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A Survey of Dental Hygienists' Attitudes and Support of the Proposed Dually Accredited
Advanced Dental Therapist

A thesis
presented to
the faculty of the Department of Allied Health Sciences
East Tennessee State University

In partial fulfillment
of the requirements for the degree
Master of Science in Allied Health

by
Deborah S. McBride
May 2014

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Keywords: dental hygiene practice; dental hygiene job satisfaction; midlevel dental practitioner

ABSTRACT

A Survey of Dental Hygienists' Attitudes and Support of the Proposed Dually Accredited Advanced Dental Therapist

by

Deborah McBride

The proposed dually licensed advanced dental therapy program, a graduate level curriculum created by the American Dental Hygienists' Association (ADHA) encompassing both dental hygiene and basic restorative procedures, creates an innovative career path in dental hygiene and increases the standing of the dental hygienist from an auxiliary role to an independent midlevel dental practitioner. Data were gathered via an online anonymous survey tool from Massachusetts registered dental hygienists to assess support of this proposed curriculum by practicing hygienists. Eighty-seven percent of survey respondents are in agreement that the scope of dental hygiene responsibilities should increase with level of education, and that the inclusion of limited restorative procedures should generate independent midlevel dental practitioner status.

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I thank my husband Norman J. McBride for his endless kindness and generosity.

DEDICATION

The completion of this work is a stepping stone in my life's journey, and is dedicated to my daughters Julia Michelle McBride and Alyssa Lauren McBride.

“Strive not to be a success, but rather to be of value.” Albert Einstein

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CHAPTER 1

INTRODUCTION

General health and personal well being are influenced by the level of function of one's teeth and surrounding oral structures (Bisset & Preshaw, 2010). A well functioning dentition is a positive influence; minimal oral function restricts major bodily activity and reduces quality of life (US Dept. of Health & Human Services, 2000, p. 89). Adequate oral function, "less pain, improved ability to eat and sleep, and positive social impact" (Klaassen, Veerkamp, & Hoogstraten, 2009, p. 273) are often achieved through the receipt of preventive and restorative dental procedures.

There is a growing concern that access to professional dental services is not distributed evenly across the United States despite the fact that "maintenance of oral health through a lifetime requires timely receipt of advice for self-care, preventive therapies, early detection and treatment of problems, and restoration of function" (US Dept of Health & Human Services, 2000, p. 79). "There are staggeringly wide gaps in people's ability to gain access to care in different communities around the country" (Radley & Schoen, 2012, p. 3). Patient-based barriers such as ability to pay and cultural traditions such as language, customs, dietary patterns, and behaviors and beliefs that clash with evidence-based health care practices hinder access to care (USDHHS, 2000, p. 7). An industry-based dilemma is the percentage of rural vs. urban practices, with rural areas offering fewer dental care providers than urban areas. The rural dental office often functions as a general practice. Urban specialty practices offer higher income and status than a rural general practice. Consequently dentists are choosing to practice in the urban setting (Rogers, Searle, & Creed, 2010).

Regardless of location, dental offices commonly employ a dental hygienist to provide preventive services to their patients. A portrayal of dental hygiene written by dental hygienists

“describes the profession as advanced and important and their main tasks focused on oral health promotion and particularly the prevention of oral diseases” (Stenman, Wennstrom, & Abrahamsson, 2010, p. 216). Colorado dental hygienist SherylAnne Warren (as cited in Seckman, 2013, p. 22) describes the dental hygienist as “provider of oral health and education to the young and old...the glue and intermediary between dental and medical worlds”.

Dental hygiene services are delivered under direct or general supervision of the hiring dentist, depending on the criteria of individual state dental boards. This prohibits the dental hygienist from independently providing preventive services to those without access to the traditional office setting. A possible resolution to this problem is “to develop alternative practice models and educational programs that provide care to vulnerable populations” (Keselyak, Simmer-Beck, & Gadbury-Amyot, 2011, p. 201).

The oral health objectives of Healthy People 2020 are a declaration to improve the accessibility of dental care to all American citizens (USDHHS, 2010, Oral Health). The success of this objective inadvertently depends on increasing the number of dental care providers to deliver care to those who, for so many years, have gone without. The United States Bureau of Labor Statistics (2012) anticipates a 38% growth in dental hygiene employment between the years 2010 and 2020, which translates to 68,500 more dental hygienists providing preventive dental services. Despite a projected increase in preventive dental care providers, preventive services will not resolve the restorative needs of the underserved populations who thus far have not had access to preventive care and are now in a state of dental dysfunction. The creation of a position uniquely qualified to deliver preventive, palliative, and restorative care in alternative practice settings such as the Advanced Dental Therapist (ADT) would increase accessibility to

restorative dental care. The ADT position also creates a dental hygiene career path, hopefully overriding the negative aspects of dental hygiene employment.

The Commonwealth of Massachusetts made an effort to resolve the issue of access to preventive dental care to underserved populations by amending the state dental hygiene practice act in 2009 to incorporate the public health dental hygienist (PHDH). The PHDH independently provides dental hygiene services such as prophylaxes, fluoride treatments, and sealant application, and education in self-care to underserved populations in nontraditional settings in collaboration with a licensed dentist. The PHDH is reimbursed directly from Masshealth, a state sponsored health insurance program. The PHDH does not qualify for reimbursement from private dental insurance programs. This insures that the PHDH provides services to underserved populations only; patients with either private dental insurance or access to a dental provider will continue to receive preventive and restorative care at the traditional setting of the private dental office (Massachusetts Board of Registration in Dentistry, 2010, p. 9).

The establishment of the PHDH is a step forward in achieving the oral health objectives of Healthy People 2020 via the provision of preventive services to underserved populations. It does not, however, resolve the issue of reducing the untreated dental decay of children, adolescents, and adults (USDHHS, 2010). In response, the Commission of Dental Accreditation (CODA), established in 1975 and the single nationally recognized agency by the United States Department of Education (USDE) to accredit dental and dental-related education programs conducted at the postsecondary level (American Dental Association, 2013a) and an arm of the American Dental Association (ADA), agreed in August 2011 to develop accreditation standards for the role of a midlevel dental provider (MDP), a position between hygienist and dentist trained in palliative and limited restorative care termed a dental therapist (DT). Implementation of DTs

would increase access to preventive and restorative care, create new jobs, and allow dentists to devote more time to advanced oral procedures, which they are best trained to address (Shaefer & Miller, 2011, p 740-741).

