ADHA/Sigma Phi Alpha Journalism Award: Masters/Doctoral

New York State Dental Hygienists' Perceptions of a Baccalaureate Degree as the Entry-Level Degree Required for Practice

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Abstract

Purpose: Dual educational pathways exist for entry into the dental hygiene profession, namely associate and baccalaureate degrees. The purpose of this study was to examine practicing dental hygienists' perceptions, regarding the requirement of a baccalaureate degree as entry-to-practice for the profession.

Methods: A purposive sample of 800 dental hygienists licensed within New York State, both members and non-members of the Dental Hygienists' Association of the state of New York, were contacted via email and asked to participate in this Web-based survey. Survey items included both open-ended demographic and 12 Likert-type questions about perceptions of the Bachelor of Science in Dental Hygiene (BSDH) being required as entry-level into the profession. Data were analyzed using descriptive statistics, Spearman's rank correlations and the Kruskal-Wallis test.

Results: One hundred and seventeen surveys were returned and 107 (14%) were valid for analysis. Fifty-two percent of participants held an associate degree and 98% were members of the ADHA. Nearly a third of participants were employed in solo practice, and 43% agreed/strongly agreed the associate degree is sufficient preparation for dental hygiene practice. Still, more participants agreed/strongly agreed (50%) the BSDH should be considered entry-level for the discipline. Participants identified professional recognition by other health care practitioners and increased individual self-esteem as benefits of a BSDH.

Conclusion: Results indicate the BSDH as entry-to-practice may be essential in elevating the status of the dental hygiene profession to that of other mid-level health care providers. Improving professional competence and credibility with colleagues and patients may be an important personal benefit of earning a baccalaureate degree.

Keywords: associate degree, baccalaureate degree, entry-level degree, entry-to-practice

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Introduction

A century ago, Dr. Alfred C. Fones recognized the critical role preventive oral health care played in disease prevention. His vision for disease prevention led to the inception of the dental hygiene profession and, in 1906, Irene Newman became the first dental hygienist in the world. Fones and Newman had a mission to provide dental hygiene services, not only to patients in private practice, but also to individuals suffering from dental disparities who did not have access to care.[1] Since that time, the dental hygiene profession has made great gains. While the focus of the profession is still on disease prevention, the role of the dental hygienist has evolved and now encompasses a variety of workplace settings. Clinical dental hygienists may practice in private dental offices, school-based settings, community health centers, correctional institutions or nursing homes.[2] Outside of clinical practice, opportunities for dental hygienists exist in the fields of research, education, marketing, government, administration, health policy, advocacy and consulting.[2]

Existing dental hygiene education in the U.S. is characterized by wide diversity. Programs range

from 2 to 4 years at the college or university level or, more recently, in proprietary school settings. With the exception of Alabama, in which the Alabama Board of Dental Examiners provides a dental hygiene training program for employed dental assistants,[3] the minimum entry-to-practice credential in all states is currently at the associate degree level. Within the field of dental hygiene, two types of associate degree can be awarded - an associate of science degree or an associate of applied science degree. The associate of science degree is an undergraduate degree that is considered transferable and designed to prepare recipients to attend a 4-year degree program. The associate of applied science degree is designed to prepare individuals for employment in a career or technical occupation upon graduation.[4]

An associate degree dental hygiene program requires an average number of 2,650 clock hours of instruction compared to a baccalaureate degree, which requires approximately 3,100 clock hours of instruction.[4] While associate degree programs require, on average, the same number of clinical and laboratory clock hours, baccalaureate degree programs devote more didactic clock hours to patient care and provide more instruction in written communication, chemistry, oral health education and patient management.[4] When prerequisites are factored into total curriculum credit hours, academic associate degree programs take approximately 3 years (90 credit hours) to complete. This is approximately 20 to 30 credit hours beyond the traditional associate degree and only 30 credit hours less than a baccalaureate degree.[5] Licensure and scope of professional practice do not change whether one has a 2-year associate degree, 3-year associate degree or baccalaureate degree. Despite the plethora of program options for associate and baccalaureate education, the entry-to-practice requirement for dental hygiene in the U.S. continues to be the associate degree.[4] However, compared to mid-level providers across all health care disciplines, dental hygiene education does not require advanced professional preparation.

