

# Recruitment of Dental Hygiene Students from Underrepresented Minority Groups: A National Survey of U.S. Dental Hygiene Programs

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**Abstract:** The aims of this study were to assess how U.S. undergraduate dental hygiene programs recruit students, especially students from underrepresented minority (URM) groups, and how the program directors value recruiting those students, how satisfied they are with their efforts, which practices they use, and which challenges they encounter. Relationships between diversity-related recruitment motivation and satisfaction and the program and recruitment characteristics were also explored. Survey data were collected from 56 of the 287 programs that could be successfully contacted with individual emails to their directors (response rate: 20%). The majority of responding programs recruited students into their programs by using written materials (91%), websites (91%), on-campus events (77%), and high school visits (52%). However, only 20% had written materials and 13% special events for recruiting students from URM groups. While 75% of the responding program directors considered high grade point averages (GPAs) to be a priority and 85% thought high GPAs were important/very important when recruiting students, only 17% considered it a priority to recruit URM students, and only 35% reported thinking it was important/very important to do so. The more of a priority it was to have a diverse student body and the more important the respondents considered it, the more likely they were to have written URM-specific recruitment materials ( $r=0.34$ ;  $p<0.05$ / $r=0.39$ ;  $p<0.01$ ). The more the respondents valued ACT scores, the less likely they were to engage in URM-specific recruitment efforts ( $r=-0.38$ ;  $p<0.05$ / $r=-0.34$ ;  $p<0.05$ ). If the dental hygiene profession is to better reflect the racial/ethnic makeup of the U.S. population, dental hygiene programs' considerations and efforts related to the recruitment of URM students need to be reconsidered.

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In 2000, the first U.S. surgeon general's report on oral health drew attention to the fact that certain segments of the population suffer from disproportionate amounts of oral disease and face problems when trying to access oral health care services.<sup>1</sup> Patients from underrepresented minority (URM) groups were especially vulnerable to these problems. Increasing the numbers of dental care providers from URM groups is one way to increase access to care for these patients because URM health care professionals have provided significantly more services for poor and minority patients than non-minority providers.<sup>2-11</sup> However, a decade ago, the Sullivan

report, *Missing Persons: Minorities in the Health Professions*, noted that individuals from URM groups were clearly underrepresented among both students in health professions schools and health care providers.<sup>5</sup>

In U.S. dental hygiene programs, the underrepresentation of URM students has been well documented over the past decades. Dhir et al. found in their 1998 survey of dental hygiene programs that only 10.5% of students were members of ethnic/racial minorities.<sup>12</sup> When Woolfolk and Price provided an overview of the percentages of black, Hispanic, American Indian, Asian, and white dental hygiene students for academic years 2000-01 to 2009-10, they

reported that the percentage of black students ranged from 3.7% to 4.4% in that ten-year period and the percentage of Hispanic students from 5.7% to 7.7%.<sup>13</sup> The American Dental Association (ADA) 2010-11 Survey of Allied Dental Education found that only 13.7% of enrolled dental hygiene students were from underrepresented racial and ethnic groups, although these groups represented 29.8% of the U.S. population.<sup>14</sup> This underrepresentation of dental hygiene students is paralleled by small numbers of dental hygiene faculty members from URM groups.<sup>14,15</sup> In 2004, Nunn et al. reported that 92% of the dental hygiene faculty at the 188 programs they surveyed were white.<sup>15</sup> Given these statistics concerning dental hygiene students and faculty members, it is not surprising that members of URM groups are also clearly underrepresented among practicing dental hygienists,<sup>4</sup> which results in a lack of role models for potential URM students.<sup>16</sup>