The American Dental Hygienists' Association (ADHA) developed dental therapy standards for a dental hygiene based dental therapy track, termed a graduate of such a program an advanced dental therapist (ADT), and presented this curriculum to CODA for approval. This master's level midlevel dental provider falls between the auxiliary function of the dental hygienist and the principal role of the dentist, as CODA requests, and creates a brand new dental hygiene career path. In addition to the full range of educational, preventive, and therapeutic dental hygiene services, the ADT will also provide minimally invasive basic restorative services such as, but not limited to, preparation and restoration of permanent and primary teeth, uncomplicated extractions, and limited prescriptive authority to aid in prevention, infection control, and pain management. The advanced education at the master's level is necessary to develop advanced practitioner competencies encumbered with additional legal liabilities, as well as earning respect, societal trust, and professional accountability (Stolberg, Brickle, & Darby, 2011).

Opposing the ADT program proposed by ADHA, the American Dental Association (ADA) has proposed an MDP called the dental therapist (DT). This is a bachelor's level program separate from dental hygiene, negating the potential dental hygiene career path. "The proposed standards are presented as an independent dental therapy track not related to prior dental hygiene education, though advanced standing is permissible" (American Dental Association, 2013b, p. 2). CODA has the authority to accredit any dental related curriculum, thereby choosing which of these proposed roles will be the new midlevel dental provider by voting to accredit its

curriculum. CODA encouraged input on this issue from concerned individuals or groups via email or mail until December 13, 2013.

Statement of the Problem

The purpose of this study was to assess the attitude and support of Massachusetts registered dental hygienists for the ADHA proposed midlevel provider known as advanced dental therapist (ADT), a midlevel dental provider position that would allow independent practice and delivery of preventive, palliative, and limited restorative care to underserved populations and share these findings with the Commission of Dental Accreditation (CODA), the single national committee with authority to set the policies and standards for a midlevel dental provider, before a final decision is made on an MDP curriculum. It could mean the difference between developing an unprecedented career ladder for dental hygiene graduates, merging delivery of preventive and restorative care in one position, or creating a program that is separate from dental hygiene altogether.

Research Question

The following research question guides this study:

What is the level of support for and interest in the proposed dually accredited Advanced Dental Therapist model among registered dental hygienists?

Significance of the Study

The significance of this research is the contribution of quantitative data regarding the level of support among Massachusetts registered dental hygienists for the proposed ADT role. These results will provide policy makers with statistics of registered dental hygienists' level of support for the accreditation of a dually licensed midlevel dental provider at the master's degree level.

Delimitations and Limitations

The information found during the literature review is delimited by the use of only one database. The study is delimited to one state, and to currently registered dental hygienists in that state. Dental hygiene students, hygienists from other states, and retired hygienists are not included in this research. Participation is limited to those who voluntarily choose to respond, and this limitation is an obstacle to hearing from all qualified respondents. Access to the internet and access to the survey during the 4-week time period of availability is also a delimitation.

Assumptions

It is assumed that dental hygienists support and value dental health, encompassing prevention, early detection, and treatment.

Operational Definitions

Dental hygienist: a licensed primary health care professional, oral health educator, and clinician who provides preventive, educational, and therapeutic services supporting total health for the control of oral diseases and the promotion of oral health (Wilkins, 2005, p. 3).

Oral health: a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity (WHO, 2012, Oral Health).

Preventive dental services: methods employed by the clinician and/or patient to promote and maintain oral health (Wilkins, 2005, p. 6).

Restorative dental care: clinical, therapeutic treatments designed to arrest or control disease and maintain oral tissues in health (Wilkins, 2005, p. 6).

Organization of the Study

This research is divided into five chapters.

Chapter 1 – introduction, a statement of the problem, research question, the significance of the study, delimitations and limitations, and definitions of terms.

Chapter 2 – literature review of the topic

Chapter 3 – methodology description

Chapter 4 –research results through detailed analyses of study findings

Chapter 5 –conclusions, discussions, and suggestions for future research.

CHAPTER 2

REVIEW OF LITERATURE

The literature review was conducted by means of the CINAHL data base of the Charles C. Sherrod Online Library, a component of the East State Tennessee University. Key words used in searching for appropriate articles included: access to dental care, dental hygiene job satisfaction, dental therapist, midlevel dental practitioner.

Positive Influences on Dental Hygiene Employment

The majority of dental hygienists are employed in private practice, operating in a climate-controlled indoor environment with numerous technologically advanced devices readily available, such as but not limited to digital radiographs, ultrasonic scaling machines, and computerized documentation. In addition, enticing characteristics of dental hygiene employment encompass “working while raising a family, good career with family, availability of jobs, flexible schedule, and good salaries” (Monson & Cooper, 2009, p. 130).

Negative Influences on Dental Hygiene Employment

Many dental hygienists are frustrated and discouraged with the limitations of their jobs and have the inopportune label of being the second most common occupation to feel unappreciated (PayScale, 2013). “Dental hygienists...cite physical exposures, no career advancement, boredom, and little control over job functions as reasons to consider leaving the profession” (Sanders & Turcotte, 2010, p. 457).

Organizational Stressors

Lack of control over the daily schedule and repetitive tasks are organizational stressors that abound in the private practice dental office (Yilpaa et al., 2002). In the majority of situation, the dentist is the sole owner of a dental practice. It is common for the dentist to make all

decisions, large and small, at all levels of the practice. The corporate hierarchy of a large company is absent in the small business atmosphere of a typical small dental practice. While this may sound appealing to hard working employees anxious to prove credibility, the dental office staff is not often given responsibility for decision making, even in regards to their daily tasks. This lack of control over work situations and intellectual stimulation contributes to the daily occupational stress of the dental hygienist (Sanders & Turcotte, 2010, p. 456-463).

The demand-control model of staff work environments analyzes the effect of the lack of control over work situations. A high source of stress surfaces when working at high demand, such as the hygienist with a heavily scheduled day, alongside low control, which is how the hygienist perceives the full-to-capacity schedule and repeated performance of limited tasks (Candell & Engstrom, 2012).

