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The Advanced Dental Hygiene Practitioner: An Exploration of the Patient Perspective Regarding
the Advancement of a Mid-level Dental Provider

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

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

by
Jacqueline M. Burgess

August 2016

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provider

ABSTRACT

The Advanced Dental Hygiene Practitioner: An Exploration of the Patient Perspective Regarding
the Advancement of a Mid-level Dental Provider

by

Jacqueline Burgess

The purpose of this study was to examine patient attitudes and opinions regarding the advancement of a mid-level dental provider, such as the ADHP, in an effort to better understand the perceptions of those who may one day be in a position to receive care from this type of provider. In this quantitative study, I analyzed the differences between those with and without access to dental care and evaluated differences among respondents based upon their socioeconomic and demographic attributes. I collected data from patients treated at Mt. Juliet Family & Cosmetic Dentistry and at the Coweta Samaritan Clinic via a 17-item questionnaire. Most respondents would be willing to accept treatment from someone in this role. The majority of respondents also believed it would be a positive step towards meeting the needs of the uninsured and underserved. Demographic data had no significant impact on their opinion of this role.

DEDICATION

I lovingly dedicate this work to my husband, Jason, who has provided unwavering support throughout this entire process. Your continual encouragement and confidence in my abilities means so much to me. You have shouldered many burdens along the way and I truly mean it when I say, I could not have done this without you. I adore doing life with you.

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Mimi, I am humbled by the way you have always made my successes in life your priority. You have always thought highly enough of me to expect a lot out of me and even as an adult, I long to make you proud. I know I am merely one of many who have been profoundly impacted by the way in which you live your life and it is upon this which I attribute every accomplishment.

I am extremely fortunate to be surrounded by an incredible support system. Thank you to my parents, in-laws, classmates, family and friends. So many of you offered encouragement,

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CHAPTER 1

INTRODUCTION

As advancements in dental procedures and technology regularly emerge, access to dental care remains a problem for many Americans. Barriers to care such as insufficient income, insurance status, health literacy, availability of dentists in poor and rural areas, and an inadequate number of dentists participating in Medicaid programs contribute to the number of underserved each year. To further exacerbate the situation, the American Association of Dental Schools projects the number of available dentists to decline (Collier, 2009). The American Student Dental Association described the severity of this issue when they stated, “As of January 1, 2014 there are 4,800 Dental Health Professional Shortage Areas (HPSA). It would take 7,100 practitioners to meet every HPSA community's need for dental providers (a population to practitioner ratio of 5,000:1)” (2013, para. 3).

Although the number of dentists may be waning, the United States Department of Labor (2012) expects the dental hygiene profession to grow by 37.7% between the years 2010 and 2020. Advancement of the dental hygiene profession was identified as a plausible solution to improve access to care at the 2006 National Oral Health Conference due to the

projected growth in workforce, projected growth in educational programs, market forces creating advanced practice, advanced education already in place, [avoidance of] duplication in education and training, potential for cost-savings in cross training, [and] opportunity to revise efficiency in delivery of oral health care (Calley et al., 2006, p. 8).

Subsequently, the American Dental Hygienists' Association (ADHA) proposed the creation of the Advanced Dental Hygiene Practitioner (ADHP) in 2004 in an effort to

meet the needs of an underserved population and to reduce health care disparities.

In 2008, the ADHA Board of Trustees adopted a set of competencies that served to guide the creation of the educational framework of the ADHP role. The competencies included “provision of primary oral healthcare, healthcare policy and advocacy, management of oral care delivery, translational research, and professionalism” (American Dental Hygienists’ Association, 2008, p. 9). This structure became the model upon which individual states could establish licensure requirements and scope of practice guidelines for mid-level provider roles such as the ADHP.

In 2009, several organizations in Minnesota united in an effort to push the ADHP through legislation. While many compromises were made to the original ADHP model, Minnesota became the first state to create mid-level dental roles known as dental therapists (DT) and advanced dental therapists (ADT) (American Dental Hygienists’ Association, 2012c). Likewise, in April 2014, the state of Maine legislature established its own version of the ADHP model referred to as a dental hygiene therapist (DHT) with the passage of bill LD 1230 (Maine State Legislature, 2014). Several additional states are currently working on legislation changes to expand the roles of the dental hygienist. While the American Dental Association (ADA) (2009) continues to express its opposition to the creation of a mid-level provider, the idea of implementing this type of practitioner is continuing to gain favor.

Statement of the Problem

Access to dental care has been, and continues to be, a major problem throughout the nation. A glance at the extensive research on the underserved will yield a plethora of disheartening statistics:

- More than one third (36.8%) of poor children ages 2 to 9 have one or more

untreated decayed primary teeth, compared to 17.3% of non-poor children.