Additionally, graduates of a baccalaureate dental hygiene program have alternative career choices outside of clinical practice in areas such as administration, public health, research and education.[4] One might infer that a higher degree could equate to a higher salary, but the difference in salaries between 2-year graduates and 4-year graduates in clinical practice is relatively small. A 2007 survey administered by the American Dental Hygienists' Association (ADHA) found the mean salary for dental hygienists holding a 2-year degree to be $54,315 per year while the mean salary for dental hygienists holding a baccalaureate degree to be $58,105 per year.[6] This small difference in salary may not be a significant fiscal incentive for associate degree candidates to continue in a degree completion program or to choose a 4-year program as entry–to-practice.

Educational Changes within Health Care

Over the years, health care professions in general have undergone increases in their entry-to-practice credential requirements. For example, occupational therapy now requires a master's degree and physical therapy has moved from a master's level graduate degree to a doctoral degree as the entry-level to practice.[7] The degree previously required to practice pharmacy in the U.S. was the Bachelor of Science in Pharmacy, but in 1997 the American Council for Pharmacy Education (ACPE) officially adopted the Doctor of Pharmacy (PharmD) as the entry-level degree for practicing pharmacists.[8] The changes made were based on health care provider competencies identified by the Institute of Medicine (IOM). As the profession (and medical care in general) evolved, so did pharmacy education in order to fit into the new health care model of inter-professional care and expanding roles of pharmacists.[8]

The nursing profession has struggled with its academic requirements for over a century,[9] and like the dental hygiene profession, nursing offers dual entry into the profession. Debates have surfaced within the nursing community as to whether or not 2-year graduates are adequately prepared to meet the demands of patient care. The registered nurse (RN) parallels a registered dental hygienist (RDH) in that both professions award licensure at either an associate degree or baccalaureate degree and the scope of practice for each are determined by the state. A survey conducted by the National Council of State Boards of Nursing found 4-year nursing graduates to incorporate critical thinking skills into daily practice and have less difficulty with the management of complex patients as compared to non-baccalaureate prepared nurses.[9]

Increased Demand for Health Care

Oral Health in America: A Report of the Surgeon General was the first report that outlined the state of oral health care in America.[10] The purpose of the report was to "alert Americans to the full meaning of oral health and its importance to general health and well-being."[10] The report also brought to the public's attention the alarming number of individuals who are without dental care and the barriers to care that prevent many Americans from obtaining appropriate care. With the increasing need for oral health care and the declining dentist-to-population ratio, a question arises as to whether or not the dental workforce will be able to effectively meet the population's demand.[10] The Surgeon General's report further emphasized how critical education and training of dentists and allied dental personnel are to the provision of oral health care for the public.[10] More recently, Healthy People 2020, the government's prevention agenda, emphasized the need to improve access to preventive services and dental care.[11] As preventive oral health care specialists, dental hygienists are at the forefront of the oral health crisis that is plaguing America. Within the 2020 report, 17 oral health objectives have been established.[11] Capitalizing on the skills of a qualified dental hygienist can achieve many of these objectives. According to The U.S. Department of Labor, Bureau of Labor and Statistics, dental hygiene is ranked among one of the fastest growing professions and it is estimated that it will grow 33% through 2022.[12] When this increase in the number of dental hygienists is compared to the declining number of dentists, and the increasing demand for oral health care is factored in, there will be a greater need to call upon dental hygienists to sufficiently meet the public's demand.[13]

