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Dental Hygiene Education and Hiring Practices of Dentists in Ohio

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ABSTRACT

Purpose: As education and clinical preparation affect employment opportunities for entry-level dental hygienists, dentists' perceptions of recent graduates should be considered when reforming education requirements. The purpose of this study is to examine general dentists' preferences for employing entry-level dental hygienists from two-year versus four-year degree programs by surveying the opinions of dentists in Ohio. Method: A survey was distributed from June to September 2004, to a sample of 700 general dentists practicing in Ohio, all alumni of Case Western Reserve University School of Dental Medicine. The survey included questions on hiring preference, salary, value of work experience, and applicable science and dentistry knowledge. Results: Fifty-six percent of responding dentists (n=225) have no preference for hiring a recent four-year dental hygiene graduate over a recent two-year graduate. Furthermore, the majority of responding dentists are not willing to pay a higher salary to recent graduates of four-year degree programs, including those with a hygienist holding a baccalaureate degree. Responding dentists perceive greater science knowledge among recent four-year graduates, but equal knowledge of performing prophylaxis and patient care among graduates of both programs. Conclusion: Two-thirds of responding dentists believe differences between recent two-year and four-year dental hygiene graduates no longer exist after two years of work experience. Perceptions of the significant role of work experience in training suggest that future reforms in dental hygiene education should incorporate more clinical experience to advance the professional capabilities of entry-level hygienists.

INTRODUCTION

Today's dental hygiene students can choose to attend a two-year or a four-year training program, and pursue an associate degree/certificate or a baccalaureate degree, respectively. While the American Dental Hygienists' Association (ADHA) recommends the baccalaureate degree be made the minimum educational requirement for licensure, the majority of dental hygienists hold an associate degree.¹ As education and clinical preparation affect employment opportunities for entry-level dental hygienists, dentists' perceptions of recent graduates from both degree programs should be investigated and considered when reforming entry-level and licensure requirements. This study intends to examine general dentists' preferences for hiring and working with entry-level dental hygienists from two-year versus four-year degree programs by surveying the opinions of Case Western Reserve University School of Dental Medicine alumni practicing in Ohio.

REVIEW OF THE LITERATURE

The ADHA considers either a baccalaureate or associate degree in dental hygiene from an institution accredited by the Commission on Dental Accreditation (CODA) and successful completion of the National Board Dental Hygiene Examination the minimum requirement for licensure and practice.^{2,3} The ADHA lists 289 dental hygiene education programs in the United States, forty-eight providing a baccalaureate degree.⁴

In the 2005 Focus on Advancing the Profession report, the ADHA recommends shifting the minimum entry-level hygienist requirement to the baccalaureate degree, stating, "The failure to standardize entry level at the baccalaureate level has had an adverse impact on the pace of development of advanced dental hygiene programs and the continued development of the dental hygiene body of knowledge."¹ Coinciding with the ADHA recommendation is a significant increase in the number of two-year degree programs compared to four-year degree programs. From 1990 to 2004, only two of the ninety-five new dental hygiene programs established provided the baccalaureate degree.¹ Of the twelve programs in Ohio, only one provides the baccalaureate degree in dental hygiene.⁴

Requirements for licensure and practice as a dental hygienist, established per state, are the same for all entry-level graduates of two-year and four-year programs and adhere to the same accreditation standards set forth by the CODA. The accreditation standards do not designate different curricula or clinical requirements for each degree, acknowledging only that the general education, social science, and biomedical science courses provided by associate degree programs should parallel those in the baccalaureate programs.² The baccalaureate curriculum differs by incorporating course requirements for graduate and professional programs.² A study at the University of Texas Health Science Center at Houston found students from two-year and four-year degree programs perform equally well academically.⁵ This comparative study measured the academic performance of the university's 2004 dental hygiene students, finding no difference between the certificate and baccalaureate groups.

One would expect salary data to reveal differences between two-year and four-year dental hygiene graduates. However, inferences about the value of different dental hygiene education programs cannot be made from available wage statistics. A 2005 American Dental Association (ADA) survey acknowledges only work experience as a factor in determining dental hygienist pay.⁶ The United States Bureau of Labor Statistics and the ADHA report that hygienist earnings vary by geographic location, employment setting, and years of experience, with no mention of degree held.^{7,8}

As both dental hygiene degrees produce capable graduates, changes in education and licensure requirements should consider how each degree affects the employability of an entry-level candidate. According to the Bureau of Labor Statistics, most dental hygienists are employed in dentists' offices.^{7,9} Dentists' perceived differences between recent two-year and four-year program graduates have not yet been measured. This study examines perceptions of entry-level candidates based on a survey of the opinions and experiences of general dentists practicing in Ohio, all of whom are Case Western Reserve School of Dental Medicine alumni. According to the Ohio State Dental Board (J. Smith, Ohio State Dental Board, oral communication, March 5, 2008), 938 of the 4,722 practicing general dentists in Ohio (approximately 20%) graduated from Case School of Dental Medicine.

