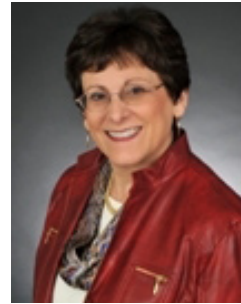


# Original Manuscript

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## Advancing the Profession through Doctoral Education

### Introduction

Dental hygiene was predicated on the notion that oral disease can and should be prevented. Over the course of the first 100 years of the profession, entry level education has focused on technical skill development to remove deposits that contribute to oral disease, and to teach clients how to prevent caries and periodontal diseases. Refinement and advancement of clinical skills continues to be a mainstay of dental hygiene education.

Since the 1980s, greater emphasis has been placed on the development of the discipline of dental hygiene through research, scholarship and advanced education. Six roles for dental hygiene were identified during a series of education and practice workshops: clinician, researcher, educator, administrator/manager, advocate and public health.<sup>1</sup> The American Dental Hygienists' Association (ADHA) responded to this initiative by creating documents that provided direction in how to approach scholarship and professionalization.<sup>1,2</sup>

During the early 1990s, the first National Dental Hygiene Research Agenda was created and validated.<sup>3</sup> Over the next 10 years, several refinements in the agenda were made to reflect the evolving nature of the contribution of research to the growth of the profession.<sup>4,5</sup>

In 2005, the ADHA published "Dental Hygiene: Focus on Advancing the Profession."<sup>6</sup> Within this document, the profession recognized that dental hygiene scholars were needed to lead the development of theory, and the acquisition and dissemination of knowledge unique to dental hygiene. Likewise, a shortage of dental hygiene faculty was recognized as a serious constraint for the continued progress of the profession. An aim recommended within this report was to create a doctoral degree program in dental hygiene. Recommenda-

**Abstract:** Doctoral education in dental hygiene is necessary to create a cadre of dental hygiene researchers and scholars, and to develop educators who will expand the body of knowledge for the profession. Dental hygienists with advanced degrees will require skill sets that parallel those of other professionals if they are to function productively as credible, equal members of interprofessional teams. Doctorally-prepared dental hygienists will be working as leaders, administrators and researchers, and will be influential in creating models that increase access to care, developing collaborative health care teams and improving health outcomes. The doctorate of philosophy is the terminal graduate degree for any discipline, and is the pinnacle for the profession. This paper explores the development of doctoral degrees for dental hygiene, and encourages educators to develop models for graduate programs based upon considerations presented here.

**Keywords:** doctoral education, graduate education, leadership, scholarship, research

tions were to:<sup>6</sup>

- Develop curricular models for both professional (doctor of science in dental hygiene) and academic (doctor of philosophy) doctoral programs in dental hygiene
- Conduct educators' workshops at professional meetings to promote the development of doctoral programs in dental hygiene
- Publish curricular models for dental hygiene professional journals

In addition, the International Federation of Dental Hygienists conducted a workshop for the House of Delegates members during their 2010 meeting in Edinburgh, Scotland. At that time, it was identified that advanced education universal to the international community was desirable.<sup>7</sup>

To date, curricular considerations for a doctoral degree program in dental hygiene have been pro-

Table I: Comparison of Doctoral Degree Options in Dental Hygiene

Characteristics	EdD in Dental Hygiene	DrSc in Dental Hygiene	PhD in Dental Hygiene
Roles	Creating and implementing models for interprofessional education	Improving the delivery of quality oral health care services and outcomes across populations	Discovering, testing and disseminating new knowledge
Curricular considerations	Courses in educational leadership, change strategies, educational policy and governance, issues and trends in higher education, instructional design and technology	Courses in global health advocacy, models of care, inter-professional systems, outcomes assessment, cultural diversity, health care technology	Courses in the development of a scholarly identity: advanced research designs, scientific writing, grantsmanship, inquiry and theory development, and dissertation and dissemination of research
Contributions to Profession	Cadre of educators to fill faculty shortages in academic institutions, and support dental hygiene entry level, degree completion and graduate programs	Cadre of clinicians to create systems to improve oral health outcomes working within inter-professional teams without supervision	Cadre of researchers and scholars who will propose, test and advance theories unique to the discipline

posed.<sup>8,9</sup> Workshops on doctoral dental hygiene education were offered at the 2012 American Dental Education Association Annual Session confirming the interest in the creation of doctoral programs.<sup>10</sup> Proponents of doctoral education support the development and implementation of a doctoral curriculum within the next several years that focuses on research, scholarship and global health advocacy.