The dental hygienist is not alone in experiencing job dissatisfaction within the dental profession. It is also sensed by the entire dental staff, humorously diagnosed as Dental Dysfunction Syndrome (DDS) and Dental Madness Syndrome (DMD) (Rollins, 2010, p. 20). Rollins created these fictitious conditions to match the initials of the dental degrees of Doctor of Dental Surgery and Doctor of Dental Medicine. Symptoms of the fabricated “DDS” and “DMD” include the absence of written office policies and procedures and clear job descriptions; this leads to a breakdown in communication causing the staff to appear inept to their leader and each other, leading to a lack of respect and appreciation of each other as professionals.

Emotional Stressors

Emotional labor is an unfortunate inevitable element in the job performance of dental hygienists. “The term emotional labor refers to regulating one’s inner feelings and outward expressions for the purpose of fulfilling one’s work role and influencing clients or customers in a

particular way” (Sanders & Turcotte, 2010, p. 457). In dentistry there is an expectation that dental staff members will maintain a positive attitude while interacting with patients, whether or not in agreement with the prescribed patient treatment. From the dental hygiene perspective, this means presenting a united front with the prescribing dentist when speaking to the patient about treatment, even if the dental hygienist, through education and experience, does not agree with the treatment plan; the dental hygienist must follow along with the prescribing dentist’s treatment plan and provide the stated dental hygiene services.

Physical Stressors

The physical demands placed on dental professionals include repetitive movements that result in cumulative trauma in bones, muscles, and nerves, collectively called musculoskeletal disorders (MSD) (Sanders & Turcotte, 2010, p. 456). A heavy workload of both manual and ultrasonic scaling is a positive predictor for MSD; the more dental hygiene services delivered per day increases the risk (Morse, Bruneau, & Dussetschleger, 2010, p. 425). A survey of Nebraska dental hygienists indicated that 60% practicing hygienists reported symptoms related to upper extremity neuropathy such as pain, tingling, and numbness (Morse et al., 2010, p. 422).

In an effort to reduce MDS, dental operating stools and other dental equipment are available with ergonomic features and dental instruments are designed with thick handles to decrease shoulder and neck fatigue (Morse et al., 2010). “Despite increased awareness of MSDs among practitioners, the prevalence continues to be high due to the repetitive, forceful and sometime awkward nature of tasks inherent in dental instrumentation” (Sanders, 2010, p. 409). These physical ailments compel those suffering with MSD to take time off, reduce work hours, or change careers (Hayes, Taylor, & Smith, 2011).

Lack of Autonomy

The dental hygiene profession suffers a lack of autonomy and self-regulation, as the scope of dental hygiene practice is regulated by individual state boards of dentistry. Dental hygiene schools are accredited by the Commission on Dental Accreditation (CODA), an arm of the American Dental Association. Hence, by this designation, dental hygiene is not a true profession. The definition of a true profession is an entity that continuously enlarges its body of knowledge, functions autonomously in formulation of policy, and maintains high standards of achievement and conduct (Boyleston & Collins, 2012). The dental hygienist is paid by the dentist, while the dentist bills the patient or insurance companies for the services. The inability to be paid directly by the patient or insurance company is an obstacle to the dental hygienist wishing to deliver dental services “in settings outside of the traditional private practice, in settings such as medical facilities, community health centers, institutions, and agencies serving a specific population, to name just a few (Kerschbaum, 2013, p. 13.)

Dental Health Aide Therapist

The dental health aide therapist (DHAT) is an alternative to traditional dental hygiene and is licensed only in the state of Alaska by the Alaska Native Tribal Health Consortium, performing both preventive and clinical dental care to an otherwise underserved community (Alaska Native Tribal Health Consortium, 2013). Child caregivers and adults alike have indicated their satisfaction with receiving dental care from a DHAT, stating that DHAT services, communication skills, and chair side manner are comparable to those delivered by a dentist (Wetterhall, Burrus, Shugars, & Bader, 2011, p. 1836).

Registered Dental Hygienist in Alternative Practice

The Registered Dental Hygienist in Alternative Practice (RDHAP) is unique to the state

of California. Instead of treating patients in a traditional dental office setting, the RDHAP provides care to underserved populations in nontraditional settings that include residences of the homebound, schools, residential facilities, other institutions, and dental health professional shortage areas, as certified by the Office of Statewide Health Planning and Development in accordance with existing office guidelines (Dental Hygiene Committee of California, 2013). Practicing as an RDHAP grants an increased sense of independence due to the nontraditional settings. However, the work of the RDAHP is not truly independent; patients are required to have a written prescription from a licensed dentist in order to receive dental hygiene services (Adams, 2012).

The Proposed Dually Accredited Advanced Dental Therapist

The ADHA proposed advanced dental therapist (ADT) would receive education to provide “a varied skill mix within a dental team, allowing for a greater scope of service provision compared with a dentist alone, at a superior cost margin” (Buckley, 2010, p. 6) and find employment in alternative settings wherever there are underserved populations in need of dental care. Any locale where the hospital emergency room serves as a means to receive emergency dental care, often in the form of short-term pain relief through medication, has an underserved population. The use of the hospital emergency room for dental care is costly to the health care system and rarely resolves the dental issue (Nathe, 2013, p. 42).

An alternative care facility to the hospital emergency room is a Federally Qualified Health Center (FQHC) where comprehensive medical and dental care is provided to underserved areas or populations on a sliding fee scale (U.S. Health Resources and Service Administration, n.d.). Restorative and preventive dental services have been identified as the top two needed oral health services in community health centers such as FQHCs. One challenge of providing these needed services filling the vacant dental provider positions (America Dental Hygienists’

Association, n.d.). The proposed ADT can provide the much needed preventive and dental services in an FQHC.

Comparison to Nurse Practitioner

The ADT can be compared to the nurse practitioner (NP) as both are licensed service providers educated at a master's degree level. NPs deliver primary medical care, traditionally in underserved areas and to vulnerable populations, the same populations that the ADT would serve. NPs "are less expensive than physicians but have more extensive clinical training than nurses" (Ornstein, Smith, Herlands-Foer, Lopez-Cantor, & Soriano, 2011, p. 545).