- Uninsured children are half as likely as insured children to receive dental care.
- Low-income and minority children have more dental cavities than other children.
- Poor Mexican-American children ages two to nine have the highest proportion of untreated decayed teeth (70.5%), followed by poor non-Hispanic black children (67.4%).
- Poor Mexican-American and non-Hispanic black children see the dentist less often than other children.
- Less than one of every five poor children enrolled in Medicaid receives preventive dental services in a given year, even though Medicaid provides dental coverage for enrolled children
- In the 50-69 age group, non-Hispanic blacks (31.2%) are more likely than Mexican Americans (28.2 %) or non-Hispanic whites (16.9%) to have at least one tooth site with periodontal disease.
- In the age category 70 years and over, the percentages rise to 47.1, 32.0, and 24.1 for the three groups (Agency for Healthcare Research and Quality, 2003, para. 8, 10).

Ironically, those who are in the greatest need of care are oftentimes the most likely not to receive it (Sanders, 2012, p. 2). For example, “American Indian and Alaska Natives have the highest rates of dental disease, and rates of untreated decay are also significantly higher among Mexican Americans and African Americans than among those who are White” (Sanders, 2012, p. 2). Yet, minorities such as these as well as the poor, elderly, and uninsured/underinsured continue to be plagued by limited/no access to the care they so desperately need.

The ADHP framework was created by the ADHA in an effort to improve access to care. Even so, although ADHPs may be adequately educated and possess the skills to provide competent care, they cannot make a difference unless patients are willing to take advantages of their services.

Purpose of the Study

The purpose of this study was to examine patient attitudes and opinions regarding the advancement of a mid-level dental provider, such as the ADHP, in an effort to better understand the perceptions of those who may one day be in a position to receive care from this type of provider.

Research Questions

The following questions guided this research:

1. How do current dental patients and patients with limited access to care perceive the ADHP?
2. Are there differences among age groups, genders, ethnicity and socioeconomic status regarding patients' perceptions of the ADHP?
3. Are patients with limited access to care more willing to receive restorative care from a mid-level provider than those receiving regular dental care from a licensed dentist?

Significance of the Study

Due to the increasing number of legislative changes and the momentum of the application of the ADHP model in the United States, the reality of a mid-level dental provider role in every state is certainly not unfathomable, however research has primarily focused on the attitudes of practicing dental hygienists (Anderson & Smith, 2009; Lambert, George, Curran, Lee, & Shugars, 2009). This study will add to the body of knowledge of how patients perceive a mid-level provider in dentistry. Additionally, since the ADHP model was created to address a

specific need, it would be advantageous to understand the level of support of the intended population.

Delimitations and Limitations

This study was delimited to two groups of potential ADHP patients: those who maintained dental insurance and were receiving regular dental care and those with no insurance and limited access to care.

Limitations included a relatively small sample size and a narrow population size of two counties in Tennessee and Georgia; therefore, the findings may not be generalizable to a wider population. Additionally, the data were collected via self-report questionnaires which can lack validity based on the individual's interest, sincerity, interpretation, and understanding of the information.

Definition of Terms

Access to care- having “the timely use of personal health services to achieve the best health outcomes” (Agency for Healthcare Research and Quality, 2009, para. 2).

Advanced Dental Hygiene Practitioner (ADHP)- The ADHA's model of “a mid-level oral health provider [created] to provide much needed restorative dental care to underserved populations” (American Dental Hygienists' Association, 2012b, para. 1).

Advanced Dental Therapist (ADT)- a midlevel dental provider role in the state of Minnesota, which more closely “follows the ADHP model” (Emmerling & Standley, 2011, p. 30). The scope of practice includes general supervision in collaboration with a practicing dentist (Minnesota Board of Dentistry, 2013).

Dental Therapist (DT)- a mid-level dental provider role in the state of Minnesota, which “follows a model set forth by Minnesota dentists” (Emmerling & Standley, p. 30). This type of

provider may operate under indirect and general supervision (Minnesota Board of Dentistry, 2013).

Socioeconomic status- “A composite measure that typically incorporates economic, social, and work status. Economic status is measured by income. Social status is measured by education, and work status is measured by occupation” (Centers for Disease Control and Prevention, 2013, para. 19).

