The Baccalaureate as the Minimum Entry-Level Degree in Dental Hygiene

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Abstract

A growing body of evidence indicates the baccalaureate degree is needed for dental hygiene (DH) graduates to address the changes in oral health delivery and health systems, develop the societal expectations of a professional, and practice to the full extent of their education. Transitioning from the associate to the baccalaureate as the minimum entry-level degree in DH will better prepare graduates to address the increasingly complex oral health care needs of the public. The higher degree prepares the dental hygienist to serve in roles that will improve access to high-quality care and allow for interprofessional collaboration as a part of a health care team. A higher entry-level degree is also needed to advance the public perception of DH and its recognition as a unique health care profession. However, reported student barriers to the entry-level baccalaureate degree include time and funding constraints, and the belief that the associate degree education is sufficient for clinical practice coupled with a lack of perceived value/benefit of the higher-level degree. This narrative literature review examines relevant policies, standards, and survey data to assess the support for the baccalaureate degree as minimum entry-level education in DH. As the roles for dental hygienists expand to meet the needs of the changing population demographics, the health care market demands for a baccalaureate degree educated dental hygienist will follow. More research is needed to document the value of the baccalaureate-prepared dental hygienist.

Keywords: dental hygiene, dental hygiene education, baccalaureate, bachelor's degree, dental hygiene practice, workforce models

This manuscript supports the NDHRA priority area, **Professional development: Education** (educational models)

Submitted for publication: 10/13/20; accepted: 3/30/21

Background

The American Dental Hygienists' Association (ADHA) has supported the concept of raising the entry-level education to the baccalaureate degree for dental hygiene (DH) since 1986.[1] The Canadian Dental Hygienists' Association (CDHA), as well as a growing number of regulatory bodies in the European Union (EU) and European Economic Area (EEA) also provide support for the baccalaureate degree as the minimum entry-level to practice dental hygiene.[2,3] This support is predicated on the belief that education has a significant impact on the knowledge and competencies of the dental hygienist similar to other health care professionals. A higher entry-level education to the profession is also needed to advance the public perception of DH as having its own unique research base, body of knowledge, and scope of practice. Consumers expect a high level of knowledge and skill in their oral health care providers and will continue to demand a high level of quality services from these practitioners. Also, the growing clinical knowledge and mounting complexities in the provision of oral health care services mandate that dental hygienists possess the educational preparation to meet these demands.

In this narrative review of the literature, the authors assess the support for the baccalaureate degree to be the minimum level of entry to the profession. Ultimately, this transition to a higher level of education can also benefit the public by reducing the overall costs of care through models that emphasize prevention and health promotion-based care. Considering the rapid change in both the oral and general health care arenas, transformation in dental hygiene curriculum and competencies is critical.[4] Additionally, with more states allowing the public to have direct access to dental hygienists, higher levels of education are needed to expand the roles DH plays in all areas of the health care system as primary, rather than allied, health care providers.[4]

Educational Programs and Professional Standards

Currently, entry into the dental hygiene profession is through certificate, diploma, and associate and baccalaureate degree programs, with the majority awarding an associate degree. In 2019 there were 327 institutions with dental hygiene programs.[5] A majority (80.1%, n = 262) of all programs awarded associate degrees, whereas fewer than one-fifth (15.3%, n = 50) granted baccalaureate degrees in dental hygiene (BSDH).[5] A small number of institutions (3.1%, n = 10) offered baccalaureate degrees not specific to DH.[5] Approximately 65% of the dental hygiene programs are offered at community and technical colleges.[5] Associate degree programs, in general, required a minimum of one year of college-level coursework or the completion of specific prerequisites.[5]

The Commission on Dental Accreditation (CODA) sets the standards for dental education programs, including DH.[6] While the thirty-member commission includes representation from all communities of interest, only one member is from dental hygiene and is appointed by the ADHA. When comparing associate and baccalaureate degree programs, it is worth noting that the accreditation standards are the same regardless of the degree awarded. However, in a recent report of program data, baccalaureate degree programs tended to offer more clinical hours devoted to patient care (591 hours versus 541 hours) than associate degree programs and more didactic hours on written communication, chemistry, oral health education/preventive counseling, and patient management.[5]