Barriers to a Baccalaureate Degree

The cost of associate degree dental hygiene education versus the cost of a baccalaureate degree could influence which type of degree the student chooses. Program directors participating in a 2008 American Dental Education Association (ADEA) meeting were surveyed and perceived the increased cost of a baccalaureate degree as a possible disadvantage in raising the entry-level degree requirement. However, Owuje et al also reported three-quarters of those survey participants supported advancing dental hygiene entry-level educational requirements to a baccalaureate degree.[5] In a 2011 report compiled by ADEA, the pathway to a baccalaureate degree was examined. While ADEA supports raising the educational credentials of dental hygienists, it was noted that the additional cost of a baccalaureate degree may dissuade associate degree recipients from furthering their education.[14] According to the National Center for Education Statistics, 45% of students attending a 4-year college on a full-time basis will need an additional year or more to complete their education.[15] Additional time spent in college equates to additional expenses.

Preferences Among Dental Professionals

Since most dental hygienists are employed in private practice, preferences of dentists could be a determining factor for which educational path the dental hygienist chooses. A survey completed by 225 dentists practicing in Ohio revealed that 56% had no hiring preference for a 2-year versus a 4-year dental hygiene graduate. Furthermore, 68% were not willing to pay a higher salary to a 4-year graduate. Extent of clinical experience was a determining factor in salary and 70% of the dentists surveyed agreed there would be no difference between 2-year graduates and 4-year graduates after 2 years of work experience.[16]

In the 2005 ADHA report Dental Hygiene: Focus on Advancing the Profession, a recommendation was made to implement the baccalaureate degree as the entry-level degree for the profession of dental hygiene.[2] To date, empirical data for implementing the baccalaureate degree as the entry point for the dental hygiene profession has both pros (elevated credentials and alternate career options) and cons (increased educational costs, limited articulation agreements and minimal wage increases). According to the ADHA, there are 335 entry-level dental hygiene programs with 288 of them offering an associate degree.[4] Nationwide, 44 dental hygiene programs offer a BSDH and 11 programs offer a degree completion.[4] Mandating a baccalaureate degree as the entry-level degree for the profession could impact dental hygiene education since there are more associate degree programs compared to baccalaureate degree and degree completion programs. Opinions favoring the change to entry-level professional credentials come primarily from faculty at baccalaureate programs and the professional association, which serves both the needs of the public and members of the profession.

Reporting of perceptions of practicing dental hygienists regarding entry-level degrees is limited in scope to either regional or program specific surveys. Specifically, this survey aimed to identify to what extent dental hygienists within the state of New York support the baccalaureate degree as the entry-level degree for the dental hygiene profession. Therefore, the purpose of this study was to survey practicing dental hygienists in the state of New York to determine their perceptions regarding changing the entry-to-practice degree from the associate degree to the baccalaureate degree. In addition, this study explored the relationship between participants' level of education with their support of the baccalaureate degree as the entry-level credential.

Methods and Materials

This descriptive study utilized a survey instrument adapted from a previous study conducted by Anderson and Smith to assess the opinions and attitudes of dental hygienists.[17] The types of questions included in the electronic survey were demographic, Likert scale (12 items) and ranking (1 item) questions. Approval for the survey was secured from the Idaho State University Institutional Review Board (#3996). Validity of the survey was established through expert review. The content experts who reviewed the survey were comprised of three individuals experienced in dental hygiene education, research and statistics. A nonprobability, purposive sample of 800 licensed dental hygienists within the state of New York comprised the population for this study. A list of all email accessible registered dental hygienists, both members and non-members, was obtained from the Dental Hygienists' Association of the State of New York. This list was by no means inclusive of all dental hygienists registered in the state. The Dental Hygienists' Association of the State of New York initiated all correspondence with potential participants that included a cover letter, informed consent and a link to the survey. A follow-up e-mail was sent to participants at 2 and 3 weeks after the initial email.