CHAPTER 2

REVIEW OF THE LITERATURE

Complications While Attempting to Improve Access to Care

The dental hygiene occupation of today differs greatly from how it appeared when it was established in the early 1900s. Over the years, changes have continued to occur that have resulted in, but are not limited to, the modification of practice acts in certain states that allow dental hygienists to administer local anesthesia, the establishment of various expanded functions programs in dental hygiene education, and a general lessening of supervision laws that permit dental hygienists to work without a dentist present (American Dental Hygienists' Association, 2012a). Naturally, modifications such as these have been carried out in an effort to make a positive impact on access to care for underserved patients. However, even after advancements are successful, justification of previous legislation decisions and their impact on the future is often a constant struggle.

In 1987, the state of Colorado made history when legislation changes allowed a dental hygienist to become a “proprietor of a place where supervised or unsupervised dental hygiene is performed” and granted them the right to “purchase, own, or lease equipment necessary to perform supervised or unsupervised dental hygiene” (Astroth & Cross-Poline, 1998, p. 13). Although this was a major step forward for the dental hygiene profession, in 2005, the ADA issued a report that questioned the effectiveness of this decision stating, “Of the more than 2,700 licensed hygienists in Colorado today, just 20 are practicing without a dentist’s supervision in 17 stand-alone practices across the state” (Berry, 2005, para. 2). They also criticized the areas in which the hygienists in the study opened their independent practices declaring they were “located in affluent or middle-income areas where their effect on access to care for the indigent

is negligible” (Berry, 2005, para. 2).

Consequently, the ADHA, along with the Colorado Dental Hygienists’ Association (CDHA), issued formal responses that defended the legislation as well as questioned the accuracy of the ADA’s report. After reinforcing their mission of improvement of access to care, they declared, “independent dental hygiene practice is a modest part of a greater solution to a much larger and more complicated access to oral health care crisis” (American Dental Hygienists’ Association, 2005, p. 12). The ADHA also went on to identify considerable flaws within the ADA’s report such as the misuse of critical terminology, numerous limitations, and the omission of a portion of the population that affected the validity of the study (American Dental Hygienists’ Association, 2005; Wilkinson, 2005). For instance:

Excluded from the Colorado study findings was the fact that 64 dental hygienists are participating Medicaid providers. In addition, these dental hygienists served over 2,000 children from February 2003 to January 2004. This was more than double the number of children seen from February 2002 to January 2003 (American Dental Hygienists’ Association, 2005, p. 12).

Access to Care

Although oral healthcare continues to advance due to developments in research and technology, a portion of the population does not benefit from this progress due to limited or no access to care. In 2000, Surgeon General David Satcher released the first ever report concerning oral health that indicated a desperate need to address the issue of access to care in our country. In his *Oral Health in America: A Report of the Surgeon General*, he brought into focus the “profound disparities that affect those without the knowledge or resources to achieve good oral care” (National Institute of Dental and Craniofacial Research, 2000, para. 2).

Many at-risk groups were identified including poor Americans, children, the elderly, members of racial and ethnic groups, and those with disabilities. “Socioeconomic factors, such as lack of dental insurance or the inability to pay out of pocket, or problems of access that involve transportation and the need to take time off from work for health needs” were determined to be major barriers to care (National Institute of Dental and Craniofacial Research, 2000, para. 7).

The National Call To Action To Promote Oral Health, also referred to as the Call to Action was developed by “a broad coalition of public and private organizations and individuals” in response to the troubling picture painted in the 2000 Surgeon General’s report (National Institute of Dental and Craniofacial Research, 2000, p. iii). Within this document, five fundamental actions were listed in the hopes that individuals and organizations with the necessary resources would intercede on behalf of the underserved: Action 1. Change perceptions of oral health; Action 2. Overcome barriers by replicating effective programs and proven efforts; Action 3. Build the science base and accelerate science transfer; Action 4. Increase oral health workforce diversity, capacity, and flexibility; Action 5. Increase collaborations (National Center for Biotechnology Information, 2003). The ADHP model was designed to be a cost-effective way to meet the priorities outlined in Action 4.

The goal of moving society toward optimal use of its health professionals is especially important in a society that has become increasingly mobile, especially since the oral health workforce has projected shortages that are already evident in many rural locales (National Center for Biotechnology Information, 2003, para. 29).

The proposed ADHP would work in collaboration with dentists and other healthcare

professionals to “provide diagnostic, preventive, therapeutic and restorative services to the underserved public in a variety of settings” (American Dental Hygienists’ Association, 2008, p.

7). Additionally, they would

increase the effectiveness and efficiency of the dental workforce, [...] extend primary dental care to disadvantaged and remote populations outside of the traditional private practice setting, and expand the capacity of community-based health personnel and facilities to meet the oral care needs (American Dental Hygienists’ Association, 2008, p. 8).