Dental schools have made major efforts over the past decades to increase the number of dental students from URM groups.<sup>2,17-19</sup> The Commission on Dental Accreditation (CODA) standards for dental schools even require these schools to take steps to make their environments more diverse.<sup>20</sup> However, no research so far has explored whether dental hygiene programs also engage in specific diversity-related recruitment efforts. While CODA standards for dental hygiene programs do not require these programs to have a diverse community of students, staff, and faculty members,<sup>21</sup> there are significant educational benefits for dental hygiene programs when they have increased numbers of URM students.<sup>10</sup> For example, research has shown that being educated in a diverse setting increased students' cultural competence—which ultimately results in more culturally sensitive patient care.<sup>7,12,22,23</sup>

In consideration of the low percentages of URM students in U.S. dental hygiene programs, one central question of interest concerns what efforts these programs make concerning the recruitment of URM students. The aims of this study therefore were to assess how U.S. dental hygiene programs recruit students, especially students from URM groups, and how these program directors value recruiting students from URM groups, how satisfied they are with their efforts, which practices they use, and which challenges they encounter. In addition, the relationships between diversity-related recruitment motivation and satisfaction and program and recruitment characteristics were explored.

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## Methods

This study was determined to be exempt from Institutional Review Board oversight by the Institutional Review Board for the Behavioral and Health Sciences at the University of Michigan (HUM#00088723) on May 5, 2014. An a priori power analysis was conducted with the G3.1.3 Power Analysis Program ([www.psych.uni-duesseldorf.de/abteilungen/aap/gpower3/](http://www.psych.uni-duesseldorf.de/abteilungen/aap/gpower3/)). Given that correlations between the priority-, importance-, and satisfaction-related responses and the program- and recruitment-related characteristics were of interest, the a priori power analysis was used to determine the needed number of subjects when using a t-test to test for the significance of a correlation with a two-sided hypothesis, an alpha error probability of 0.05, a relatively medium to large effect size of  $|\rho|=0.40$ , and a power of 0.80. The results showed that a sample size of 44 respondents was required.

A survey was developed and pilot tested with ten dental hygienists in the state of Michigan. After receiving feedback from these pilot subjects, a final version of the survey was developed. Individual personalized recruitment emails were then sent to the directors of all 335 undergraduate dental hygiene programs in the United States. Of these, 48 emails could not be delivered, resulting in 287 successfully contacted programs. Program directors responded to the recruitment email by connecting through the web link provided to a web-based anonymous survey. No follow-up emails were sent because it was unclear which programs had responded to the original emails.

The survey consisted of four parts. Part 1 asked for information about program and student characteristics, and Part 2 contained questions concerning the programs' recruitment efforts in general and their specific efforts related to recruiting URM students. Part 3 asked seven questions concerning to what degree it is a priority for the program directors to recruit undergraduate dental hygiene students with various characteristics such as high ACT/SAT scores, high grade point averages, professional experiences, family background in the health care field, high involvement with community service, and being from diverse backgrounds and underrepresented minority groups. In addition, this third part asked 15 questions concerning how important and how satisfied the program directors were with recruiting students with these same seven characteristics as well as eight other diversity-related characteristics. All answers to

the priority, importance, and satisfaction questions were given on a five-point scale, with 1 as the lowest response and 5 as the highest.

Part 4 of the survey consisted of four open-ended questions that asked respondents to describe the biggest challenges they encountered and the most effective practices they used when recruiting students in general and students from URM groups specifically into their programs. These questions were as follows: “Which are your biggest challenges concerning recruiting students into your program in general?”; “Which are your biggest challenges concerning recruiting diverse students, such as from underrepresented minority groups or from socioeconomically disadvantaged backgrounds, into your program?”; “Which practices for recruiting students into your program in general do you find most effective?”; and “Which practices for recruiting students from diverse groups or backgrounds do you find most effective?”

The data were downloaded from the website as an Excel file and imported into SPSS (Version 22). Descriptive statistics such as frequency distributions, percentages, means, and standard deviations were computed to provide an overview of the responses. Inferential statistics were used to test whether relationships between variables were significant. The answers to the open-ended questions in Part 4 were

transcribed and independently coded by two of the three authors. Any discrepancies were discussed and resolved. A  $p < 0.05$  was accepted as the level of significance.