Nurse practitioners are on the front lines of primary health care and in a unique position to address complex issues and increase the likelihood of a positive outcome (Camillo, Goodman, Thompson, & Imrie, 2012, p. 212). They have been an accepted medical provider in the state of Massachusetts since 2008, two years after the Massachusetts legislature passed health reform laws requiring all state residents to obtain medical insurance. A positive outcome of this law was the willingness for patients to seek medical care, now that insurance coverage was mandatory. The NP, with the authority to act as a primary care physician, facilitated the timely delivery of medical services to the influx of patients (Poghosyan, Lucero, Rauch, & Berkowitz, 2012). Making an analogy to the need for dental care, the licensure of the ADT would allow underserved populations to receive dental services in a timely manner.

NPs are most successful when the interprofessional medical team working with the NP accepts their work as valid (Wintle, Newsome, & Livingston, 2011). Conlon (2010) corroborated the validity of the NPs work by assessing practice behaviors and patient outcomes of NPs vs. physicians by evaluating glucose levels, blood pressure, weight loss, and disease management of diabetic patients treated by either a NP or a physician. "The evidence indicates that the

interventions by the diabetes NP are equal to, and in some cases better than, that of the physicians....Evidence indicates that primary care physicians lack the time, training and comfort level to counsel on behavioral change and create appropriate nutrition or exercise plans or lifestyle advice” (Conlon, 2010, p. 30). These findings concur with the opinion of family physicians that NPs fill in the gaps of care that they did not have the time to complete, particularly health promotion and education (Heale, 2012, p. 3).

As NP fees are typically less than those of a medical doctor, ADT fees are less than those of a dentist. A comparison study on the level and quality of care provided by Canadian dental therapists and dentists alleviated concerns about patient safety and treatment outcome. Study results indicated that the quality of restorations of both groups proved to be similar. The data also confirmed that the dental therapist had success in the treatment of dental emergencies and reduction in the number of emergencies through on-going care (Shaefer & Miller, 2011, p. 742).

Dental Hygienists’ Attitudes Toward the Proposed ADT

Given that the proposed ADT will provide dental hygiene and limited restorative services to underserved population in nontraditional settings, it seems plausible that dental hygienists, licensed to perform preventive dental hygiene services and schooled in the importance of public health, are key candidates. The Minnesota State Board of Dentistry is the first state to grant dual licensure to hygienists trained as an Advanced Dental Therapist (ADT). The Minnesota State Board of Dentistry also authorized the licensure of a Dental Therapist (DT), who may perform restorative and palliative therapy but cannot provide dental hygiene services, as the DT is not a graduate of dental hygiene school and cannot be licensed as a dental hygienist.

Lambert (2008) surveyed dental hygienists in Colorado, Kentucky, and North Carolina to determine the level of support and interest of dental hygienists in the ADHA proposed ADT. These

three states have distinctly different guidelines noted among the state's dental hygiene practice acts. The Colorado State Board of Dentistry allows dental hygienists to perform dental hygiene services under supervised and unsupervised conditions, in a dentist owned practice or an independently owned facility (Colorado Department of Regulatory Agencies, 2013). The state of Kentucky requires that the dental hygienist work under the general supervision of a dentist at all times, and that all dental hygiene services are authorized by that prescribing dentist unless the dental hygienist is also licensed as a public health dental hygienist providing dental hygiene services to underserved populations (Kentucky Board of Dentistry, 2013). North Carolina dental hygienists are restricted to providing dental hygiene services in a licensed dental facility under the supervision of a licensed dentist (NC State Board of Dental Examiners, nd). Despite the diversity of practice guidelines, hygienists in all three states responded positively in their support of the ADT.

Current Legislative Initiatives

The following list of individual state legislation, if approved, will allow the education and licensure of the advanced dental hygiene practitioner, defined as a provider of oral health care services, consisting of preventive, oral evaluation and assessment, educational, palliative, therapeutic, and restorative services.

Connecticut House Bill 6589, proposed in January 2013, will create a task force to explore the scope of practice for dental hygienists and other midlevel dental professionals (ADHA, nd).

Kansas Senate Bill 197 concerns itself with the licensing of dental practitioners who can perform dental hygiene and dental services under dental supervision (Kansas Legislature, 2013).

Maine House Bill LD 1230 establishes a licensure process and scope of practice for dental hygiene therapists and will set requirements by 2014 (State Track, 2013).

Massachusetts Bill H.274, filed on January 18, 2013, calls for An Act Establishing an Advanced Dental Hygiene Practitioner Level of Practice (The 188th General Court, 2013, Bill H.274).

The State Board of Dentistry in Minnesota authorized MDP licensure in 2009, in part due to the dwindling number of rural dental facilities due to the difficulties retiring dentists faced in convincing another dentist to buy the existing rural practice (Q & A with Dental Therapists, 2012).

New Hampshire Senate Bill 193 authorizes licensure of dental therapists who may perform dental services under the supervision of a currently licensed dentist (ADHA, nd).

New Mexico House Bill 367 sets in motion a state dental therapist act providing for regulation, certification, and scope of services (ADHA, nd).

North Dakota House Bill 1454 will study how to improve access to dental services, including the feasibility of using midlevel dental providers (North Dakota Legislative Council, 2013).

House Bill 273 of Vermont proposes to establish and regulate dental practitioners (Vermont State Legislature, 2010).

Washington State House Bill 1516 introduces a midlevel dental provider geared to provide dental services to the state communities with the greatest need (ADHA, nd).

Summary

There are multiple individual state legislative initiatives that anticipate the integration of an advanced dental hygienist or therapist into their existing state dental practice act. Promoting the dental hygienist from employee to independent midlevel provider creates a career path in dental hygiene similar to the career path in nursing that leads to nurse practitioner. This researcher feels it

is important to survey active dental hygienists and evaluate their attitude and support of the proposed dually accredited dental therapist.

CHAPTER 3

DESIGN AND METHODOLOGY

Overview

The purpose of this study was to assess the attitude and support of Massachusetts registered dental hygienists for the American Dental Hygienists' Association's (ADHA) proposed advanced dental therapist (ADT), a dually licensed dental provider of dental hygiene and dental therapy services, and share this information with the Commission on Dental Accreditation (CODA), a subsidiary of the American Dental Association (ADA) responsible for setting the educational curriculum and guidelines for all dental related programs taught at accredited educational facilities. The proposed ADT program has been presented to CODA; CODA committee members sought additional input from interested individuals or groups about this proposed master's level curriculum via mail or email by December 1, 2013 (ADHA, 2012).