METHOD

A survey (Appendix A) on perceptions of recent dental hygiene graduates was mailed to 700 general dentists practicing in Ohio from June through September 2004, all graduates of Case Western Reserve University School of Dental Medicine in Cleveland. Survey content was developed by the authors and pilot tested with dental hygiene students and faculty from both two-year and four-year institutions before being mailed to a sample of Case School of Dental Medicine graduates. The survey included five items on hiring preference, salary, value of work experience, and applicable science and dentistry knowledge. Dentists were asked to agree or disagree with statements and identify if one dental hygiene candidate would be stronger in selected science knowledge and job-applicable skills. Data management and analysis were carried out using Statistical Package for Social Sciences 13.0 for Microsoft Windows. Chi-square tests were performed to compare the distribution of response categories by dentist's characteristics.

RESULTS

Results were collected from June through September 2004, and thirty-two percent of the dentists (n=225) returned the survey. Of the 225 participating dentists, forty-six (20%) were female, 181 (80%) had been practicing more than ten years, and seventy-one (32%) work with a dental hygienist holding a baccalaureate degree. When hiring a dental hygienist, fifty-six percent of all responding dentists indicated no preference between a recent graduate from a four-year dental hygiene program and a two-year program (Table I). As expected, fifty-eight percent of the dentists working with a hygienist from a four-year program acknowledge a preference for candidates with this degree, while sixty-three percent of dentists who employ two-year graduates show no

preference for the recent graduate from the four-year program. When hiring preferences were examined by dentist's gender and years in practice, no preference for four-year versus two-year graduates was observed.

Consistently, the majority of dentists surveyed are not willing to pay a higher salary to recent graduates of four-year dental hygiene programs (Table II). Of the dentists working with four-year graduates, less than half (46%) would be willing to pay a higher salary to the entry-level candidate with a baccalaureate degree. Dentists' years in practice did not affect perceptions of entry-level hygienist salary; sixty-seven percent of dentists in either subgroup category disagree with providing higher pay to the four-year graduate. Dentist gender also did not result in different perceptions of hygienist pay, although forty-one percent of the female dentists compared to thirty-one percent of the male dentists would pay more for the four-year graduate.

Table I: Survey Results From Question 1

You would prefer to hire a recent graduate from a four-year dental hygiene program over a recent graduate from a two-year dental hygiene program.		
	Agree	Disagree
All dentists (n=225)	44%	56%
With four-year hygienists (n=71)*	58%	42%
With two-year hygienists (n=154)*	37%	63%
Practicing 10 years or less (n=44)	50%	50%
Practicing more than 10 years (n=181)	42%	58%
Male (n=179)	43%	57%
Female (n=46)	46%	54%

* These groups differed at $p < .01$.

Table II: Survey Results from Question 2

You are willing to pay a recent graduate from a four-year program in dental hygiene more than a recent graduate from a two-year program.		
	Agree	Disagree
All dentists (n=225)	32%	68%
With four-year hygienists (n=71)*	46%	54%
With two-year hygienists (n=154)*	27%	73%
Practicing 10 years or less (n=44)	33%	67%
Practicing more than 10 years (n=181)	33%	67%
Male (n=179)	31%	69%
Female (n=46)	41%	59%

* These groups differed at $p < .01$.

Table III: Survey Results From Question 3

After two years of experience, there would be no difference in pay between the two-year graduate and the four-year graduate.		
	Agree	Disagree
All dentists (n=225)	70%	30%
With four-year hygienists (n=71)*	58%	42%
With two-year hygienists (n=154)*	76%	24%
Practicing 10 years or less (n=44)	70%	30%
Practicing more than 10 years (n=181)	71%	29%
Male (n=179)	72%	28%
Female (n=46)	64%	36%

* These groups differed at $p < .01$.

The majority of responding dentists feel work experience is a determining factor in dental hygienist salary (Table III). Overall, seventy percent of responding dentists agree that there would be no difference in salary between a two-year and a four-year graduate after two years of work experience. Of the dentists working with a four-year dental hygiene graduate, fifty-eight percent also agree there would be no salary difference.

Responding dentists show consistent agreement on the perceived role of work experience in building clinical skills and dentistry knowledge for the entry-level dental hygienist (Table IV). Sixty-seven percent of all responding dentists agree with the statement, "After two years of experience, clinical efficiency and knowledge about dentistry cease to be distinguishing factors when comparing the two-year graduate with the four-year graduate." Sixty-two percent of dentists with four-year dental hygienists believe two years of work experience eliminates skill differences between the different graduates.

Table IV: Survey Results From Question 4

After two years of experience, clinical efficiency and knowledge about dentistry cease to be distinguishing factors when comparing the two-year graduate with the four-year graduate.		
	Agree	Disagree
All dentists (n=225)	67%	33%
With four-year hygienists (n=71)*	62%	38%
With two-year hygienists (n=154)*	70%	30%
Practicing 10 years or less (n=44)	63%	37%
Practicing more than 10 years (n=181)	69%	31%
Male (n=179)	68%	32%
Female (n=46)	66%	34%

* These groups differed at $p < .01$.