## Results

Data were collected from 56 of the 287 dental hygiene programs that could be successfully contacted with individual emails to their program directors (response rate: 20%). Table 1 provides an overview of the respondents’ program and student characteristics. Most programs were part of a community or junior college (54%), a university or four-year college (20%), or a dental school (11%). Of these programs, 75% granted an associate degree, 29% a baccalaureate degree, 11% a master’s degree, and 5% a diploma/certificate (respondents could select all that applied). While all programs were undergraduate dental hygiene programs, 31% also had a degree completion program and 11% a graduate program. However, it was made very clear in the survey instructions that only recruitment efforts related to the undergraduate program were to be considered in the directors’ responses. The lengths of the programs ranged from 13 to 40 months, with an average of 22 months.

The number of applicants to these programs ranged from five to 450 in a typical year. The num-

**Table 1. Participating U.S. dental hygiene program directors’ program and student characteristics (N=56)**

Program Characteristic	Number	Percentage	Student Characteristic	Mean	SD (Range)
Educational setting			Number of applicants for undergraduate program in a typical year	97	76.08 (5-450)
School of allied health sciences	2	4%	Number of graduates from undergraduate program in a typical year	23	9.20 (10-48)
Dental school	6	11%	Number of students in undergraduate class by characteristic		
Separate dental department	0	0	Male	1	0.89 (0-4)
University or four-year college	11	20%	Socioeconomically disadvantaged	7	7.49 (0-30)
Community or junior college	30	54%	African American	1	1.97 (0-12)
Technical college	4	7%	American Indian	0	0.73 (0-4)
Other	1	2%	Asian American	2	2.77 (0-18)
Type of degree <sup>†</sup>			Hispanic/Latina/o	3	2.44 (0-10)
Diploma/certificate	3	5%			
Associate degree	42	75%			
Baccalaureate degree	16	29%			
Master’s degree	6	11%			
Type of program <sup>†</sup>					
Undergraduate	56	100%			
Graduate	6	11%			
Degree completion	17	31%			
Length of program in months	Mean= 22.36	D= 5.24 S(13-40)			

<sup>†</sup>Respondents could choose all that applied.

ber of graduates ranged from ten to 48 in a typical year, with an average number of 23. Of these 23 graduates, seven students on average were from a socioeconomically disadvantaged background, three were Hispanic/Latina/o, two were Asian American, one was African American, and none were American Indian.

The responses concerning recruitment efforts showed that 43% of the responding programs had a designated recruiter of students (Table 2). As the recruiter, 25% of the programs had a dental hygienist,

9% an admissions program staff member, 5% recruitment staff, and only one program had a dentist and a psychologist recruit students. Additional persons who supported recruitment efforts were faculty members (reported by 41% of the programs), program administrators (20%), students (18%), high school advisors (14%), and recruitment staff members from outside of their unit (5%).

When asked how they recruited students into their programs, 91% of the respondents indicated they had written materials and websites, while 25%