Research Design

Data were collected from participants without intervention by means of an anonymous online survey. The collected data were analyzed to establish level of support of the ADT.

Population

A large sample size is necessary when research through survey is employed, when a large number of variables are anticipated to result in small differences, and when a large number of variables are being analyzed (Cottrell & McKenzie, 2011, p. 135). Homogenous sampling was fundamental to the outcome of the survey as the information extracted from the survey responses could only be supplied by a specific population, in this case dental hygienists for the reason of their familiarity with preventive and restorative dental procedures. The target population for this study was Massachusetts registered active dental hygienists. Dental hygienists in this state have a vested interest in the outcome of CODA's decision on the ADT curriculum due to the existence

of Massachusetts Bill H.274, filed on January 18, 2013, An Act Establishing an Advanced Dental Hygiene Practitioner Level of Practice (The 188th General Court, 2013, Bill H.274). This bill indicates interest in licensing a midlevel dental care provider. The scope of practice, educational guidelines, and program accreditation is determined by CODA; therefore, the importance of sharing quantitative data supporting the proposed ADT curriculum with the members of CODA is vital to the Massachusetts dental hygiene community, as well as the national dental hygiene community. It means the difference between developing an unprecedented career ladder for dental hygienists and separating dental therapy from dental hygiene.

Data Collection Procedure

The survey was accessible via an electronic link for an interval of 4 weeks in the fall of 2013. An email invitation to participate in the survey was sent to all email addresses maintained with the Massachusetts Dental Hygienists' Association (MDHA) as the MDHA newsletter editor frequently emails the Massachusetts dental hygiene community with details about events of interest. There is no expectation that every email on the mailing list belongs to a dental hygienist or a member of MDHA, although many do. Facebook pages of the Massachusetts Dental Hygienists' Association and the Southeastern Massachusetts Dental Hygienists Association also invited responses and directed willing participants to the survey link as well as direct emails to hygienists in acquaintance with the researcher. Application of the survey was directed by SurveyMonkey, an online survey software company (SurveyMonkey, 1999).

Survey Instrument Development

An original electronic survey served as the data collection instrument and was designed to determine knowledge, attitudes, and support of Massachusetts dental hygienists of the ADT

curriculum (See Appendix A). Survey questions regarding current dental hygiene registration insured that the data analysis would incorporate responses gathered from currently active registered Massachusetts dental hygienists, and withdraw responses from any other category such as student, retired, and inactive hygienists. Sociodemographics of participants were generated by collecting data on years in practice, type of specialty offering employment, etc. A Likert scale was used to let participants indicate their level of support for advancing the dental hygiene profession by educational degrees and patient responsibilities.

Strengths and Limitations of Research Design

The advantages are many in choosing an electronic questionnaire. Turnaround time of survey to participant and survey data back to researcher is relatively quick. There are no postage costs as internet access is available at the home for a monthly subscriber cost or free at a public library. Delivery dates are controlled by the researcher, so timing of participant invitation is at the researcher's advantage. "Responses received can be formatted to enter directly into Excel or a statistical package such as SPSS, thus eliminating manual data entry or scanning" (Cottrell & McKenzie, 2011, p. 201).

The online anonymous survey tool was a quick, simple, no cost method of gathering data from a large pool of participants. However, the anonymous element relies on the willingness of the target population to share an email address, check that email address for new correspondence, and to participate in anonymous online surveys, causing "concern that those who do complete electronic questionnaires might be very different from those who do not" (Cottrell & McKenzie, 2011, p. 201). Additional responses may have been collected if the survey was personally distributed to participants at an event such as a dental hygiene conference. This research survey

was composed of eight questions to keep participation time brief and inviting. A longer survey with additional questions may have produced different insights and perspectives of the issue.

Obstacles to participation in this particular survey include the level of concern and involvement on the issue of expanding career opportunities. The typical dental hygienist, qualified by state licensure and at the minimum, an associate degree, seeks employment in a traditional dental office. Climbing a proposed dental hygiene career ladder necessitates a return to higher education. Many universities do not incorporate dental hygiene courses into any 4-year curriculum, forcing a dental hygienist to either begin as an entry level student or limit their college search to those with a degree completion program for dental hygiene. This alone is enough to make a return to school difficult; the addition of the tremendous time and finances demanded of achieving a higher degree increases the obstacles. At present, the duties assigned to dental hygienists do not change with level of education, causing major concerns to dental hygienists as to the value, benefit, and opportunities available to those with a graduate education (Boyd & Bailey, 2011, p. 1033). For all these reasons a dental hygienist may not want to participate in a survey about a subject that seems unattainable. Wilbright et al. (2006) determined hospital workers over the age of 50 and who had graduated prior to 1984 scored lower in computer proficiency than their younger coworkers in an urban hospital. Based on that finding, dental hygienists over the age of 50 may have less of a chance of responding to the electronic questionnaire than their younger counterparts. This introduces a potential age bias because the older dental hygienist may have a different outlook on advanced dental therapy than those who are younger, yet it may not be feasible to gather their input.

Informed Consent Considerations

By voluntarily responding to the questions on a survey, the participants give their informed consent. Informed consent “is acceptable in place of an actual consent form” (Cottrell & McKenzie, 2011, p. 109) and is inferred from signs, actions, or facets or by inaction or silence (Hill & Hill, 2005). Informed consent information was revealed with the instructions on accessing the electronic survey link (Appendix A). Institutional Review Board (IRB) approval was granted prior to data collection. East Tennessee State University’s IRB approval number for this study is c1013.22e. The contact information for the IRB, chairperson of this thesis committee, and researcher was included should be there be any questions from participants.

Research Question

1. What is the level of support and attitude in the proposed ADT curriculum model among registered dental hygienists?

A Priori Hypothesis

This researcher attended an ADHA-CODA panel discussion and watched and listened to dental hygienists from around the United States express positive comments and opinions on the ADHA proposed ADT curriculum (ADHA Annual Session, June 22, 2013) and subsequently formed this priori hypothesis:

Dental hygienists support and value dental disease prevention, early detection, and treatment, all of which influence oral health. Dental hygienists support the formation of a midlevel dental provider curriculum that requires a dental hygiene degree prior to admission requires maintenance of the dental hygiene degree along with the advanced training degree, resulting in a dually licensed dental care provider.