ADHP Sample Curriculum

In 2004, the ADHA Council of Education appointed a task force comprised of ten curriculum experts and charged them with establishing an educational framework for the ADHP model (American Dental Hygienists’ Association, 2008). The appointment of an advisory committee took place in 2005 where 15 organizations were represented and meetings were held throughout 2005-2006 in which “all perspectives regarding the benefits, the concerns, and the alternatives in defining and developing the competencies for this practitioner” (American Dental Hygienists’ Association, 2008, p. 25) were taken into consideration. In March 2008, after considerable research, considerations, and numerous drafts, the final product was submitted and adopted by the ADHA Board of Trustees (American Dental Hygienists’ Association, 2008). “Given the value that Americans place on the baccalaureate degree as a ‘college education’, it [was] important to move dental hygiene education closer to the norm of other health professionals with comparable responsibility” (Lyle, Malvitz, & Nathe, 2009, p. 47). Due to this concept and the existing educational criteria of other mid-level providers in similar health care fields, the program was created as a master’s level degree.

The Competencies for the Advanced Dental Hygiene Practitioner (ADHP) document included five domains: Provision of Primary Oral Healthcare, Healthcare Policy and Advocacy, Management of Oral Healthcare Delivery, Translational Research, and Professionalism, each with supporting competencies (Appendix A) (American Dental Hygienists' Association, 2008, p. 9). The sample curriculum was comprised of 21 credits of didactic courses along with 16 credits of advanced practice clinical courses (Appendix B) (American Dental Hygienists' Association, 2008). "In order to prepare dental hygienists adequately at the advanced level, it will take the equivalent of 2 years of full-time study beyond the baccalaureate degree, culminating in a Master of Science in Dental Hygiene" (Lyle et al., 2009, p. 47).

Precedence Set by Other Healthcare Professions

As advancements are continually being made in order to meet the developing needs of the population, numerous healthcare professions have adjusted their educational framework. In doing so, several, most notably the nurse practitioner in the nursing profession have established mid-level provider roles. Due to the similarities of healthcare professions and their respective growth, dental hygiene could greatly benefit from taking the successes and failures of these fields into consideration as new ideas and opportunities emerge within its own profession (Boyleston & Collins, 2012).

In a 2012 study, Boyleston and Collins investigated the progression of the physical therapy, occupational therapy, physician assistant, nursing, and respiratory therapy professions. They found that each "evolved as a means to increase the population's access to care and entry-level education advanced due to the academic rigor needed to provide safe care to patients" (Boyleston & Collins, 2012, p. 175). Due to the findings in this study, suggestions were made which focused on self-regulation and higher standards and requirements in the educational

structure. Interestingly, both ideas are aspects of the ADHP proposal (Boyleston & Collins, 2012).

Attitudes and Opinions of Healthcare Professionals

The Position of Licensed Dentists and Dental Students

Although access to care has been, and remains to be, a priority of the American Dental Association, three main concerns were listed regarding the creation of the ADHP (American Dental Association, 2009). First, it is believed that many patients will use an ADHP exclusively for their dental care, which eliminates comprehensive care and puts them at risk for undiscovered errors in diagnoses and treatment. Additionally, since the ADHP may be unsupervised by a dentist, it could be misleading for an ADHP to provide a diagnosis, treatment plan, and treatment as only a dentist is qualified to do so. Finally, the ADHA would regulate itself instead of being regulated by the Commission on Dental Accreditation (CODA), “an independent body authorized by the U.S. Department of Education” comprised of various types of healthcare professionals (American Dental Association, 2009, p. 4).

The American Student Dental Association has also declared they do “not support the use of midlevel providers to solve the barriers to care issue” (American Student Dental Association, 2013, para. 5), instead stating “that it is the responsibility of the dental community to ensure that all populations are provided with the opportunity to access quality care by a fully trained dentist” (American Student Dental Association, 2013, para. 5).

The Position of Registered Dental Hygienists and Dental Hygiene Students

In 2007, researchers conducted a pilot study in an effort to evaluate the attitudes of registered dental hygienists regarding the creation of the ADHP. In order to achieve a more diverse sample by acknowledging the differing supervision levels, laws and regulations in each

state, dental hygienists in Colorado, Kentucky, and North Carolina were asked to participate in a “a 23-item questionnaire [...] using 3 domains: support/interest in the ADHP, practice demographics, and socio-demographics and level of training” (Lambert et al., 2009, p. 119).

