Perceived Influence of Community Oral Health Curriculum on Graduates’ Dental Practice Choice and Volunteerism


Abstract: The purpose of this study was to determine if A.T. Still University Arizona School of Dentistry and Oral Health (ASDOH) curricular content regarding community oral health has influenced graduates’ dental practice choice and volunteering activities in their communities. At ASDOH, the community oral health curriculum consists of three components: 1) coursework in public health resulting in a certificate or master’s degree in public health; 2) service-learning activities in the Dentistry in the Community series of course modules, wherein students plan and implement community projects; and 3) community-based clinical rotations of approximately ninety-five days during the fourth year. To accomplish the purposes of the study, a survey was sent to ASDOH alumni who graduated between 2007 and 2010. Of the 208 graduates contacted, ninety-four responded (45.2 percent). Of those who responded, 85 percent reported that the community oral health curriculum influenced their practice choice, and 76 percent reported that they volunteer. Additionally, 58 percent of the respondents reported that the amount of dental school debt they had incurred affected their career plans and professional decision making.

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Keywords: dental education, curriculum, service-learning, community-based dental education, dental career, underserved populations, external rotations, clinical rotations, community dentistry, volunteering

Submitted for publication 7/26/11; accepted 3/12/12
curriculum. In sum, the school needed to “make a radical shift away from the traditional dental school structure toward a new innovative approach that would serve the needs of all population groups, with a specific emphasis on underserved and under-represented populations.” In making this shift from the traditional model, the ASDOH leadership sought to implement innovative educational concepts and infuse community oral health throughout the curriculum. Examples of these curricular innovations include a modular basic sciences curriculum offered in the first year and a requirement of five online public health courses delivered through the ATSU School of Health Management.

Additionally, the ASDOH curriculum utilizes service-learning as a mode of education through its Dentistry in the Community series of course modules. Yoder noted that integrating service-learning into the dental curriculum educates students about the challenges, needs, and values of a particular community. The Dentistry in the Community series includes a module offered in the fall semester of the second year in which students develop a dental public health plan. In creating this plan, students must select a community partner, work with that partner to delineate their needs, and develop a realistic plan to be implemented and evaluated over the course of three subsequent semesters (throughout the second and third years).

Most significantly, ASDOH fourth-year students spend half of their clinical experience (approximately ninety-five days) at over sixty community-based clinics in Arizona and throughout the country and half at the on-site ASDOH dental clinic in Mesa. At the community-based sites, students are immersed in the community and into the real-life workings of a community health center, Indian Health Service clinic, rural health clinic, migrant health clinic, and/or Federally Qualified Health Center. Such innovative changes to the traditional dental school curriculum are intended to help ASDOH meet key tenets of its mission statement: by better preparing the student for serving those in need and to be leaders in their communities.

According to the ASDOH senior survey, which students complete just prior to graduation, approximately 30 percent of graduates of the first four graduating classes (2007-10) not going into a residency program intended to work with underserved patients. Therefore, the purpose of this study was to explore what happened after graduation by assessing graduates’ perceptions of the ASDOH Community Oral Health Curriculum, their dental practice choice, and volunteer activity.

### Methods

The method used to conduct this research was a cross-sectional descriptive study utilizing a survey. The target population was the 215 graduates in 2007-2010: fifty-three in 2007, fifty-four in 2008, fifty-three in 2009, and fifty-five in 2010. No living graduates were excluded from the survey. One posthumous degree was granted in 2009 but was not counted in the number of graduates. Of the 215, seven graduates had no known contact information, resulting in a total of 208 graduates surveyed. This study was approved by the A.T. Still University Institutional Review Board.

A twenty-nine item Zoomerang survey (www.zoomerang.com/) was developed. Likert scale items, multiple-choice items, and open-ended items were used. Many of the survey items were used in or derived from previous surveys/studies, including the ATSU alumni survey. Prior to the survey becoming operational, a letter was sent to all graduates alerting them to an e-mail they would receive with the survey link and encouraging them to respond to the survey. The window for completion of the survey was January 10-31, 2011, and weekly follow-up e-mails were sent to those who had not yet responded. All mail and e-mail addresses were secured from ATSU Alumni Services. Data were entered and analyzed with the Statistical Package for the Social Sciences (SPSS), version 18.0 for Windows. Descriptive statistics such as means, standard deviations, frequencies, and percentages were reported for all variables.