### Degree Options

Doctoral education in dental hygiene is designed to create a cadre of dental hygiene researchers and scholars, and to develop educators who will expand the body of knowledge for this dynamic profession. In considering the opportunities within this advanced education, the authors propose the pursuit and development of 3 types of doctoral degrees: the doctorate of education for those who wish to advance the education of dental hygienists and other health professionals, the doctorate of clinical science for those who wish to provide advanced clinical programs in a variety of health care delivery models or systems and the doctorate of philosophy for those who are interested in expanding the research dimension of the profession. A comparison of these 3 degree options appears in Table I.

### Vision for Programs

In the next 100 years of dental hygiene, doctoral education for this discipline will expand based on the interest of hygienists to work in capacities be-

Table II: Examples of Career Options for Doctoral-Prepared Dental Hygienists

Position	Description
Leadership	<ul style="list-style-type: none"> <li>• Director of state or federal health care agency</li> <li>• Head of state health department</li> <li>• Owner of an interprofessional practice</li> <li>• Executive Director of professional or health care organization</li> <li>• Dean of College or University</li> <li>• Head of a foundation or philanthropic organization</li> </ul>
Research	<ul style="list-style-type: none"> <li>• Head of Corporate Research and Development division</li> <li>• Academic bench or field researcher</li> <li>• Researcher employed by federal agency</li> </ul>
Health Care Administration	<ul style="list-style-type: none"> <li>• Health officer for school district</li> <li>• Director for health care management organization</li> <li>• Insurance officer for third party payers</li> <li>• Hospital administrator for acute and/or long-term care facilities</li> </ul>

yond, yet including, research and academia. Table II offers career options for dental hygienists with this advanced education. From a practical standpoint, the reality is such that if dental hygienists want to assume these leadership positions, they will be required to hold a doctorate for consideration for employment. Further, there will be limited opportunities for promotion (or promotion and tenure in academic settings) without this advanced degree.

## Skills Needed

Anticipating that dental hygienists with doctoral degrees will be working in interprofessional environments as leaders, administrators and researchers, additional skill sets are needed beyond clinical and technological areas. Expertise in business, administration and management, and grantsmanship are examples of areas that need to be fully developed. More importantly, these doctoral candidates will need to learn the arts of forecasting, decision-making, critical thinking and negotiation as visionaries for the profession.

## Program Considerations

Educators are encouraged to develop models for these graduate programs. Considerations include academic home of the program, delivery of courses (in-class, hybrid, online), support for international students, degree requirements, recruitment of faculty, development of dissertation committees and inter-institutional agreements and relationships for collaborative teaching to maximize limited resources. Program feasibility issues include funding, student recruitment, sustainability and approval of appropriate agencies and boards. Practical considerations include ensuring that the program can be completed in a reasonable and timely manner, students perceive a measure of success from the program and that the program is affordable and accessible.

## Justification

The challenge of creating doctoral degrees lies in the ability of dental hygiene educators to create the systems to support this advanced education. The desire has been known within the profession for 30 years. However, other health care providers who perceive dental hygienists to be “teeth cleaners” will not comprehend the creation of or need for these doctoral programs. Dental hygienists need to expand their skill sets to parallel those of other professionals if they are to function productively as credible, equal members of interprofessional teams. A terminal degree at the master’s level is insufficient to support dental hygienists in the settings projected in Table II.

While it is important to advance the status of the profession itself, it is also important to acknowledge the inherent value of attaining a doctoral degree for one’s own personal and professional achievement. The personal desire for advanced knowledge and skills also supports the professionalization of dental hygiene.

## Conclusion

While dental hygiene should be applauded for the significant growth in the number of dental hygienists with doctoral degrees, it must be recognized that these individuals have been forced to obtain degrees outside of their own discipline. The current health care environment lends itself well to the creation of doctoral degrees in this discipline, and raising the core of existing dental hygiene professionals to meet the ever increasing number of opportunities in health care. The legislative and educational climate facilitates creating models that increase access to care, developing collaborative health care teams and improving health outcomes. Dental hygienists with advanced degrees can be considered for expanded roles in multiple arenas wherein they were previously ineligible due to their limited experience and education.

As we move forward in this process of designing doctoral degrees, it must be pointed out that it is the doctorate of philosophy that will be the pinnacle for the profession and is the terminal graduate degree for any discipline, including medicine and dentistry. The authors advocate this particular degree as the starting point for the creation of doctoral education so that dental hygienists achieve the same playing field and opportunities as other professions for research funding and post-doctoral education.

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