In comparing the science knowledge and patient skills of two-year versus four-year dental hygiene graduates, very few of the responding dentists (2% or less per category) perceive the recent two-year graduate to be the stronger candidate (Table V). Most of the dentists expect recent four-year dental hygiene graduates to exhibit stronger knowledge of basic sciences (73%) and dental sciences (56%), but to possess equal job-specific skills such as performing prophylaxis, patient interaction, and patient education (70%, 69%, and 64%, respectively).

Table V: Survey Results From Question 5

Survey respondents were presented with a list of different aspects of dentistry and asked to select the recent dental hygiene graduate who is stronger in the specific area.			
	Recent four-year program graduate	Recent two-year program graduate	No difference
Basic sciences	73%	<1%	26%
Dental sciences	56%	2%	41%
Prophylaxis	28%	1%	70%
Patient interaction	29%	1%	69%
Patient education	33%	2%	64%

DISCUSSION

Overall, survey results show that participating dentists perceive some differences in entry-level graduates from two-year and four-year dental hygiene programs, but these differences are not strong enough to support a preference to hire or pay more for either candidate. The dentists who employ a four-year dental hygiene graduate show a slight hiring preference compared to those who do not, but less than half of these dentists would be willing to award higher pay to hygienists of this group.

As nearly half of the responding dentists acknowledge a degree preference (Table I), it would be expected that all survey items show corresponding perceptions of superior clinical ability and higher salary for the four-year graduates. However, the dentists expect recent graduates from both degree programs to possess equal job-applicable knowledge and skills (prophylaxis, patient interaction, and patient education). Furthermore, work experience is shown as a determining factor in the perceived ability of a dental hygienist, not degree held. Over half of the responding dentists feel that two years of work experience will eliminate any discrepancies in knowledge of dentistry for hygienists of either degree. These dentists expect stronger basic and dental science

knowledge from recent four-year graduates, but this perceived difference does not support a hiring preference or a willingness to provide higher pay to the entry-level candidate with a baccalaureate degree.

With only two years of experience eliminating perceived skill differences between recent dental hygiene graduates, ADHA recommendations for changing the minimal education requirement should be further examined. Survey results support the significant role of work experience in the perceived ability of dental hygienists. As experience is expected to advance the job-applicable knowledge and skills of the entry-level candidate, additional clinical requirements may be the education reforms needed to further the dental hygiene profession, not a move toward the baccalaureate degree.

A notable limitation in this study pertains to the survey respondents' dental education. Biased perceptions of recent dental hygiene graduates may have resulted from the respondents having all attended the same dental school. However, as this dental school is not associated with a dental hygiene program, responding dentists were not inclined to prefer the recent graduate (two-year or four-year) of the university's corresponding dental hygiene school. In addition, although the sample is limited to Case School of Dental Medicine alumni, this demographic represents approximately 20% of general dentists practicing in Ohio and cannot be deemed insignificant when considering the overall general dentist population of the state.

To develop generalizations that would support dental hygiene education reform, hiring preferences of all dentists in Ohio and the United States should be examined. Expanding the survey demographic with comparative analyses of dentists' perceptions state- and nation-wide would provide hiring practices and opinions from a population representative of practicing dentists as a whole. A nation-wide survey would also provide the appropriate distribution of female dentists and those practicing more and less than ten years. In addition, comparative research on recent two-year and four-year graduates should be conducted to guide education changes. Ideally, research should compare the national and state board scores and clinical abilities of recent two-year and four-year dental hygiene graduates to understand any differences in education these programs provide.

CONCLUSION

Overall, dentists in this study do not prefer to hire a recent four-year dental hygiene graduate over a recent two-year graduate and are not willing to pay higher wages to entry-level candidates with the four-year degree. Responding dentists expect recent dental hygiene graduates of either degree to possess equal clinical abilities, but perceive stronger science knowledge from those with a baccalaureate degree. Two-thirds of the dentists believe any differences in clinical efficiency and dentistry knowledge no longer exist after two years of work experience. Perceptions of the significant role of work experience in training suggest that future reforms in dental hygiene education should incorporate more clinical experience to advance the professional capabilities of entry-level hygienists.

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APPENDIX A

Survey:

1. You would prefer to hire a recent graduate from a four-year dental hygiene program over a recent graduate from a two-year dental hygiene program. (Agree/Disagree)
2. You are willing to pay a recent graduate from a four-year program in dental hygiene more than a recent graduate from a two-year program. (Agree/Disagree)
3. After two years of experience, there would be no difference in pay between the two-year graduate and the four-year graduate. (Agree/Disagree)
4. After two years of experience, clinical efficiency and knowledge about dentistry cease to be distinguishing factors when comparing the two-year graduate with the four-year graduate. (Agree/Disagree)
5. Please select the recent dental hygiene graduate who is stronger in the specific area.
 - A) Basic sciences: (Recent four-year program graduate/Recent two-year program graduate/No difference)
 - B) Dental sciences: (Recent four-year program graduate/Recent two-year program graduate/No difference)
 - C) Prophylaxis: (Recent four-year program graduate/Recent two-year program graduate/No difference)
 - D) Patient interaction: (Recent four-year program graduate/Recent two-year program graduate/No difference)
 - E) Patient education: (Recent four-year program graduate/Recent two-year program graduate/No difference)