**Table 2. Participants' responses concerning student recruitment efforts (N=56)**

Aspect of Recruitment	Number	Percentage	Aspect of Recruitment	Number	Percentage
<b>Professional background of designated recruiter</b>			<b>How do you decide on which high schools?</b>		
No designated recruiter	32	57%	Invitation	15	27%
Dental hygienist	14	25%	High school fairs	7	13%
Admissions program staff	5	9%	Partnership with school	5	9%
Recruitment staff	3	5%	Recruiter	2	4%
Dentist/psychologist	1/1	2%/2%	Admissions	1	2%
<b>Other persons who recruit</b>			No high school focus	1	2%
No other persons	16	30%	Visit from high school	1	2%
Faculty	23	41%	<b>Other outreach events:</b>		
Program administrators	11	20%	Yes	26	46%
Students	10	18%	<b>Recruitment events on campus:</b>		
High school advisors	8	14%	Yes	43	77%
Recruitment staff	3	5%	<b>Outreach events organized by other academic units:</b>		
<b>Recruit with</b>			Yes	38	68%
Written materials	51	91%	<b>Number of events in average year</b> Mean=3 Range=0-11		
Website	51	91%	<b>Other efforts</b>		
Facebook page	14	25%	Information session/fairs/events	6	11%
<b>Number of copies of written materials</b> Mean=338 Range=0 to 3,000			Community	2	4%
<b>Written materials distributed to</b>			Conferences	2	4%
Prospective students	27	48%	High school program/summer camp	2	4%
Colleges/college fairs	10	18%	Prospective students	2	4%
High schools	8	14%	Advisory board	1	2%
Admissions/advisers	2	4%	Internet	1	2%
Alumni/dental hygienists	1/1	2%/2%	Professional association	1	2%
Dental program department	1	2%	<b>Recruitment events specifically for URM students?</b>		
Events	1	2%	Yes	7	13%
Friends of program	1	2%	<b>Types of events specifically for URM student recruitment</b>		
Sites throughout community	1	2%	Campus day	1	2%
<b>Do written/digital materials focus on URM students?</b>			Faculty advisers	1	2%
Yes	11	20%	Interprofessional event	1	2%
Add pictures of URM students	6	11%	No diversity	1	2%
Information sessions	1	2%	Minorities are present	1	2%
Post packet online	1	2%	Reach broad geographic/demographic area	1	2%
School location	1	2%	<b>Sufficient funds for recruitment efforts?</b>		
Target males	1	2%	Yes	28	56%
<b>High school recruitment visits: Yes</b> 29 52%					
<b>If yes: number of high schools</b> Mean=3 Range=0-35					



had a Facebook page. The numbers of printed copies of the written materials ranged extremely widely, from some programs not having any written materials to one program printing 3,000 copies of written materials. On average, 338 copies were printed of written recruitment materials. Written materials were most likely to be distributed to prospective students (reported by 48% of the programs), at college visits or college fairs (18%), and in high schools (14%). When asked if their programs had written materials that focused on URM students, 11 program directors reported having such materials. In response to a follow-up question inquiring how they designed URM-specific written material, six of the 11 program directors reported having added pictures of URM students.

Among the responding programs, 52% reported making high school recruitment visits. Most of these high school visits were by invitation from the schools (27%) or to high school fairs (13%). Although only 9% had a partnership with a specific high school, 46% had other additional outreach efforts, 77% participated in recruitment events in the school and on their own campus, and 68% were present at events organized by other academic units. The number of recruitment events in an average year ranged from zero to 11, with an average of three. Two programs described that they had a high school program/summer camp, met prospective students at information sessions, fairs, and other events, and used the Internet for recruitment efforts. Only seven schools reported having specific recruitment events for URM students (13%); specific efforts at these URM student recruitment events were to have minorities present, to have faculty advisors there, and to participate in

interprofessional events. Among the total respondents, 56% indicated that they had sufficient funds for recruitment.

When asked how much of a priority it is for their program to recruit undergraduate dental hygiene students with various characteristics, 75% of the respondents indicated that high GPAs were the high or highest priority and 37% that high ACT/SAT scores were the high or highest priority for them (Table 3). Regarding diversity, 19% of the respondents considered it a high or highest priority to have students from diverse backgrounds in their programs and 17% to have students from URM groups among their students.

Table 4 provides an overview about how important the program directors thought certain student characteristics would be during the recruitment process and how satisfied they were with recruiting students with those characteristics. Concerning the importance ratings, high GPAs were of great importance for 85% of the program directors. On the other hand, having a family background in the health professions was considered least important, with 89% of the respondents indicating that this characteristic was not at all/not very important. Concerning diversity-related responses, 35% of the respondents considered it as important/very important to recruit students from URM groups, 32% to recruit African American students, and 29% to recruit Hispanic/Latina/o students.