While various factors were taken into consideration such as the “support/interest in the ADHP concept, level of practice, and socio-demographics” (Lambert et al., 2009), the overall level of support for the ADHP was positive. This was indicated by 87% (n=129) of respondents in Colorado, 82% (n=64) in Kentucky, and 92% (n=196) in North Carolina selecting the answers ‘very supportive’ and ‘somewhat supportive’ in the questionnaire (Lambert et al., 2009, p. 117).

Anderson and Smith (2009) surveyed dental hygiene alumni from Wichita State University and found that 72% presumed the ADHP would increase access to care and over 70% indicated a master’s level education would adequately prepare hygienists to provide the type of care proposed in the ADHP model (Anderson & Smith, 2009, para. 23, 25). The views expressed by dental hygienists on the questionnaire were encouraging as most believed an oral health practitioner (OHP) would be a positive step in the advancement of the dental hygiene profession (Anderson & Smith, 2009). Although the time and expense required for continuing one’s education was a concerning factor, participants “saw the OHP as neither a direct threat to dentists nor a danger to patient safety” (Anderson & Smith, 2009, para. 32).

In 2006, student members of the ADHA were contacted regarding their interest in pursuing an advanced degree such as the ADHP (Ruppert et al., 2006). Ruppert reported that respondents were generally in favor of the ADHP and would consider pursuing this master’s degree.

Research Involving Patient Satisfaction

In Dentistry

While patient satisfaction can be a complex topic to study, researchers have successfully explored this subject in various health care settings. However, there are limited studies available that involve patient satisfaction in a dental hygiene setting. “A possible reason why there has not been serious consideration to assess the level of patient satisfaction with the dental hygienists can be assumed because dental hygienists are not seen as independent and autonomous care providers” (Bhoopathi, 2005, p. 19).

Nonetheless, albeit slower than many dental hygiene professionals might prefer, the scope of practice of the dental hygiene profession continues to make advancements that may change that perception. In a study of patients at the Minnesota State University dental hygiene clinic, Cooper and Monson (2008) found that

“ninety-eight % of the patients were satisfied or very satisfied with their overall clinic experience, and 98 % also thought the quality of care at this clinic was the same, better, or much better than the previous dental care they had received.

Most patients said they would return to this clinic for future restorative work (97%), in addition to recommending this clinic to others seeking restorative work (98%) (Cooper & Monson, 2008, para. 15).

Many Alaskan Natives also experience difficulty obtaining access to dental care. In order to meet this need, in 2002, the Alaskan Native Health Board “approved standards to credential (Dental Health Aide Therapists) DHATs as a service component of the Community Health Aide Program” (Wetterhall, Burrus, Shugars, & Bader, 2011, p. 1836). After completing program requirements, dental hygienists are allowed to practice under the general supervision of and in

collaboration with dentists, often in remote villages. Wetterhall (2011) found that “satisfaction with dental care was good and generally comparable among respondents who received care from DHATs and those who were treated by another type of provider (e.g., general dentist, oral surgeon)” (p. 1836).

Other countries continue to lead the way regarding expanded roles for dental hygienists. New Zealand’s dental therapist model is often the standard upon which other countries model this type of mid-level provider position. Dental therapists in New Zealand “have transformed the oral health of the children of the country and laid the basis for what was to become an international movement” (Nash & Nagel, 2005, p. 1326) through efficient school-based programs. The creation of this provider and its successive dental health program has allowed dental hygienists to meet the needs of each school age child with excellent results (Nash & Nagel, 2005). The “effectiveness and safety of dental therapists have been documented in other countries by the extent to which they perform quality care and satisfy patients. New Zealand dental therapists have been highly valued by the public for over 80 years” (Stolberg, Brickle, & Darby, 2011, p. 87).

Legislation changes in dentistry in the United Kingdom have also occurred, broadening the role of the dental therapist and allowing this type of provider to perform expanded duties such as pulpotomies and extractions on primary teeth as well as the placement of crowns, temporary dressings, and restorations on primary and secondary teeth (General Dental Council, 2013). In 2010, Sun, Burnside, and Harris compared patient satisfaction of those who received care from a dental therapist with those who visited a dentist. “Patients attending therapists were found to have a significantly higher level of overall satisfaction ($p < 0.001$) and also in all three sub-scales ($p < 0.001$), than those attending appointments with dentists” (Sun et al., 2010, p. 1).