CHAPTER 4
DATA ANALYSIS

The purpose of this study was to assess the attitude and support of Massachusetts registered dental hygienists for the proposed midlevel dental provider known as the advanced dental therapist (ADT) and shares these findings with the Commission of Dental Accreditation (CODA) by its December 1, 2013, deadline to accept comments before convening in 2014 to further discuss the issue.

Participants

Results of the survey indicate 45%, or nearly half, of the respondents have 25 or more years of dental hygiene experience. The number of years of experience was divided fairly evenly for the rest of the respondents (Table 1).

Table 1. Years of Experience in Dental Hygiene

Years of Experience	(n=119)
1-5	13
6-10	14
11-15	14
16-20	13
21-25	11
25+	54

At slightly less than half, 45% of the respondents earned an associate degree as their highest level of education. A bachelor's degree has been earned by 37%, while 18 % have earned a master or doctorate degree (Table 2).

Table 2. Highest Level of Education

Level of Education	(n=119)
Associate Degree	53
Bachelor Degree	44
Master Degree	21
Doctorate	1

The survey question concerning active registration as a dental hygienist in Massachusetts elicited a 100% positive response. However, not all respondents are currently employed as hygienists. The vast majority of respondents (93%) are currently working as dental hygienists, while 6% indicated not working as a dental hygienist (Table 3).

Table 3. Employment Status

Currently Employed as a Dental Hygienist	(n=120)
Yes	112
No	8

Inquiry into what type of dental practice offered employment revealed that 100% of the respondents participated in this question, even though less than 100% indicated being currently employed as a dental hygienist. This can be explained by the inclusion of a category labeled “other”. Twenty-seven percent of the respondents placed themselves in the “other” category, with 30% of those working in education. Dental hygienists commonly find employment in more than one office, answering this question with multiple answers resulting in a score over 100%. The majority of dental hygienists are employed by a general practice (89%) followed by “other” at 28%. Employment in the dental specialties of pediatrics and prosthodontics follow at 11% and 9% respectively, with oral surgery maintaining the lowest employment position at 0.01% (Table 4).

Table 4. Types of Dental Practices Offering Employment

Dental Practice Category	(n=120)
General	107
Pediatric	14
Periodontics	32
Prosthodontics	11
Oral Surgery	1
Orthodontics	5
Other (Multi-Specialty Practice=5) (Education=10) (Public Health=15) (Nursing Home=3)	33

As a result of the limited access to professional dental care in certain areas, volunteer organizations have formed to provide an avenue for licensed dental providers to deliver dental services to those living in low to no access areas. Two thirds, or 66%, of the survey respondents report a history of volunteering their time to provide professional dental services for underserved populations (Table 5). Seventy-seven of the 79 participants who volunteered their professional services also shared details about their volunteer work. The majority had provided dental hygiene care such as fluoride treatments and sealant applications to children. There was mention that the child population that received the treatments was underprivileged and did not have access to care. One respondent indicated leading a fluoride rinse program at the elementary school level. There was involvement with Girl Scout programs for Health and Dental Badges and with children during dental health month. Others indicated providing education and oral cancer screenings in public settings. Six responses indicated volunteering internationally. The words “uninsured”, “homeless”, “under privileged”, and “underserved” were used frequently. One participant expressed satisfaction from volunteering: “I enjoy helping others with their dental needs”.

Table 5. History of Volunteering Professional Dental Services

	(n=119)
Yes	79
No	40

Results

An online survey tool was the vehicle for gathering data from Massachusetts registered dental hygienists, all over the age of 18. One hundred twenty responses were collected. Due to

the anonymous aspect of the data collection, it is not possible to determine relationships between variables.

The final three survey questions were scored on a 6 point Likert scale, ranging from completely agree to completely disagree. When asked if restorative procedures should be added to the dental hygienists' range of skills in order to create a career path to an independent standing, 102 of the 119 (86%) participants agree slightly, mostly, or completely. Sixteen of the 119 respondents shared a personal insight, raising the issues of education vs. competency; time constraints on appointment time; need for business knowledge; and the value of separating preventive services from restorative, implying that one should attend dental school if there is a desire to provide restorative services.

The question regarding the dually licensed midlevel provider as the best way to provide dental care to underserved populations received a 90% response rate: 108 of the 120 respondents chose to indicate an opinion. Ninety-four of the 108 responses, or 87%, indicated a positive response in the range of slightly to completely agree. However, quite a few cautionary remarks were included with the responses, commenting on the current saturation of the Massachusetts job market with dental hygienists. This comment regarding the wording of permits and licenses shows some skepticism: "The proposed wording says MA BORID could allow this practice. The Public Health Hygienist established also thought this, but paperwork, permits, etc really did not allow access to care for very many underserved populations".

The last question solicited support for a dental therapy program that does not require dental hygiene licensure as a prerequisite to the program. Eighty-five of the 107, or 79%, respondents disagreed with the program, including thoughts regarding the need to keep dental

care in the hands of professionals, creating analogies to the medical field and educated providers, and renouncing on-the-job training.

Discussion

The variables surrounding the participants of this online survey indicated that Massachusetts registered dental hygienists have differing backgrounds in highest level of education, work sites, years of experience, types of dental practices offering employment, and a history or desire to volunteer dental services. Despite such differences, the majority of participants agree that a midlevel provider, a dental therapist, should also be a licensed dental hygienist, safeguarding the educational background and experience in delivering preventive services. There was a cautionary comment regarding potential wording of licensure requirements and responsibilities for an advanced dental therapist, citing the Public Health Dental Hygienist (PHDH), which was established for providing care to underserved populations, was not successful at resolving the issue of access to care due to paperwork, permits, etc. that really did not allow access to care for very many underserved populations.

Data analysis of responses of an electronic survey of Massachusetts registered dental hygienists demonstrated a positive support for the proposed dually accredited dental therapist.