The satisfaction ratings showed that 78% of the responding program directors were satisfied/very satisfied with how they recruited students with high GPAs into their programs. On average, the program directors had neutral to positive satisfaction ratings

**Table 3. Dental hygiene program directors' priority ratings of applicant characteristics, by percentage of total respondents to each item (N=56)**

Priority Characteristic	1	2	3	4	5	Mean (SD)
High ACT/SAT scores	46%	11%	7%	32%	5%	2.39 (1.45)
High grade point averages	14%	2%	9%	34%	41%	3.86 (1.36)
Professional experiences in dental office	28%	26%	28%	12%	7%	2.44 (1.22)
Family background in the health professions	75%	21%	2%	2%	0%	1.32 (0.64)
High involvement with community service <sup>†</sup>	32%	16%	25%	21%	7%	2.55 (1.32)
Diverse backgrounds <sup>†</sup>	32%	18%	32%	14%	5%	2.41 (1.21)
Underrepresented minority groups <sup>†</sup>	33%	19%	33%	12%	5%	2.37 (1.20)
Average diversity-related priorities <sup>‡</sup> (alpha=0.851)						2.47 (1.09)

Note: Survey item was worded: "It is a priority to recruit undergraduate dental hygiene students with/from" followed by the list of characteristics. Responses ranged from 1=no priority at all to 5=highest priority. Percentages may not total 100% due to rounding.

<sup>†</sup>Diversity-related question

<sup>‡</sup>The average diversity-related priority score was computed by averaging the responses to the three diversity-related questions.

**Table 4. Dental hygiene program directors' perceived importance of and satisfaction with students' characteristics in recruitment process, by percentage of total respondents to each item (N=56)**

Students' Characteristic	Importance Rating				Satisfaction Rating			
	1/2	3	4/5	Mean	1/2	3	4/5	Mean
High ACT/SAT scores	40%/9%	13%	21%/17%	2.66	10%/4%	18%	39%/29%	3.71
High grade point averages	2%/4%	9%	36%/49%	4.26	2%/6%	14%	47%/31%	4.00
Professional experiences in dental offices	25%/28%	32%	11%/4%	2.42	2%/4%	33%	31%/29%	3.82
Family background in the health professions	66%/23%	8%	4%/0	1.49	6%/4%	36%	26%/28%	3.66
High involvement with community service <sup>†</sup>	19%/15%	23%	34%/9%	3.00	2%/8%	33%	31%/26%	3.71
Diverse background <sup>‡</sup>	21%/6%	39%	27%/8%	2.94	2%/20%	28%	28%/24%	3.51
Underrepresented minority groups <sup>‡</sup>	19%/10%	37%	25%/10%	2.96	4%/26%	24%	24%/24%	3.37
Male students <sup>‡</sup>	17%/6%	47%	21%/9%	3.00	4%/28%	26%	22%/22%	3.29
Socioeconomically disadvantaged students <sup>‡</sup>	17%/6%	49%	25%/4%	2.92	6%/22%	31%	16%/26%	3.33
African American students <sup>‡</sup>	19%/11%	38%	26%/6%	2.89	4%/24%	33%	18%/22%	3.29
American Indian students <sup>‡</sup>	21%/14%	35%	25%/6%	2.81	8%/22%	33%	20%/18%	3.18
Asian American students <sup>‡</sup>	21%/10%	39%	25%/6%	2.85	4%/20%	29%	20%/28%	3.47
European American students <sup>‡</sup>	25%/8%	42%	21%/6%	2.75	2%/12%	33%	27%/27%	3.63
Hispanic/Latina/o students <sup>‡</sup>	19%/12%	40%	23%/6%	2.85	4%/16%	35%	20%/26%	3.47
International students <sup>‡</sup>	31%/21%	31%	14%/4%	2.38	6%/10%	44%	13%/27%	3.44
Diversity-related index <sup>‡</sup> (alpha=0.974/alpha=0.968)				2.91				3.53

Note: Survey item was worded: "How important is it to recruit/How satisfied are you with recruiting students with/from" followed by the list of characteristics. Responses ranged from 1=not at all to 5=very. Percentages may not total 100% due to rounding.