Challenges to Standardizing Entry-Level for Dental Hygiene

In the American Dental Education Association (ADEA) "Advancing Dental Education in the 21st Century" project, introduced in 2015, recommendations were made to address the challenges in dental education to meet the oral health care needs of the public as part of larger health education and delivery systems.[7] Among those recommendations were "to transition to the baccalaureate degree for entry into practice" and "to increase dental hygienists' role in regulating dental hygiene education and practice."[7] One of the challenges in advancing the dental hygiene profession and standardizing entry-level for dental hygiene is that the profession is underrepresented within CODA.[8] While other health professions control their own accreditation processes and standards, CODA commission members, primarily outside of the DH profession, control DH education standards. In addition, the licensure process that regulates qualifications and practice within each state, effectively remains controlled by dentists and other individuals outside of the profession, rather than dental hygienists. As of February 2019, twenty states within the United States have DH advisory committees within the state boards of dentistry or boards of dental examiners; however, only five of the twenty states have varying degrees of self-regulating boards.[9] Only one state, California, has a fully self-regulating licensing board.[10] The Dental Hygiene Board of California also has oversight of all dental hygiene education programs in the state.[10]

Responsibilities of the Commission on Dental Accreditation include formulating and adopting guidelines for accrediting allied dental education programs.[6] Implicit in the CODA mission language is that DH, as an allied health profession, lacks autonomy and is a dependent auxiliary to the dental profession. Also, minimum entry-level into DH practice and the termination of education through a certificate, diploma, and associate degree, further supports the concept of DH as an allied health profession.[11] While the associate degree education may take less time than a baccalaureate degree, there is concern that the shorter timeframe will not adequately prepare graduates that are ready to address expanding scopes of DH practice. Also, dental hygienists might benefit from holding at least an equivalent degree, to be perceived as equals by other health professionals when working interprofessionally.[12]

Student perceived barriers to the baccalaureate degree for entry into the profession have been cited in the literature as being due to overall cost and time constraints, along with the belief that an associate degree is sufficient for clinical practice coupled with a lack of value/benefit in an advanced degree.[13-15] However, many associate educated dental hygienists have already completed a considerable number of college level courses as pre-requisites to program entry. In a pilot study of dental hygiene education programs, it was found that dental hygienists in community college education programs are completing coursework and contact hours far exceeding the associate degree they receive.[16] Transitioning these programs to baccalaureate degree programs can eliminate this discrepancy and give graduates a terminal degree that correctly reflects their level of education.

The evolution of DH scope of practice requires graduates to be better prepared to confront the challenges encountered beyond the education and competence of an allied health professional. For example, a majority (84%) of the state dental hygiene regulatory bodies have policies allowing for direct access of DH services in a wide range of health care settings without the presence or direct supervision of a dentist.[17] In addition, 18 states have practice acts containing statutory or regulatory language allowing Medicaid to reimburse dental hygienists directly for services rendered.[18] The current expectations of the entry-level graduate dental hygienist include an ever-expanding

collaborative care model that reflects the growth, complexity of DH practice and requires expertise that comes from education beyond the associate degree.[1]

Projections, Growth and Outcomes

Dental hygiene has been cited as one of the fastest-growing professions in the United States (US).[19] According to the National Center for Health Workforce Analysis, the employment of dental hygienists will grow by 20-28%, representing a faster than average projected rate than seen in most health care professions.[20] In contrast, the demand for dentists nationally outpaces the supply in all 50 states and the District of Columbia.[20] With dental student debt upon graduation averaging $247,000, most new graduates cannot afford to open a private practice or work in low-income or rural communities.[21] Also, the high cost of dental education may impact future applicant pools.[21] In light of these issues affecting access to care, it is logical to educate the dental hygienist at the baccalaureate level for entry into the profession. The entry-level baccalaureate degree will provide a workforce capable of treating the increasingly complex chronic conditions of a diverse population and the ability to practice in a variety of settings using sophisticated technology and information management systems.

