education, formal, detailed curricular standards can be tailored for dental education. Collaboration and exchanging expertise with other health field professions are of paramount importance at this stage. In the absence of standardized dental curricular guidelines, modifying and adapting other health care professions’ proposals could be a step toward developing formal dental guidelines.

There is no clear guidance about when cultural issues should be best addressed in the curriculum. Some have proposed that, since cultural competence is a continuous process, it should be taught throughout all years of training. Others have suggested that it is vital that students learn about cultural competence early in their professional education. Most of the responding schools (71 percent) report that cross-cultural issues are addressed during at least one of the preclinical years and again during one of the clinical years. This would seem to ensure that students have opportunities to apply the knowledge and skills learned in their preclinical years in dental school. This structure would also provide the faculty with opportunities to evaluate students’ learning over time.

The extent of teaching specific topics in the dental curricula also seemed to be affected by the format of how cross-cultural issues were addressed in the curricula. Schools that addressed cross-cul-

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Number</th>
<th>Number That Responded Having Cross-Cultural Curricula</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of minority students (mean=35.6%)</td>
<td>44</td>
<td>-</td>
<td>0.60*</td>
</tr>
<tr>
<td>Percentage of minority patients (mean=56.2%)</td>
<td>35</td>
<td>-</td>
<td>0.89*</td>
</tr>
<tr>
<td>Percentage of minority faculty (mean=25.7%)</td>
<td>44</td>
<td>-</td>
<td>0.77*</td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northwest</td>
<td>9</td>
<td>6</td>
<td>0.56†</td>
</tr>
<tr>
<td>South</td>
<td>16</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>10</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>10</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public</td>
<td>28</td>
<td>19</td>
<td>0.75†</td>
</tr>
<tr>
<td>Private</td>
<td>17</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Clock hours devoted to cross-cultural issues</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>&lt;5 hrs</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5-10 hrs</td>
<td>10</td>
<td>7</td>
<td>0.02*</td>
</tr>
<tr>
<td>11-20 hrs</td>
<td>13</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>21-30 hrs</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>31-40 hrs</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>&gt;40 hrs</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Total score on content areas (depth of curricula)</td>
<td>38</td>
<td>-</td>
<td>0.07*</td>
</tr>
</tbody>
</table>

*Wilcoxon rank sum test
†Fisher’s exact test
cultural issues in a separate course had significantly higher scores on all content areas (i.e., addressed these topics more extensively) than schools that had them integrated with other courses. Schools integrating cross-cultural issues with other courses but have specific cross-cultural goals and objectives also had higher mean scores than schools that integrate them with no specific objectives in the curricula. This suggests that schools that had implemented a formal approach to teaching cross-cultural issues were more likely to address these topics in detail. The study also showed a positive correlation between the clock hour time devoted to cross-cultural issues and the extent schools taught these topics. This result is expected since presumably dental schools would not be increasing clock hours without addressing the topic in more depth. The study showed a statistically significant difference between schools having formal cross-cultural curriculum and those that don’t by the number of clock hours devoted to it. Consequently, formal format or approach—whether in a separate course or integrated—seems to predict that cross-cultural issues will be addressed in depth.

Dental schools seem to be similar to medical schools in addressing language issues in that the topic is not addressed in depth in the curricula. Limited English proficiency is an emerging health field concern and will require more attention.

Having a diverse patient population was the most frequently reported reason for addressing cross-cultural issues. It appears that dental schools are aware of the needs of their patient population and are trying to respond to some of those needs by inclusion of cross-cultural education in their curricula.

The most frequently cited challenge against inclusion of cross-cultural curriculum was that there is not enough time in an already crowded curriculum. Others have acknowledged that dental curricula are overburdened and that it would be a challenge to add cross-cultural education. Dental school administrators will need to make some difficult decisions in establishing curricular priorities. Without committed leadership, which was one of the top three reasons for including cross-cultural issues in the curriculum, cross-cultural education will not go beyond the stage of “talk the talk.”

Financial resources may be an impediment to initiate curricular activities for cross-cultural training. However, schools funded through the Robert Wood Johnson Foundation pipeline grant not only have removed this obstacle, but they have specifically promoted inclusion of cross-cultural issues in their curricula. Although financial resources were the least reported reason for inclusion of cross-cultural issues among the choices offered in the survey, it was one of the top three reported reasons for not devoting more time to these issues. Policymakers need to consider incentives if they are to advocate for more cross-cultural education at dental schools.