<sup>†</sup>Diversity-related question

<sup>‡</sup>The diversity-related importance index was computed by averaging the responses to the single importance items. The diversity-related satisfaction index was computed by averaging the responses to the single satisfaction items.

concerning their efforts to recruit students from diverse backgrounds or groups. The lowest average satisfaction was with the recruitment of American Indian students.

In addition to the closed-ended questions, open-ended questions inquired what the programs' biggest challenges were when recruiting students in general and specifically when recruiting URM students. Time, cost, and a lack of qualified students were the three most frequently named challenges, both when recruiting students in general and when recruiting students from URM groups (Table 5). A lack of jobs, a lack of funds, the program's location, and a lack of student interest were cited as other challenges. Four of the programs indicated that they had no active recruitment of students from diverse groups or backgrounds.

When asked about their most effective practices when recruiting in general, word of mouth advertising was reported by seven programs, followed by having staff available to answer questions and inquiries from interested students, attending career fairs, and talking one-on-one with students (Table 5). Concerning most effective practices for recruiting students from URM groups, two programs reported word of mouth, two attending career fairs and talk-

ing one-on-one, and two having special information sessions. The reputation of the program was also mentioned twice.

Table 6 provides an overview of the relationships between the program directors' priorities, their importance and satisfaction ratings, and their program characteristics such as number of applicants overall, number of graduates in an average year, and program length in months. The results showed that having ACT scores as a priority was positively correlated with number of applicants ( $r=0.41$ ;  $p<0.01$ ). Higher numbers of applicants were also positively correlated with higher importance ratings of ACT/SAT scores ( $r=0.29$ ;  $p<0.05$ ) and GPAs ( $r=0.27$ ;  $p<0.05$ ). However, the number of graduates in an average year and the length of the program did not correlate with any of the priority, importance, or satisfaction ratings. While the percentages of URM students among the graduates in an average year were not correlated with priority and importance ratings, they were correlated with the satisfaction index concerning having URM students among their graduates. Concerning the relationships between special efforts to recruit URM students and the program directors' priority, importance, and satisfaction ratings, the more the respondents made it a priority to have a

**Table 5. Open-ended question responses from dental hygiene program directors concerning challenges and most effective practices when recruiting students in general and URM students, by number in each category (N=56)**

	Students in URM		Students in URM	
	General	Students	General	Students
<b>Biggest challenges when recruiting</b>				
Time	13	7		
Cost	12	11		
Lack of qualified students/number of applicants	10	8		
Jobs after	4	1		
Lack of funds	3	1		
Location (rural/Midwest)	3	2		
Recruitment of males	3	0		
Student interest	3	3		
No person to recruit	2	0		
Diverse student background lacking	1	2		
Administration support	1	1		
Diminished applicant pool/few African American students	1	1		
Experience	1	1		
Informing students	1	1		
Communication	1	0		
Community support	1	0		
Conservative	1	0		
Evaluation of hand skills/technical ability	1	0		
Expanding recruitment	1	0		
No review of subjective traits	1	0		
Open enrollment	1	0		
Remediation of students	1	0		
Use of faculty	1	0		
No active recruitment of diverse students	0	4		
Retention through prerequisites	0	2		
Lack of dedication	0	1		
Life demands prevent program completion	0	1		
Lack of confidence: students think it is too hard	0	1		
<b>Most effective practices when recruiting</b>				
Word of mouth			7	2
Career fairs/information sessions			6	4
Available staff to answer questions/inquiries			5	0
Talking one on one			5	2
Information on webpage			4	0
High school visits/counseling students early			3	2
Community participation			2	0
Alumni			1	1
Board scores			1	0
Brochures			1	1
Delivering care in diverse areas			1	0
Demonstration of passion			1	0
Employment			1	0
GPA			1	0
Promoting ability of self-support			1	1
Provide high-visibility care			1	0
Put prerequisites into program			1	1
No weekend/night work with benefits			1	1
Reach out to all people			1	0
Reputation			1	2
Science grades			1	0
Shadowing			1	0
Working with university advisors			1	1
Community service			0	1
Diverse faculty/faculty tutoring			0	2
Encouragement at follow-up			0	1
Focus on students from specific area			0	1
Promote high income potential			0	1