Consequently, dental hygiene programs need to design broader curriculum plans with advanced education and skills to prepare all graduates for expanding roles and services.[22] An expanded curriculum at the baccalaureate level will provide the necessary education to address workforce changes and prepare interested graduates for master's level programs such as the Advanced Dental Therapist (ADT) mid-level provider.[4,22] Mid-level provider models like the ADT were created to prepare dental hygienists to work in underserved areas as a means of addressing access to care issues.[22] Also, these workforce models were created to prepare the dental hygienist for critical shortage roles in other delivery settings such as corporate, community-based, hospital, long-term care facilities, school-based, or mobile settings.[22] Most clinical dental hygienists holding an associate degree would be ineligible for entry into these types of programs without earning a baccalaureate degree.[23]

Increasing Need for Qualified Dental Hygiene Faculty

A pool of well-qualified DH educators with master's and doctoral degrees will be necessary to address the demand for services and projected growth rates for dental hygienists. In a 2018-19 survey of degrees held by dental hygiene faculty in the US, the number of faculty members holding a baccalaureate degree (36%) was only slightly higher than those holding a master's degree (32.5%).[5] Only 4.1% held doctorate degrees and 8.6% held associate degrees, while 17.9% of the faculty members were dentists.[5] However, CODA Standard 3.7 specifies that full-time DH faculty members must hold a baccalaureate degree or higher to teach, and most DH programs show a preference for educators with a master's degree or higher.[24] An increase in the number of baccalaureate-educated dental hygienists would in turn, increase the applicant pool of master's degree programs and subsequently increase the number of future educators needed to help fulfill the anticipated DH faculty shortage.[24,25]

In a recent report from the ADEA, high rates of faculty retirement are predicted in the coming five years, underscoring the need to prepare future educators.[25] With over 50% of the faculty workforce over 50 years of age, a DH faculty shortage is imminent, requiring a large pool of qualified future educators with the ability to easily transition from the baccalaureate to higher degrees.[25] Students in undergraduate baccalaureate-level programs should be encouraged to explore career paths beyond those of clinical DH. Baccalaureate degree DH programs are well positioned to support a growth mindset that includes academia and research.

Comparisons to Nursing

Advancing the dental hygiene professional education and practice through broader curriculum plans can be modeled after other health care professions such as nursing. For example, in a 2011 initiative, the Robert Wood Johnson Foundation and the Institute of Medicine provided an action-oriented blueprint for the future of nursing and recommended that a minimum of 80% of the associate-level registered nurses transition to a Bachelor of Science in Nursing (BSN) by 2020.[26] Nursing literature provides evidence in the differences between associate and BSN degree nurses in regards to the delivery of high quality and safe health care.[26,27] Nurses with higher degrees have been shown to demonstrate higher levels of competency in the delivery of safe, high-quality care.[28,29] Another study identified that BSN educated nurses reported significantly higher levels of preparation in research skills and evidence-based practice.[29] As of 2019, approximately one half of the new nurse graduates enter practice with an associate degree.[27] However state laws, such as one passed in New York, and policies requiring a baccalaureate degree within ten years of initial licensure, will increase the number of nurses holding a BSN in the workfoce.[27]

Additionally, some health professions are replacing their baccalaureate degree with the masters and doctorate as the minimum requirement for entry into the profession.[30] There is research in support of doctoral dental hygiene programs to further potentiate dental hygienists as scholars and

scientists.[31] The baccalaureate-prepared dental hygienist will be poised to enter advanced professional degree programs with the requisite critical reasoning and decision-making skills. Similar to nursing, the new DH curriculum within entry-level baccalaureate programs reflects the changing roles of the dental hygienist, such as working independently and collaborating interprofessionally, as part of a coordinated health care team in non-dental settings.[7] As with other health professions, dental hygiene education at a higher level will provide more time for specialized areas of focus in public health, education, healthcare management, and research.[4,7]