CHAPTER 5

CONCLUSIONS, DISCUSSION, AND SUGGESTIONS FOR FUTURE RESEARCH

The purpose of this study was to assess the attitude and support of Massachusetts registered dental hygienists for the American Dental Hygienists' Association (ADHA) proposed midlevel dental provider known as an advanced dental therapist (ADT), a position that would allow independent delivery of preventive, palliative, and limited restorative care to underserved populations. Ultimately, these findings were shared with the Commission of Dental Accreditation (CODA), the single national committee with authority to set the policies and standards for a midlevel dental provider. It is this researcher's hope that her input, along with input from numerous other individuals and groups, helps influence CODA to set curriculum guidelines for a dually licensed advanced dental therapy curriculum.

Conclusions

Age: not a limiting factor

A weak point of this survey was potentially limiting the respondents to those under age 50. This is based on the conclusions of Wilbright et.al. (2006) that the age of a hospital worker influences computer proficiency: the higher the age, the lower the ability of computer proficiency. Dental hygiene practice does not typically take place in a hospital but in a medical office. While this online survey did not require knowledge of the age of each respondent, it did show years of experience in the dental hygiene field. The age of respondents can be incorrectly assumed by corresponding years of experience to an age in years that increases with the years of experience. However, with 45% of the respondents indicating 25 or more years of experience in the dental hygiene field combined with a minimum age of 18 to graduate from hygiene school, it can be assumed that these individual have reached the fourth or fifth decade of their life. The 9%

of respondents indicating 21-25 years of experience likely fit into this age category as well. Therefore, 54% of the respondents are likely near, at, or over the age of 50. This survey has negated the assumption of older workers not participating in online surveys due to lack of computer proficiency.

Small percentage of respondents

The willingness of dental hygienists to participate in a survey regarding a potential change in the career path of dental hygiene was an initial concern and a valid worry; of the thousands of emails that were sent, only 120 surveys were completed. Within this small unit, 89% chose to respond to the questions regarding advanced dental therapy. Although support of the proposed advanced dental therapy curriculum was high, the analysis of level of support was based on a very small percentage of potential respondents. The small percentage of survey respondents may indicate that there is little or no support or interest by dental hygienists in a dually accredited advanced dental therapist. It may also indicate that a better means of communication is necessary to broaden the participation.

Discussion

Dental hygiene procedures, controlled by individual state dental practice acts, have consistently focused on oral health through preventive practices. “The current dental hygiene curriculum has developed over time--created, debated, and honed by dental educators, who are typically dental hygienists themselves and aware of what skills and knowledge are required for practice” (Q&A with Dental Therapists, 2012, p. 23). The curriculum may differ from one state to another, as each state has its own dental hygiene practice guidelines, but must always adhere to the guidelines set by the Commission on Dental Accreditation (CODA).

The American Dental Hygienists' Association (ADHA) has contacted CODA and advocated for a dental hygiene based advanced dental therapy curriculum, a dually licensed master's level position. In the past year CODA has actively encouraged concerned individuals and groups to contribute opinions, perspectives, and insights pertaining to the proposed advanced dental therapy standards by email, mail, or panel discussion with a deadline of December 1, 2013. The Federal Trade Commission (FTC), which endeavors to "prevent business practices that are anticompetitive" (Federal Trade Commission, n.d., Mission, para. 1) and to "yield high-quality products at low prices and encouraging efficiency, innovation, and consumer choice" (Federal Trade Commission, n.d., Vision, para. 1) was one of the concerned groups that made contact with CODA over this issue. The FTC contacted CODA, voicing concerns "that the proposed CODA accreditation standards include language that may unnecessarily constrain the discretion of states to determine dental therapists' scope of practice and authority. In addition, the comment explains that the language may deter innovation in dental care education" (FTC Staff Submits Comments, 2013, para. 5). This researcher, born and brought up with "a government of the people, by the people, for the people" (Lincoln, 1863, The Gettysburg Address) attitude was compelled to contact CODA individually and advocate for the dually licensed advanced dental therapy track by referencing the data gathered in this study, citing the support of currently registered dental hygienists in Massachusetts for a dually licensed curriculum for advanced dental therapy (Appendix C). CODA will convene in early 2014 to deliberate on the issue of the dental therapy curriculum.

Suggestions for Future Research

Solving the issue of limited access to professional dental care may take different forms in different states, as dental practices differ state to state. With a focus on advanced dental therapy

as one way of breaking the barrier to access, and assuming that dental therapy is incorporated into multiple state dental practice acts, the following suggestions are topics of future research:

1. Replication of this research in another state.
2. Investigation of the barriers to higher education by dental hygienists
3. Measurement of the success of dental therapy in reducing the number of untreated caries in an underserved population.
4. Salary comparison of the dental hygienist and the dental therapist.
5. Interest and motivation of the working dental hygienist vs. the dental hygiene student in pursuing advanced dental therapy education.

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APPENDICES

APPENDIX A

INTRODUCTORY LETTER TO SURVEY

Dear Colleague,

I am a Massachusetts dental hygienist working toward my master's degree in Allied Health. As part of my graduate research, I am asking Massachusetts dental hygienists about their support for the proposed ADHA Advanced Dental Therapist (ADT) curriculum.

Your participation in this short research survey is voluntary, anonymous, and will take less than 10 minutes. In order to participate, you must be 18 years or older and a dental hygienist with an active license in the state of Massachusetts. You will not be compensated for your participation. There are no anticipated risks nor are there personal benefits to participating in this survey.

Your answers will not be counted unless you click on the submit button at the end. You may withdraw from the survey at any time prior to submitting the survey. You are not waiving any legal rights by participating in the survey.

I can be reached through email: mcbride@goldmail.etsu.edu or phone: 978-551-2045.

My faculty advisor Dr. Deborah Dotson can be contacted at dotsond@etsu.edu.

If you have questions about your rights, please contact the Institutional Review Board (IRB) at East Tennessee State University at 423-439-6053.

By clicking on the survey link you are granting voluntarily consent to participate and are willing to proceed with the survey. The survey will close on November 27, 2013.

<https://www.surveymonkey.com/s/ZPSHLQM>

With sincere thanks,

Deborah McBride, RDH

APPENDIX B

THE SURVEY

1. How many years of experience do you have as a dental hygienist (adding together years in Massachusetts and any other state, if applicable)?