In Similar Occupations

Due to the progressive nature and advancement of the nursing profession, research pertaining to patient satisfaction of care provided by nurse practitioners versus care provided by medical doctors is available. Laurant et al. (2008) explored “patients’ preferences for a nurse practitioner or a general practitioner; patient satisfaction with nurse-led care compared with doctor-led care; and factors influencing patients’ preferences and satisfaction” (p. 2692). Taking the demographic data of the patients as well as the providers, along with the treatment they received/provided into consideration, they found that most patients were satisfied with the care they received no matter which provider they used (Laurant et al., 2008). Additionally

patients were significantly more satisfied with the nurse for those aspects of care related to the support provided to patients and families and to the time made available to patients. However, variations in preference and satisfaction were mostly attributable to variation in individual patient characteristics, not doctor, nurse or practice characteristics. (Laurant et al., 2008, p. 2690).

In a similar study, Guzik, Menzel, Fitzpatrick, and McNulty (2009) investigated patient satisfaction and found that “patients were highly satisfied with both nurse practitioners and physicians. Patients reported no difference in overall satisfaction with nurse practitioner and physician services in occupational health clinics” (p. 195).

CHAPTER 3

METHODOLOGY

Overview

The purpose of this study was to examine patient attitudes and opinions regarding the advancement of a mid-level dental provider, such as the ADHP, in an effort to better understand the perceptions of those who may one day be in a position to receive care from this type of provider.

Research Design

A non-experimental design that analyzed the differences between those with and those without access to dental care was used to determine if there were differences between the groups based on socioeconomic and demographic attributes. This quantitative study was cross-sectional in nature and employed a descriptive group-comparison design by analyzing the differences between those with and without access to dental care and evaluated differences among respondents based upon their socioeconomic and demographic attributes.

Population

In order to determine if there was a difference in perception of the ADHP between those with access to care and those without, patients from two locations were asked to participate. Due to the large population size (every person in the United States falls in either category: access to care or limited/no access to care) as well as the total patients of record at each location, convenience sampling was used to select participants for this study. Forty participants at two locations comprised the sample.

The locations were selected based on convenience, patient makeup (access to care and limited/no access to care) and the willingness of employees to participate in the data collection

process. The owner and employees at Mt. Juliet Family & Cosmetic Dentistry expressed a desire to assist with this study and possessed the resources to do so. Due to the large number of patients frequenting their practice, this location provided an adequate sample of those with access to dental care. I used Coweta Samaritan Clinic, a non-profit organization providing medical care to low-income families in Newnan, Georgia in order to gather a sample of those with limited access to care. Patients at this clinic were required to reside in Coweta County, possess no health insurance and maintain a household income below 200% of the federal poverty level. Every patient who signed in for an appointment was asked to participate in the study. This continued until the minimum numbers of questionnaires were completed.

Data Collection Instrument Development

I designed a 17-item questionnaire that focused on patient perception regarding the abilities of an ADHP and included general demographic information (Appendix D). I arranged question numbers three through eight in a modified Likert scale, with the scale ranging from 1-5, with 1 being very uncomfortable and 5 indicating a high level of comfort regarding the proposed ADHP. Questions 1 and 2 as well as 9 through 17 asked participants to provide information regarding their previous knowledge of the ADHP along with age, ethnicity, education level, socioeconomic status, etc. in order to determine if responses differed among select demographic categories.

In order to establish validity of the survey instrument and to ensure the research protocol was realistic and functional, I conducted a pilot study prior to the data collection portion of the main study at Mt. Juliet Family & Cosmetic Dentistry and Coweta Samaritan Clinic. The pilot study followed the aforementioned format proposed for the primary study with a goal of eight participants in each group. Along with the cover letter and questionnaire, I gave each

participant a pilot study feedback form to complete and include in a provided envelope (Appendix E). Based on the feedback provided by the participants, I did not have to make any adjustments to the instrument or the protocol.

Informed Consent Consideration

Due to the nature of the study, I obtained informed consent of the participants. The cover letter included a brief overview of the ADHP concept, the purpose of the study, and a guarantee of anonymity. The study's letter and informed consent can be found in Appendix C.

Data Collection Procedures

I collected data at two locations. In order to reduce bias, a receptionist at Mt. Juliet Family & Cosmetic Dentistry in Mt. Juliet, Tennessee distributed questionnaires as patients arrived for their dental appointments. This format was identical at Coweta Samaritan Clinic, as each patient was asked to complete the survey as they arrived for their appointments. In an effort to improve response rates by guaranteeing privacy, the surveys were returned in a sealed envelope as soon as they were completed. All envelopes remained sealed until the completion of the data collection process to ensure confidentiality.

Research Questions

The research questions developed to guide this study were as follows:

1. How do current dental patients and patients with limited access to care perceive the ADHP?
2. Are there differences among age groups, genders, ethnicity and socioeconomic status regarding patients' perceptions of the ADHP?
3. Are patients with limited access to care more willing to receive restorative care from a mid-level provider than those receiving regular dental care from a licensed dentist?