Educational Mobility

In response to calls for a transformation in dental hygiene education, institutional leaders are advised to review, strengthen, or adopt policies that facilitate mobility from the associate degree to the Bachelor of Science in Dental Hygiene (BSDH).[4] Educational systems can be created to promote academic progression with multiple options for achieving the baccalaureate degree outside of the BSDH. Baccalaureate degree completion programs are an example of post-licensure programs that provide a pathway for the individual who already has a diploma or associate degree in dental hygiene. Another pathway is the option of dual admissions/enrollment programs. Students enrolled in an AS/AAS dental hygiene program within a community or technical college can simultaneously obtain a BSDH from an affiliate institution.[32,33] This innovative pathway allows a student to graduate with both degrees simultaneously or within a shortened period after completing the associate degree.

Re-imagining the entry-level dental hygiene degree as shifting from the associate to the baccalaureate level also necessitates recognizing the advantages of dental hygiene education within the community college and technical college settings. Community colleges often are near a hometown, offer low-cost yet high-quality education, and have democratic acceptance criteria/rates (often accompanied by strict academic achievement requirements after admission). Many health care professional programs have flourished within the community and technical college settings. They continue to provide opportunities to students through transfer and articulation agreements with state and private universities and distance-learning initiatives.[35] Some community colleges can now confer a baccalaureate degree, however, state legislative changes are required to allow for this process.[34,35]

Global Support for the Baccalaureate Degree as Entry-Level

Globally, there is evidence in support of the baccalaureate degree as the minimum entry-level.[36,37] A majority of European Union (EU) countries are moving away from the associate degree (diploma) to the baccalaureate degree as entry-level.[36] Notably, the EU gradually has phased out the two-year diploma and requires a baccalaureate degree as an entry-level into the DH profession.[36] Also, within the EU, there is an increase in the number of dual degree programs for dental therapists and dental hygienists.[36] Since 2003, trends in the EU member states reflect an increased number of countries permitting autonomous practice by dental hygienists with or without a referral from dentists to better address the public's oral health needs.[36]

In contrast, the baccalaureate degree is still not the entry-level in North America. According to a recent study of dental hygiene students in Canada, 78% of the respondents "strongly support baccalaureate education" as the entry to practice.[37] The students' views reflect the need for advancing DH education in areas such as oral medicine, immunology, and microbiology, providing graduates with the skills and abilities to meet the complex oral health needs of the aging as well as underserved populations.[37] The findings in this survey are consistent with dental hygiene literature regarding reasons for the pursuit of a baccalaureate education that include expansion of one's knowledge base, increased personal satisfaction, improved employment opportunities, higher public perception, increased critical thinking abilities, smoother transition to graduate education, and superior economic potential.[38,39] Correspondingly, in a survey of ADHA members between 2016-2017, over half (65%) of the respondents had degrees beyond the associate level. Participants in the US were shown to value higher education as a necessary step in addressing the changing roles and responsibilities within the dental hygiene profession.[40]

Dental Hygiene Educational Models and Content

Shifting demographics along with corresponding oral diseases require educational considerations for future oral health care professionals and the services provided within the dental professions will increase to meet the needs of an aging population. Shifting demographics along with corresponding oral diseases require educational considerations for future oral health care professionals and the services provided within the dental professions to increase to meet the needs of an aging population. However, by 2035, it is projected that older adults will exceed the number of children in the population by approximately 1.5 million people.[41] The combination of the rise in the aging population along with their complex medical needs, will require health care providers with more advanced skills and education.