Faculty expertise/interest was the only commonly listed item among the top three factors for both facilitating and impeding factors. This is an important indicator of the need for experts and trained faculty in cultural competence so that they can incorporate appropriate information in didactic and other clinical educational situations. Dental schools could overcome this challenge by arranging for faculty workshops,

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**Table 4. Mean (P-value) for reported sum of scores of schools on content areas of cross-cultural education by how cross-cultural issues are addressed in the curricula (n=31)**

<table>
<thead>
<tr>
<th>Addressed in a separate, independent course (n=4)</th>
<th>Total Mean Content Score (P-value)</th>
<th>Total Mean Knowledge Score (P-value)</th>
<th>Total Mean Skills Score (P-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19.7 (0.04)</td>
<td>11.3 (0.34)</td>
<td>8.3 (0.25)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Integrated with other course with specific goals and objectives (n=15)</th>
<th>Total Mean Content Score (P-value)</th>
<th>Total Mean Knowledge Score (P-value)</th>
<th>Total Mean Skills Score (P-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.7 (0.72)</td>
<td>7.4 (0.18)</td>
<td>5.3 (0.19)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Integrated with other course without specific goals and objectives (n=12)</th>
<th>Total Mean Content Score (P-value)</th>
<th>Total Mean Knowledge Score (P-value)</th>
<th>Total Mean Skills Score (P-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11.4 (0.67)</td>
<td>6.6 (0.01)</td>
<td>4.8 (0.25)</td>
</tr>
</tbody>
</table>

One Way Analysis of Variance
seminars, and conferences and by acknowledging its importance in promotion and tenure. Cross-cultural expertise can be supported by encouraging faculty development in this field. Examples of successful programs should be shared with other institutions.

The goal of cross-cultural education is to provide students with the knowledge, skills, and attitudes that will help them to communicate and provide care to their patients. There is little documentation regarding the most effective educational interventions. Currently, educational interventions have been shown to increase people’s knowledge and skills, but there is a dearth of published evidence that links specific interventions to any patient outcomes. Curricular guidelines need to be established that are based on scientific research. A set of core competencies for cross-cultural education should be developed so that schools can work toward common goals in addressing patients’ needs.

Limitations of these findings include the following: 1) while the response rate to the survey was about 80 percent, the remaining schools may or may not be similar; 2) the accuracy of the responses is uncertain, especially since many faculty may have been involved in its institutional response; 3) the structure of the survey questions may have limited some responses about the content and depth of cross-cultural exposure in their curricula; 4) the operational definitions used and the narrow focus (i.e., race and ethnicity) may underestimate the number of institutions that are providing cross-cultural education about other issues (e.g., socioeconomic, age) not covered in this survey; 5) some institutions do not maintain information about race/ethnicity in their databases; 6) schools were limited to seven content areas that were considered fundamental in any cross-cultural course; 7) using a summative score may unfairly assign equal importance to each of the seven content areas; and 8) the survey did not address the sequencing of the curricular components relating to cultural competence. Moreover, the survey restricted cross-cultural education to “didactic” teaching only, so clinical opportunities for addressing cross-cultural issues are not covered. Most schools reported less than 50 percent of the students, patients, and faculty were a racial/ethnic minority. However, our analysis included all of the responding institutions, regardless of racial/ethnic mix, because of the importance of having information from each institution. Such inclusion, however, did not appear to impact any of the statistically significant findings.

Conclusions and Recommendations

In this, the first known descriptive study of cross-cultural education in U.S. dental schools, a high percentage of schools (80 percent) reported that they address cross-cultural issues formally in their curricula. Seventy-eight percent of surveyed schools use multiple educational methods, and 71 percent of schools address cross-cultural issues during at least one year of preclinical and one year of clinical education. Clearly, most dental schools are making efforts to integrate cross-cultural issues into their curricula. However, the variation in teaching and evaluation methods used, the format of the curricula, and the extent or depth of curricular content all imply the need for more uniform guidelines.

The variable of clock hours was a significant predictor for having formal cross-cultural curricula. It was also significantly correlated with the extent/depth of the content of the curricula. Schools that address cross-cultural issues formally tend to spend more time and have depth in their curricula on cross-cultural issues.

Based on the findings reported here and our experience with implementing a cross-cultural curriculum, we believe the following activities are likely to help foster future dentists who are culturally more aware to provide care for a diverse patient population:

• schools should continue efforts to recruit minority students and faculty to provide a culturally diverse environment for students and provide a workforce that is representative of the diverse population;

• dental schools should collaborate with other health professions schools to develop similar curricular competency objectives and methods;

• schools that are developing new teaching and evaluation methods should share their information;

• a curriculum task force should be created from committed leaders to develop guidelines or principles to address cross-cultural issues;

• schools should reassess their curricular priorities and find ways to incorporate cross-cultural issues formally (whether in a separate course or integrated) and address barriers to inclusion; and

• research that explores strategies for effectively teaching cross-cultural issues should be encouraged.
REFERENCES


Cross-Cultural Education in U.S. Dental Schools Survey

1. Give the approximate percentage of predoctoral students from the following racial/ethnic groups in your dental school:

   _______ Caucasian/European descent
   _______ African-American
   _______ Hispanic/Latino
   _______ Asian
   _______ American Indian
   _______ Other

   100%

2. Give the approximate percentage of patients visiting the school clinic facilities from the following racial/ethnic groups:

   _______ Caucasian/European descent
   _______ African-American
   _______ Hispanic/Latino
   _______ Asian
   _______ American Indian
   _______ Other