diverse student body and the more important it was for them, the more written material they used ( $r=0.34$ ;  $p<0.05$ / $r=0.39$ ;  $p<0.01$ ). However, the higher their importance ratings of ACT scores, the less likely they were to have special events for recruiting URM students ( $r=-0.34$ ;  $p<0.05$ ).

## Discussion

The findings from this survey concerning the low numbers of URM students in the responding dental hygiene programs were consistent with the data reported in previous studies.<sup>12-14</sup> Gaining a better understanding of these recruitment efforts in general

and those related to the recruitment of URM students is therefore of interest. Concerning who is engaged in recruitment efforts, the responses showed that the majority of programs did not have a designated recruiter. When recruiters were designated, they were in the majority of cases dental hygienists or staff members. In addition, faculty members, program administrators, and students participated in the recruitment process. Given the low percentages of faculty members from URM groups,<sup>14,15</sup> it is unlikely to have black or Hispanic recruitment personnel involved in these processes.

When questions focused on how the programs recruit students, the data showed that 91% of the responding programs had written materials and

**Table 6. Correlations between dental hygiene program directors' priority, importance, and satisfaction ratings and program- and recruitment-related characteristics**

	Number of Applicants	Number of Graduates in Average Year	Percentage of URM Graduates	Program Length	Written Material for URM Students <sup>†</sup>	Special Event for URM Students <sup>†</sup>
<b>Priorities</b>						
ACT	0.41**	-0.01	0.11	-0.11	0.06	-0.38*
GPA	0.19	0.10	0.01	0.29	0.02	-0.19
Family	0.12	0.15	-0.04	-0.04	-0.13	-0.22
Professional	-0.06	-0.09	0.05	-0.20	0.05	-0.11
Diversity index <sup>‡</sup>	-0.20	-0.05	-0.00	0.09	0.34*	0.04
<b>Importance</b>						
ACT	0.29*	-0.11	0.03	-0.19	-0.01	-0.34*
GPA	0.27*	0.16	0.08	0.13	-0.10	-0.05
Family	0.07	0.13	-0.06	-0.09	-0.14	-0.17
Professional	-0.06	-0.04	0.08	-0.17	0.10	0.01
Diversity index <sup>‡</sup>	-0.24	-0.05	0.03	-0.13	0.39**	-0.00
<b>Satisfaction</b>						
ACT	0.04	-0.10	0.13	0.05	-0.12	-0.05
GPA	0.07	-0.11	0.02	0.08	0.00	0.12
Family	-0.24	-0.18	0.14	0.08	-0.14	-0.03
Professional	-0.20	-0.19	0.14	-0.03	0.05	0.13
Diversity index <sup>‡</sup>	-0.18	-0.15	0.34*	-0.13	-0.03	0.23

Note: Response options ranged from 1=not at all to 5=very much.

<sup>†</sup>Response options were 0=no and 1=yes.

<sup>‡</sup>The average diversity-related indices were computed by averaging the responses to the diversity-related questions.