Data were collected with Qualtrics© and downloaded into an Excel file, then imported into SPSS 20.0 for analysis. Descriptive statistics were computed to show frequency distributions, percentages and measures of central tendency. Bivariate relationships (ordinal level participant demographics and entry-level baccalaureate degree perceptions) were analyzed using Spearman's rank correlation coefficient. The Kruskal-Wallis test was used to identify differences between degrees held by participants and opinions about the baccalaureate degree as entry-to-practice.

Table I: Demographic Profile of Participants

Age	n=113	Percent
18 to 28 years	13	12
29 to 38 years	17	15
39 to 48 years	16	14
49 to 58 years	38	34
>59 years	29	26
Years Since Graduation	**n=99**	**Percent**
1 to 10 years	30	30
11 to 20 years	20	20
21 to 30 years	12	12
>30 years	37	37
Highest Academic Degree	**n=114**	**Percent**
Associate Degree: Dental Hygiene	56	52
Bachelor's Degree: Non-Dental Hygiene	16	15
Bachelor's Degree: Dental Hygiene	12	11
Master's Degree	20	19
Doctorate Degree	3	3
Primary Practice Setting	**n=107**	**Percent**
Solo/Group dental practice	53	50
Academic/University/College	19	18
Multiple practice settings/ Multi-specialty clinic	12	12
Community health clinic/ Public health agency	10	10
Independent dental hygiene practice	5	5
Not in clinical practice	5	5
*Other	3	3
Member of the ADHA	**n=106**	**Percent**
Yes	105	98
No	1	1

*School based dental clinic, business, managed care/ insurance

Results

Demographics

Of the 800 electronic surveys mailed, 117 were returned, resulting in a 15% response rate, with 107 of those valid for analysis. The majority of respondents (n=67) were 49 years

Table II: Combined Level of Agreement with Statements of Perceptions on the BSDH

Statement	Strongly Agree/ Agree n (Percent)	Neutral n (Percent)	Disagree/Strongly Disagree n (Percent)
AD is sufficient preparation for practice challenges of in today's health care settings.	46 (43)	18 (17)	42 (40)
BSDH should be the entry-level degree for practice	54 (51)	18 (17)	34 (32)
BSDH is necessary to ensure the highest standards of service delivery	49 (46)	22 (21)	35 (32)
The BSDH degree is necessary to elevate the status of the dental hygiene profession to that of other mid-level health care providers.	76 (71)	13 (12)	17 (16)
A requirement for the BSDH degree might further limit diversity within the profession.	37 (35)	26 (24)	43 (40)
Those who are financially disadvantaged may not be able to afford the BSDH.	52 (49)	23 (22)	31 (29)
A BSDH offers more career opportunities.	78 (73)	18 (17)	10 (10)
Clinical experience is a better indicator of clinical competency than degree held.	69 (65)	19 (18)	19 (18)
A BSDH would increase professional recognition by other professionals.	75 (71)	24 (22)	7 (7)
A BSDH would improve overall professional competency.	55 (52)	30 (28)	21 (20)
A BSDH would increase individual self-esteem.	70 (66)	25 (23)	11 (10)
A BSDH would Increase salary levels for dental hygienists	31 (29)	28 (26)	47 (44)

Note: Percentages may not total 100% due to rounding

of age or older and more than a third of respondents graduated over 30 years ago. Fifty-two percent (n=56) had an associate degree as their highest academic credential, and a high majority of participants (88%) had attended a dental hygiene program in New York State. Nearly all respondents (98%) were members of the ADHA. Table I provides additional demographic characteristics of participants.

Perceptions of the BSDH as Entry-level for the Profession

Agreement that an associate degree sufficiently prepares a candidate for practicing dental hygiene was almost evenly split between agree/strongly agree (43%) and disagree/strongly disagree (40%). More than half (51%) agreed or strongly agreed a BSDH should be the entry-level degree requirement for the practice of dental hygiene and 32% disagreed/strongly disagreed.