   100%

3. Give the approximate percentage of faculty present at your dental school from the following racial/ethnic groups:

   _______ Caucasian/European descent
   _______ African-American
   _______ Hispanic/Latino
   _______ Asian
   _______ American Indian
   _______ Other

   100%

4. How are cross-cultural issues addressed didactically at your school?
   Check all that apply:
   - [ ] Addressed in a separate, independent course
   - [x] Integrated with other course(s), with specific goals, objectives, and evaluation
   - [ ] Addressed with other course(s), without specific goals, objectives, and evaluation
   - [ ] Not part of the curriculum (skip to question 12)

5. During which year(s) are cross-cultural issues addressed?
   Check all that apply:
   - [ ] 1st year
   - [ ] 3rd year
   - [ ] 2nd year
   - [ ] 4th year

6. What are the methods of teaching cross-cultural issues in your school?
   Check all that apply:
   - [ ] Didactic (lectures/seminars)
   - [ ] Case studies
   - [ ] Problem-based learning
   - [ ] Roleplay exercises
   - [ ] Presentations by community members
   - [ ] Other: ____________________________
   - [ ] Small group discussions

7. How are students evaluated for cross-cultural content in the curriculum?
   Check all that apply:
   - [ ] Written exams (multiple choice, pretest-posttest, etc.)
   - [ ] Direct observation of students’ skills and attitudes
   - [ ] Oral presentation
   - [ ] Other: ____________________________
   - [ ] Objective Structured Clinical Examinations (OSCEs)/standardized patient assessment
   - [ ] No specific form of evaluation is done.
   - [ ] Reflective journal
8. Relative to other schools, how well does your school address the following issues:
   Use a scale from 0-3:
   0=not addressed at all     2=moderately addressed
   1=minimally addressed      3=extensively addressed
   
   □ Definitions and/or concepts of culture, diversity, ethnicity, and cultural competency
   □ Concepts of culturally different health beliefs models
   □ Access issues
   □ Oral health disparities
   □ Communication and interviewing skills of culturally different populations
   □ Issues related to limited English proficiency of patients
   □ Awareness and respect of culturally different groups

9. Overall, how much time (i.e., clock hours) do you think is spent didactically on addressing cross-cultural issues at your school?

   □ Less than five hours
   □ From 5-10 hours
   □ From 11-20 hours
   □ From 21-30 hours
   □ From 31-40 hours
   □ More than 40 hours

10. What do you think are the three most important reasons why you address cross-cultural issues at your school?

   (1=most important, 2=second most important, 3=third most important)

   □ Financial resources (i.e., grants, contracts, etc.)
   □ Leadership commitment
   □ Students’ interest/request about this subject
   □ A diverse patient population
   □ Faculty expertise/interest
   □ Other: __________________________________________

11. What do you think are the three most important reasons why your school doesn’t devote more time to cross-cultural issues?

   (1=most important, 2=second most important, 3=third most important)

   □ Competing curricular time
   □ Limited financial resources
   □ Lack of leadership commitment/interest
   □ Lack of students’ interest
   □ Lack of patients’ diversity
   □ Lack of faculty expertise/interest
   □ Other: __________________________________________

Questions 12 through 16 relate to outreach or extramural programs (service learning)

12. In what type of community outreach/extramural programs do your students participate? Check all that apply:

   □ Public health clinics
   □ Hospital clinics
   □ Community health centers
   □ Private dental offices
   □ Mobile units
   □ Other: __________________________________________

   □ Institution does not have such a program (go to question 17)

13. How much time is spent by students in extramural/outreach programs? Please record the appropriate number in one of the two boxes below:

   □ weeks    or    □ days

14. Is cultural awareness/sensitivity one of the stated objectives for the extramural/outreach programs?

   □ Yes     □ No
APPENDIX (continued)

15. Prior to participation,

a. how are students provided information about the community’s oral health needs?
   - □ Handouts, containing needs assessment
   - □ Lecture/presentation at dental school/site by instructor
   - □ Presentation from community member
   - □ Other ________________________________
   - □ None

b. how are students provided information about the cultural background of the targeted community?
   - □ Handouts containing demographic information
   - □ Lecture/presentation by instructor
   - □ Presentation from community member
   - □ Other ________________________________
   - □ None

16. How are students evaluated on providing culturally sensitive care during their extramural/outreach experience?
   - □ Pretest-posttest questions
   - □ Reflective journals of students
   - □ Observation by onsite faculty/director
   - □ Feedback from site director
   - □ Other ________________________________
   - □ No specific form of evaluation is done.

17. During the past five years, has teaching cross-cultural issues at your school:
   - □ Increased?         □ Decreased?         □ Remained the same?

18. Please feel free to provide additional comments about how your institution is addressing cross-cultural issues.

__________________________________________________________________________________________________________________________ ...
__________________________________________________________________________________________________________________________ ...
________________________________________________________________________________________________________________________________________________________________________________________

Thank you for completing the survey. Please return it in the self-addressed envelope.

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