\*Statistically significant at p<0.05; \*\*statistically significant at p<0.01

websites. However, only one in five had written materials that focused specifically on recruiting URM students. Given that these efforts mainly consisted of including pictures of URM students in the written materials, it seems unlikely that these materials were specifically focused on students from URM groups. If the text of the written materials had described the need for URM dental hygienists to provide care for underserved groups, such information might have motivated students to consider careers in dental hygiene. While 77% of the responding programs participated in recruitment events on their campuses, 29 programs engaged in high school visits, and 26 in other organized outreach events, only seven programs had specific outreach events for students from URM groups.

Despite this dire situation concerning the low numbers of URM students in dental hygiene programs, only a minority of the program directors considered recruiting students from diverse backgrounds (19%) and from URM groups (17%) a priority. This finding might be related to the fact that while the CODA standards for dental education programs require that the schools make efforts to have a diverse student body, staff, and faculty,<sup>20</sup> we could not find any

similar requirement in the CODA standards for dental hygiene programs.<sup>21</sup> Placing low importance on such efforts might explain the respondents' relatively high satisfaction ratings with their efforts—despite the obvious lack of substantial numbers of students from these groups in the programs. These findings of the low priority given to creating a diverse educational setting and being satisfied with not having a diverse student body deserve attention. They provide a basis to argue for increased faculty and administrator development efforts to ensure that all program administrators become aware of the fact that providers from URM groups are more likely to provide care for underserved populations<sup>2-11</sup> and thus might positively affect the degree to which URM patients are underserved. In addition, such efforts should focus on increasing an understanding of the importance of educating culturally sensitive providers, which is supported by a diverse educational setting.<sup>7,12,23</sup>

While 56% of the program directors in our study reported that they had sufficient funds for recruiting, several respondents indicated that their biggest challenges in general and when recruiting students from URM groups were a lack of time and the costs involved. This finding raises the question



of how recruitment efforts could focus on including practicing dental hygienists in recruitment efforts.<sup>24,25</sup> Involving alumni of dental hygiene programs could potentially be an effective way to increase the number of applicants in general and the number of URM applicants specifically. This suggestion is also supported by the finding that word of mouth and one-on-one recruitment efforts were said to be the most effective recruitment practices for these programs. Considering other practices for the recruitment of URM students such as informing students earlier—for example in high school<sup>25,26</sup>—and engaging high school counselors more actively<sup>25</sup> should definitely happen as well. In addition, the responses of URM dental hygiene students about their decisions to enroll in these programs reported in Sandino and Rowe's study could be quite helpful in developing specific recruitment approaches.<sup>16</sup>

Finally, educating dental hygiene administrators and admissions committee members about holistic approaches to recruiting students might also be crucial to bring about change.<sup>19</sup> The data in our study showed that the more program directors placed a priority on ACT scores and considered them as important, the less they engaged in special events for URM students.

This study had two major limitations. First, the response rate was rather low. This might be another indicator that the program directors who received individualized emails did not consider the topic of recruiting URM students important enough to respond to the survey. However, one might argue that if more programs had responded, the findings might have been even more discouraging. Distributing a survey at the annual meeting of dental hygiene program directors might be one way to achieve a higher response rate. Second, collecting only survey data might not provide an objective picture of actual recruitment efforts. Collecting more objective data such as written materials from programs or information from their websites and content-analyzing that information could provide additional insights into the recruitment efforts. Also, some programs may be able to recruit more URM students because of location or tuition and fees, and our study may not have captured those sorts of distinctions.

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## Conclusion

The numbers of U.S. dental hygiene students from URM groups do not match the percentages of

individuals from these population groups in the United States. However, this study found that recruiting dental hygiene students from diverse backgrounds and from URM groups was not a priority for most of the responding dental hygiene program directors. On the contrary, they were on average satisfied with their efforts. Efforts to recruit students from URM groups were not widely embraced and could definitely be improved.

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