A majority of respondents (n=75, 71%) agreed/strongly agreed that a BSDH would increase professional recognition by others, as well as increase self-esteem (n=70, 66%). Slightly over half of respondents (n=55, 52%) perceived a BSDH as a benefit by improving professional competency. Seventy-three percent agreed or strongly agreed that a BSDH degree offers more career opportunities, however, 44% of participants disagreed/strongly disagreed that a BSDH would increase salary levels. Table II further summarizes respondents' level of agreement to statements regarding the BSDH as an entry-to-practice for dental hygiene.

Perceptions Correlated with Age, Years in Practice and Highest Level of Education

Perceptions about the baccalaureate degree as entry-to-practice did not correlate to participants' demographics of age, or number of years in practice. Table III summarizes statistical analysis of participants' perceptions of the baccalaureate degree as entry to practice by education level. As can be seen from this table the following 2 statements were statistically significantly different among the different levels of education: The BSDH is necessary to ensure the highest standards of service delivery in the field of dental hygiene (p=0.024) and A BSDH would improve overall professional competency (p=0.001). Table III further summarizes participants' perceptions regarding the baccalaureate degree as entry-to-practice based on their reported highest level of education achieved.

Discussion

Recently, the ADHA, in collaboration with the Santa Fe Group, held a conference on transforming dental hygiene education.[18] The Santa Fe Group is comprised of scholars, business leaders and members of health care professions who share a common desire to improve oral health. During this conference, considerable discussion ensued concerning advancing the minimum entry-to-practice. Advocates discussed the need to consider both BSDH and graduate level education as options for entry to practice. The need to support a higher entry-level degree requirement for the profession can be seen with the attention both the ADHA and ADEA have been giving to the topic. Although this study did not address an advanced degree for entry-to-practice, results did support the Santa Fe Group's option of the BSDH.

Another group that has taken an interest in the degree requirements for dental hygiene education is The New York State Dental Hygiene Educators' Association. The New York State Dental Hygiene Educators' Association, established in 1963, is a non-profit organization developed by the dental hygiene educators of New York. A main function of the organization is to provide a forum for issues related to the education of dental hygienists in New York State. During a 2010 meeting, a recommendation was made to move forward with investigating the possibility of increasing the entry-level requirement for the dental hygiene profession in New York State to a baccalaureate level. The investigation is still in its infancy and no legislative proposals have been put forth to the state board with regard to changing degree requirements. To date, there is no data regarding the opinions of practicing hygienists on degree elevation in a state where such a change is being considered. Results from this survey reinforce the New York State Dental Hygiene Educators' Association's recommendation of the baccalaureate degree as the entry-level degree for the profession as a majority of participants perceived it would improve professional competency.

Additionally, this study's results parallel those from 2 Canadian studies showing support of a baccalaureate degree as the entry-to-practice credential and identifying it as a perceived benefit to dental hygiene practice. Kanji et al explored the perceptions of diploma dental hygienists in Canada, who had continued with a baccalaureate degree completion program.[19] Participants perceived that obtaining a baccalaureate degree increased their self-confidence and gave them more credibility as a dental professional. Respondents also felt the baccalaureate degree offered them more career opportunities outside of the traditional clinic practice setting.[19] Imai and Craig conducted a survey of 28 dental hygienists who graduated from the University of British Columbia's Bachelor of Dental Science in Dental Hygiene Program from 1994 to 2003 and explored motivating factors for pursuing a BSDH.[20] Of the motivating reasons for pursuing a BSDH, the following were noted as being very important to survey participants: personal satisfaction (92.6%), increase knowledge (85.2%), work outside of traditional dental hygiene practice (44.4%) and for the status of the degree (37%). Although most participants viewed professional recognition as being "very important" it was much lower (22.2%) than the other categories.[20]

Across other allied health professions, there is

Table III: Means and Results of Kruskal-Wallis Test Comparing Levels of Agreement Across Highest Academic Degrees