25+ years ▼

2. Are you currently a licensed dental hygienist in Massachusetts?

▼

3. Are you currently working as a dental hygienist in Massachusetts?

- Yes
- No

4. What is your highest level of education?

▼

5. What type of practice(s) have you worked in? Please check all that apply:

- General
- Pediatric
- Periodontic
- Prosthodontic
- Oral surgeon
- Orthodontist
- Other (please specify)

Text input field for specifying other practice types.

6. Have you ever volunteered your professional dental hygiene services? If so, what was the reason you were a "Dental Volunteer" and what did you do?

Text input field for describing volunteer experience.

Massachusetts Bill H.274, filed on January 18, 2013, calls for An Act Establishing an Advanced Dental Hygiene Practitioner Level of Practice (The 188th General Court, 2013, Bill H.274). If passed, this means that the Massachusetts Board of Dentistry could permit the opening of educational programs for a midlevel dental care provider. Such programs must follow the guideline set by the Commission on Dental Accreditation (CODA).

CODA is considering one of two career tracks: the Advanced Dental Therapist (ADT) and the Dental Therapist (DT).

The Advanced Dental Therapist (ADT) will be a licensed dental hygienist educated at the Master's degree level. In addition to the full range of dental hygiene clinical services, ADTs will administer minimally invasive restorative services and will have limited prescriptive authority. ADTs will be educated in health promotion and disease prevention, provision of primary care, case and practice management, quality assurance, and ethics, which will provide a comprehensive approach to the delivery of oral health care services.

The Dental Therapist (DT) will not require a dental hygiene degree for admission to this bachelor level program. DTs will administer minimally invasive restorative services and will have limited prescriptive authority.

7. Please choose one of the following statements, supporting either ADT or DT (ADT requires a degree in dental hygiene and a Master's Degree; DT is a bachelor level program with no dental prerequisite).

- The ADT curriculum is advantageous because it trains one individual to provide both preventive and restorative dental care at the same time, making the most of the limited time available with under-served populations.
- The DT curriculum is advantageous because not only is it a shorter training period than the ADT, getting providers out in the field quicker, it teaches only restorative procedures.

Comments 

8. The scope of dental hygiene should increase with level of education, and include restorative procedures, creating a career path to an independent advanced standing

- Agree
- Disagree

Comments 

APPENDIX C

ESSAY SENT TO THE COMMISSION ON DENTAL ACCREDITATION

Access to professional dental services is not distributed evenly across the nation causing a need to depart from the traditional delivery of dental care and a move toward creation of a new delivery system. The percentage of rural vs. urban practices is uneven, with rural areas offering fewer dental care providers than urban areas. (Rogers, Searle, & Creed, 2010). In places that have no or few dental facilities, the use of the hospital emergency room for dental care is costly to the health care system and rarely resolves the dental issue (Nathe, 2013, p. 42).

Prevention is better than the cure, and that means education and early intervention. In the words of Colorado dental hygienist SherylAnne Warren, the dental hygienist is a “provider of oral health and education to the young and old...the glue and intermediary between dental and medical worlds” (Seckman, 2013, p. 22).

The Public Health Dental Hygienist (PHDH), approved in my home state of Massachusetts, helps to achieve the oral health objectives of Healthy People 2020 via the provision of preventive services to underserved populations who may not be able to travel to a traditional dental facility (USDHHS, 2010). By 2020, there is an anticipated a 38% growth in dental hygiene employment which translates to 68,500 more dental hygienists in the workforce providing preventive dental services (USBLS, 2012).

However, increasing the access to preventive dental care addresses only part of the equation; the restorative needs of the underserved populations may progress to a state of dental dysfunction without timely intervention. The solution: the uniquely qualified Advanced Dental Therapist (ADT), a dually accredited position comprised of a dental hygiene degree and a dental

therapist degree, licensed to deliver preventive, palliative and restorative care in alternative practice settings.

As a dental hygiene educator and practicing dental hygienist, I believe that a dental hygiene degree should be a prerequisite for ADT education and a dual licensure be maintained to provide preventive and basic restorative services.

The advanced instruction at the master's level is necessary to develop advanced practitioner competencies encumbered with additional legal liabilities, as well as earning respect, societal trust and professional accountability. In addition to the full range of educational, preventive, and therapeutic dental hygiene services learned in dental hygiene school, the ADT will also provide minimally invasive restorative services such as, but not limited to, preparation and restoration of permanent and primary teeth and uncomplicated extractions, and limited prescriptive authority to aid in prevention, infection control and pain management (Stolberg, Brickle, & Darby, 2011). These services are meant to be delivered in a timely fashion to underserved populations in an effort to avoid advanced dental disease and its complications. These are patients that are not currently receiving dental care, so this proposal does not “pull away” patients from the traditional dental office.

Massachusetts Bill H.274, filed on January 18, 2013, calls for An Act Establishing an Advanced Dental Hygiene Practitioner Level of Practice (The 188th General Court, 2013, Bill H.274). Because Massachusetts, my home state, is considering the implementation of a dental therapy curriculum, I feel compelled to speak out and ask for a vote for a dually licensed Advanced Dental Therapist. I have gathered data via an anonymous online survey directed exclusively to Massachusetts dental hygienist to determine if they held the same opinion as me. Eighty six percent of Massachusetts dental hygienists responded positively that Advanced Dental

Therapist should practice as hygienists first, and then add additional responsibilities of palliative and restorative care of dental therapy, citing the strong emphasis on disease prevention and health promotion in the dental hygiene curriculum. Lambert (2008) also surveyed dental hygienists in Colorado, Kentucky and North Carolina to determine the level of support/interest of dental hygienists in the proposed dually licensed ADT. These three states have distinctly different guidelines noted among the state's dental hygiene practice acts, ranging from supervised, general supervision, and independent practice (Colorado Department of Regulatory Agencies, 2013)(Kentucky Board of Dentistry, 2013)(NC State Board of Dental Examiners, nd). Despite the diversity of practice guidelines, hygienists in all three of these states also responded positively.

On behalf of the hygienists who participated in the above mentioned surveys and me, I ask for the approval of the ADT dually licensed curriculum so that all citizens enjoy a life with optimal dental health, allowing the underserved to focus on early detection and prevention of dental issues and away from a disease focused model of care. "Maintenance of oral health through a lifetime requires timely receipt of advice for self-care, preventive therapies, early detection and treatment of problems, and restoration of function"(USDHHS, 2000, p. 79).

Thank you.

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