### Results

Of the 208 graduates contacted, ninety-four completed the survey for a response rate of 45.2 percent. Of the respondents, 48.9 percent were female and 46.8 percent were male. This is consistent with the known target population of ASDOH graduates based on ATSU admissions data (46.5 percent female and 53.5 percent male). Of the ninety-four respondents, ninety-one responded to the race/ethnicity question: 76.6 percent identified their race/ethnicity as Caucasian; 12.8 percent Asian; 5.3 percent Hispanic or Latino; and 2.1 percent American Indian or Alaska Native. These data are also consistent with
the known population of graduates based on ATSU admissions data: 64 percent Caucasian, 12 percent Asian, 6 percent Hispanic or Latino, and 5.6 percent American Indian or Alaska Native.

Not surprisingly for such a recently graduated group, the majority of the respondents (53.2 percent) had been in practice for less than two years, and 6.4 percent had never practiced dentistry. Over 90 percent of the respondents were between the ages of twenty-four and thirty-nine. Also important to note is that 72 percent of the respondents reported that before entering dental school, one of their professional objectives was to practice dentistry with underserved populations or in an underserved area. Additionally, 58 percent reported that the amount of debt incurred affected their career plans and professional decision making.

The survey also asked graduates to describe their current practice setting(s), previous practice settings, and any secondary practice settings. Respondents could choose more than one setting for each of these items. Of those who responded, 55.3 percent said they currently work or have worked in a public health setting, including employment as a salaried employee at a hospital, military base, Indian Health Service clinic, health department (state, county, or city), community health center, rural health clinic, migrant health clinic, Federally Qualified Health Center, National Health Service Corps site, civilian employee of the federal government, U.S. Public Health Corps, U.S. Commission Corps, or federal agency (e.g., National Institutes of Health). Also, 50 percent (thirteen) of the students entering AS-DOH with no intention of practicing dentistry with underserved populations did go on to work in public health settings although it cannot be concluded that the Community Oral Health Curriculum influenced their decision.

Influence on Practice Choice

The Community Oral Health Curriculum was defined in the survey as consisting of three components: 1) coursework in public health resulting in a certificate or master’s degree in public health; 2) Dentistry in the Community (service-learning) curriculum in which students plan and implement community projects; and 3) community-based clinical rotations during the fourth year in which students spend approximately ninety-five days (half of their clinical experience) in the fourth year. Eighty-five percent of the respondents agreed or strongly agreed that the Community Oral Health Curriculum influenced their dental practice choice(s) (Figure 1).
Sixty-eight (72 percent) respondents reported having an interest in working with the underserved before they entered dental school. Among these, twenty-nine (42.6 percent) have not yet worked in a public health setting. Conversely, of the twenty-six students who entered dental school with no interest in working with the underserved, thirteen (50 percent) have worked or are working with the underserved. While this is encouraging, we cannot assume a positive or negative influence of the Community Oral Health Curriculum on practice choice. Other factors such as timing of residency, family obligations, and debt may have influenced the decision to work with underserved populations; however, those factors were not studied.

In rating each of the three Community Oral Health Curriculum components individually, 54 percent of the respondents agreed or strongly agreed that the public health coursework helped prepare them for their career in dentistry. Also, 65 percent agreed or strongly agreed that the Dentistry in the Community projects prepared them for their career in dentistry, and 98 percent agreed or strongly agreed that the fourth-year external clinical rotations prepared them for a career in dentistry (Figure 2).

**Volunteerism**

Of the ninety-four respondents, seventy-one (76 percent) reported that they volunteer. Of those who volunteer, 49 percent volunteer up to four hours a month; 32 percent volunteer from five to nine hours a month; 10 percent volunteer from ten to fourteen hours a month; and 10 percent volunteer fifteen hours a month. Types of settings in which graduates volunteer were free and reduced-fee dental clinics (42 percent), K-12 schools (41 percent), health fairs (39 percent), pro bono work (32 percent), and nonprofit or not-for-profit organizations (24 percent).

Finally, graduates were asked to respond to this statement: “I volunteer my services to underserved patients.” Of those who responded, 67 percent said that they agree or strongly agree with the statement; 21 percent neither agreed nor disagreed; and 10 percent disagreed or strongly disagreed.