Statement	Associate Dental Hygiene	Baccalaureate Dental Hygiene	Baccalaureate Other	Master's	Doctorate	**p-value
Associate degree is sufficient preparation for the challenges of practicing in today's health care settings	2.65	3.58	2.94	3.15	4.33	0.488
BSDH should be the entry-level degree for practice	2.82	1.67	3.06	2.5	1	.0.065
The BSDH is necessary to ensure the highest standards of service delivery in the field of dental hygiene	3.05	1.75	2.81	2.4	1	.0.024
The BSDH degree is necessary to elevate the status of the dental hygiene profession to that of other mid-level health care providers	2.29	1.42	2.38	1.75	1	0.1
A requirement for the BSDH degree might further limit diversity within the profession	2.93	3.67	3.06	3.15	4	1
Those who are financially disadvantaged may not be able to afford the BSDH	2.47	2.92	2.81	3.1	3.33	1
A BSDH offers more career opportunities	2.16	1.83	2.25	2.15	2	1
Clinical experience is a better indicator of clinical competency than degree held	2.02	2.92	2.63	2.75	2.33	0.146
A BSDH would increase professional recognition by other professionals	2.27	1.5	1.81	1.79	1.67	0.575
A BSDH would improve overall professional competency	2.95	1.58	2.06	2.05	2.33	0.001
A BSDH would increase individual self-esteem	2.36	1.5	2.19	1.9	1.67	0.5
A BSDH would increase salary levels for dental hygienists	3.24	2.83	3	3	3.67	1

**Bonferroni Corrected p-value

information to support the advantages to a baccalaureate degree. Presently there is bill in the New York State Assembly that if passed will require associate degree prepared RN's to obtain a baccalaureate degree within 10 years of initial licensure.[21] This slow but steady change in nursing arises from a need to better prepare nurses for the challenges of providing better patient care to a more diverse and aging population. Within the nursing community, there is a growing body of research to support that baccalaureate degree prepared nurses equate to better patient outcomes. A meta-analysis completed by Johnson assessed the difference in clinical performance of associate degree nurses as compared to nurses with a baccalaureate degree.[22] The study revealed that the level of performance and professionalism demonstrated by baccalaureate prepared nurses to be significantly higher in the domains of communication, problem solving and professional role as compared to nurses with an associate degree.[23] These findings correspond to this study in that perceptions of New York State dental hygienists indicated the BSDH is necessary to provide the highest standards of care as well as increased professional competency. The additional education required for a baccalaureate degree may better prepare dental hygienists to assume the role of mid-level provider to meet the increasing demand for oral health care.

This study has several limitations that must be considered. The sample size was limited to only dental hygienists practicing in the state of New York who were accessible by email. While convenient for accessing dental hygienists, this process may have excluded other dental hygienists from the state who might have provided a different perspective. In addition, the response rate for the study was low, and results cannot be generalized to the entire population of practicing dental hygienists within the state of New York or across the U.S. Furthermore, the vast majority of respondents were members of the ADHA and the dental hygienists who participated were self-selected. Therefore, the positive findings in this study may be attributed to the participants' inherent biases. Establishing a BSDH as the point of entry into the profession for New York State would not only impact dental hygiene students entering the profession but also dental hygienists who are currently practicing. It is vital to understand the objectives and interests of all those involved. To prepare dental hygienists for future roles in the changing health care system, dental hygiene education must prepare graduates with skills comparable to those of other mid-level health care providers. The transition to a baccalaureate degree as the entry-level degree requirement will not be without challenges, and resourceful leadership will be required to address this deficiency and assist the profession with successfully navigating the changing tide of the future.

Conclusion

Overall, New York State licensed dental hygienists in our study held positive views regarding the baccalaureate degree as entry-to practice for the dental hygiene profession. The results from this survey may help with advancing initiatives and policies keeping in line with the goal of the ADHA.

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