Correspondingly, chronic diseases are increasing within the younger population. Medical conditions such as diabetes, obesity, and asthma, are increasing, along with their accompanying

oral complications.[42,43] Another demographic shift within the US population is the increase in immigrants from non-European countries, creating greater oral health care needs in the population.[44] Data from the Migration Policy Institute in 2018 revealed that 44.8 million people in the United States were foreign-born, a number that has than quadrupled since 1965.[45] In light of the demographic shifts, DH faculty members are challenged to educate students to provide culturally responsive counseling and treatment. The increase in oral diseases may also suggest that traditional patient education strategies taught in DH schools may be insufficient at supporting behavior change, and may necessitate a greater focus on more effective tools such as motivational interviewing in the curriculum.[46-47]

Furthermore, approximately one in six children in the US live at or below the poverty level,[49] putting them at risk for asthma, obesity, malnutrition, abuse, malocclusion, and dental caries.[48] Medicaid enrolled approximately 37 million low-income children in 2017; however, access to and utilization of dental services have been continuing concerns.[50,51] Over twenty years ago, the US Surgeon General identified the failure to deliver services to impoverished children as a failure on the part of dentists and dental hygienists.[52] Following the Surgeon General's proclamation, "A National Call to Action to Promote Oral Health," called for changes in health professional education to eliminate these access to care issues.[53] Dental hygiene educational models must inspire a sense of social responsibility and the imperative for advocacy and care of vulnerable and underserved populations. These educational models need to help students develop a level of compassion and commitment to care for the members of these communities.[54]

Leaders within the dental education community suggest that dental education has not yet sufficiently adjusted to meet the oral health needs of the public.[55,56] Significant gaps in current dental curricula have been identified along with recommendations for change.[55,56] Service learning (SL) is a learning tool that helps students develop cultural awareness to address the underserved populations[57,58] and meets the recommendation that "clinical training will be more effective when training is delivered to the student in the same context in which he or she will practice."[59] Integrating SL into the dental curriculum has been shown to facilitate a deeper understanding of the relationship between health and disease and socio-political forces within a community.[60] Like any effective learning tool, SL takes time and careful coaching and requires more time within the dental hygiene curriculum for effectiveness. Baccalaureate DH education programs can be designed to provide more opportunities to integrate SL into the curriculum.

Recommendations

A growing body of evidence indicates the baccalaureate degree education will provide greater opportunity to develop the societal expectations of a professional, that of competence, trust, and autonomy of decision-making in DH graduates.[2-4,9,12-16,31,37-40] As the roles and demand for dental hygienists increase within diverse health care settings, prospective employers will recognize the advantages of a more highly educated workforce, as reflected in nursing research.[26,,27] During this period of transition in dental hygiene education and practice, it may be helpful to look to the nursing profession's experience with this issue. Nursing partnered with leading health care and professional organizations to provide evidence-based research and position statements in support of the baccalaureate degree as entry-level and its relevance to health care outcomes.[26] Existing nursing research can help the dental hygiene profession determine which components of the baccalaureate education work best for developing critical thinking and decision-making skills and ultimately lead to growth in clinical practice skills and leadership. Results from this educational transition in nursing can also provide guidance on whether a background in different academic fields, such as broader liberal arts and humanities education, along with science, create a more effective foundation for graduates.

Conclusions

Baccalaureate dental hygiene programs are structured to manage the changing healthcare needs through courses in the liberal arts and advanced social and biological sciences. These programs offer professional dental hygiene coursework in a broader range of settings than can be addressed in associate degree programs. Dental hygiene baccalaureate programs provide formal coursework that emphasizes the acquisition of professional identity, leadership development, research and scholarship skills, and exposure to community and public health competencies. Ultimately, the advanced educational model will create oral health professionals who excel in dealing with the differences between individual patients and populations, social justice issues such as disparities in oral disease burden and access to care, and innovative workforce changes.

Changes are needed in dental hygiene education to meet the oral healthcare needs of the US population. To advance the dental hygiene profession, support is needed from government agencies and educational institutions, as well as individuals and members of the health professions committed to improving oral health. There is strong acceptance for the baccalaureate level of education to practice model for dental hygiene professional education from professional organizations such as the ADHA. Meeting the oral health

care needs of the public will require new roles for the dental hygienist and innovative models of oral health care that are achievable through the adoption of the baccalaureate degree as minimum preparation to enter the dental hygiene profession.

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