Data Analysis Procedures

I used descriptive statistics to provide information regarding the respondents in each sample and inferential statistics to determine if significant differences in responses existed. Specifically, I analyzed independent sample t-tests, analysis of variance (ANOVA), and chi-square tests using SPSS Version 22 to determine if there were differences in the responses based upon select demographic attributes.

CHAPTER 4

PRESENTATION AND ANALYSIS OF THE DATA

By exploring the patient perception of the advancement of a mid-level dental provider, such as the ADHP, a more thorough understanding can be gained regarding the level of support of the ADHP among the intended population. Additionally, patient perception may be taken into consideration in the creation and development of the role of the ADHP, one the ADHA recommends in an effort to improve access to dental care in the United States.

Participants

The population for this study was limited to two locations and included 40 patients from Mt. Juliet Family & Cosmetic Dentistry in Mt. Juliet, Tennessee and 40 patients from Coweta Samaritan Clinic in Newnan, Georgia. The participants' ages ranged from 20-80 years old and the gender breakdown of participants was 38.75% males and 61.25% females. The average age of the participants was 46.56 with 78 of 80 participants reporting. Individuals had to be at least 18 years to participate. See Figures 1 and 2.

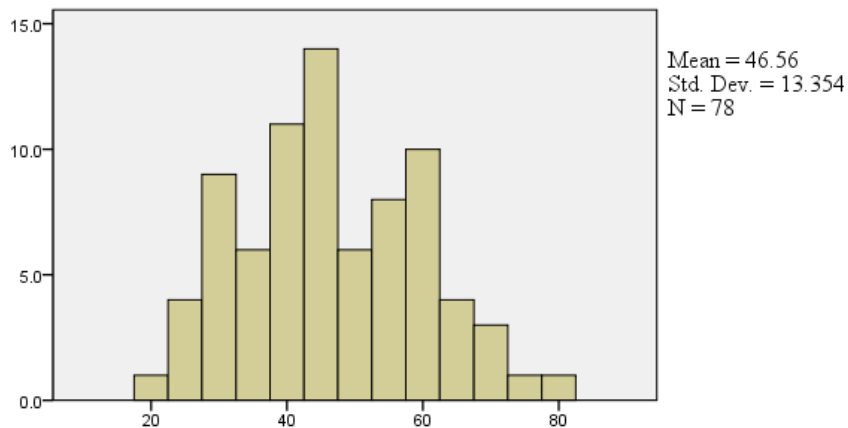


Figure 1. Age

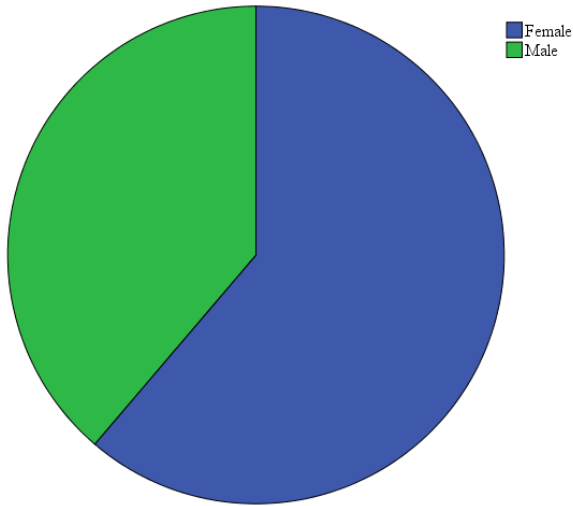


Figure 2. Gender

Caucasian, African American, Hispanic, Asian ethnicities were represented among participants with one participant identifying as “other”. The socioeconomic status makeup of participants ranged from those earning less than \$10,000 per year to those grossing more than \$90,000 annually. See Figures 3 and 4.