**Discussion**

In our study of the perceived influence the ASDOH Community Oral Health Curriculum has had on practice choice of graduates, 85 percent of the respondents agreed or strongly agreed that the curriculum influenced their dental practice choice. To determine the specific factors that influence graduates’ practice choice, we will more closely examine the three components of the curriculum in future studies.

With regard to students’ exposure to public health theory, it is important for students to have
foundational knowledge in public health prior to being exposed to related opportunities in the community. Connelly stresses the need for those working in the public health realm to truly understand the underlying causes of public health issues, such as poverty and injustice, so that these causes can be determined rather than just continuing to treat the symptoms. Appropriate education and varied opportunities must be provided that will allow students to become socially aware, culturally sensitive, and public health-minded health care providers who are committed to the oral health needs of the public.

The data gathered in this study suggest that service-learning during the dental school years affects dentists’ practice patterns. According to Hood, the three main goals of service-learning are to improve learning for the student, to promote giving back to the community, and to make communities stronger. Additionally, service-learning positively affects the student, the academic institution, and society. When students are actively involved in the community, they are better able to understand vulnerable populations and become more aware of their needs. This knowledge/awareness oftentimes provides students with the motivation to become a change agent through their practice and committed to improving the lives of those in need.

The 2008 Macy Study supported the need to look at new educational models that would include service-learning. Yoder also suggests that the predoctoral dental curriculum integrate service-learning as it helps students better understand the relationship between a particular community and oral health. Future research could examine the types of service-learning that are most effective for educating dental students and how it prepares them for the communities they serve.

According to a survey conducted in 2002-03, two-thirds of U.S. and Canadian dental schools’ curricula included some form of community-based clinical experience, with the average amount of time students spent at such clinics being approximately eleven to fifteen days. An evaluation of the Pipeline, Profession, and Practice: Community-Based Dental Education program reported that spending sixteen or thirty-nine days in community rotations had not seemed to cause any change in the practice plans of senior dental students at schools involved in that program. Since the ASDOH fourth-year students spend approximately ninety-five days in community-based clinics, perhaps the increased number of days created the impact of this part of the public health curriculum on their practice plans. More research on the effects of community-based clinic rotations is needed.

The purpose of the volunteerism question in the survey was to determine if recent graduates were giving back to their communities by volunteering. While 76 percent of the respondents reported they have volunteered since leaving dental school, this study cannot determine if their dental experience influenced that volunteer rate. In view of the fact that ASDOH prefers applicants to have at least 100 hours of community service before considering them for an interview, the student population may already have a tendency towards altruistic behavior.

A limitation of this study is that the results were based solely on ASDOH graduates’ perceptions and recollection with no basis for comparison with other groups of graduates. Additionally, some of the graduates took their public health coursework more than five years ago, and their recall of what influenced them may not be accurate. A larger sample size would also have been desirable. Furthermore, the results do not distinguish between graduates employed in a public health setting and those working in a public health setting as a part of a residency program. Finally, it is important to note that 58 percent of the respondents felt that the amount of debt they had incurred affected their career plans and professional decision making. No questions were asked, however, regarding whether the debt or the Community Oral Health Curriculum had the most influence. Therefore, it cannot be determined that the amount of debt caused graduates to enter private practice for the promise of potential income, nor can it be determined that debt caused graduates to seek employment in a public health facility for loan repayment benefits.

To expand the value of the research reported in this article, the self-reported information in our study lends itself to further research. Comparison with a dental school using a different model for community oral health education would provide important information, as would a longitudinal study of ASDOH graduates to see if graduates’ perceptions change over time.

Conclusions

While most U.S. dental schools prepare dentists primarily for the traditional private practice model, academic dental institutions should also focus on educating a workforce that serves a broader population in order to benefit those who receive care in
public health settings. To this end, varied models of educating dentists must be adopted. The A.T. Still University Arizona School of Dentistry and Oral Health has answered the call for educational reform by adopting an innovative curriculum that exposes its students to underserved populations and settings, embraces the principles of public health, and implements those principles through service-learning and in community-based clinics. This study found that the school’s graduates perceived that the community oral health curriculum had influenced their dental practice choice and thus contributes to the growing body of scholarship on the effects of community-based dental education.

REFERENCES