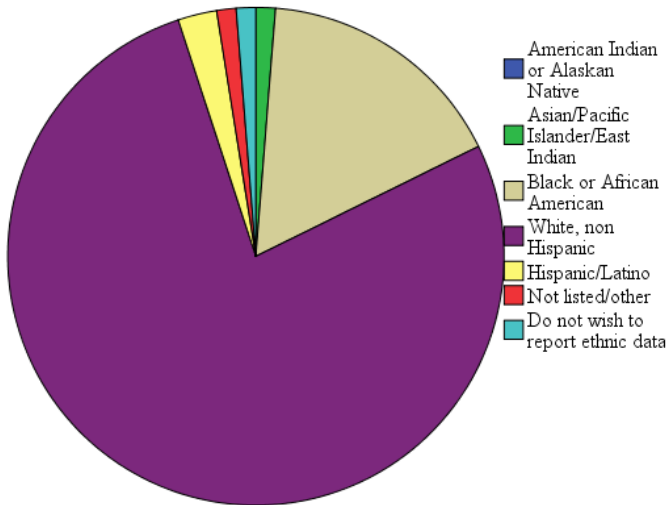


Figure 3. Ethnicity

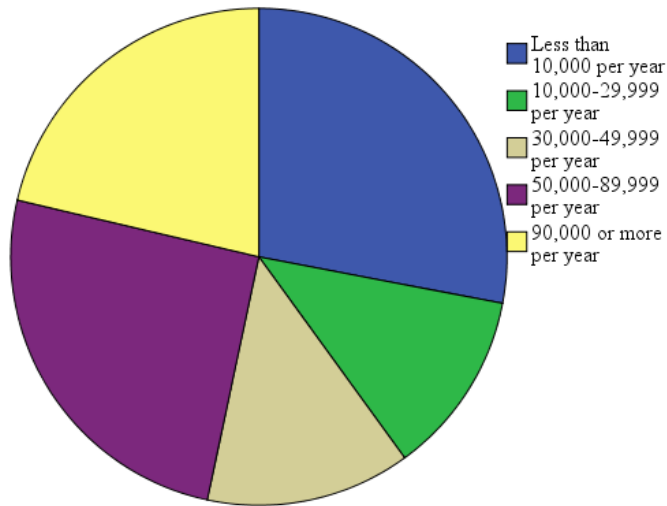


Figure 4. Socioeconomic Status

Education levels also varied among participants, ranging from those who did not complete high school or receive a GED to one participant with a doctoral degree. This data is presented in Figure 5.

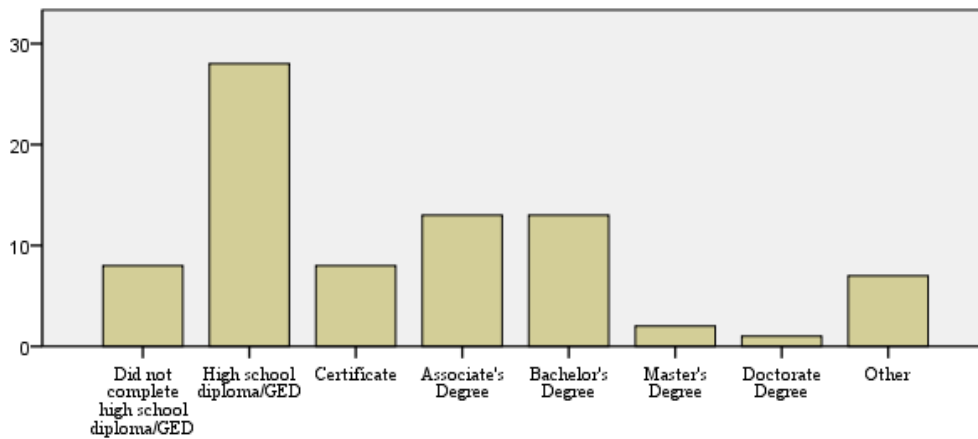


Figure 5. Education Level

Analysis of the Data

Research Question Number 1

Research question number 1 asked: How do current dental patients and patients with limited access to care perceive the ADHP?

A single question from the study's survey (question 9) provided the most critical information regarding this study question. The survey solicited yes/no responses to the question "Do you believe the availability of an ADHP would make a positive impact for those without dental insurance/access to dental care?" Seventy-nine of the study's 80 respondents answered this question. Of those responding, 97.5% ($n=77$) indicated that they believed that the availability of an ADHP would positively impact those without dental insurance/access to dental care. See Table 1.

Table 1

Frequency

		Frequency	%	Valid %	Cumulative %
Valid	Yes	77	96.3	97.5	97.5
	No	2	2.5	2.5	100.0
	Total	79	98.8	100.0	
Missing	System	1	1.3		
Total		80	100.0		

An independent samples t -test was used to determine if differences in perceptions regarding responsibilities and skills of an ADHP (survey questions 3-8) existed between those who had access to dental care and those without access to dental care. Using a 95% confidence interval ($\alpha=.05$), there were no significant differences in the responses of those with access to

dental care and those without access to dental care. *P* values from this analysis ranged from 0.307 to 0.722. See Table 2.

Table 2

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Q3 Equal variances assumed	.067	.796	-1.027	77	.307	-.263	.256	-.774	.247
			-1.040	66.702	.302	-.263	.253	-.769	.242
Q4 Equal variances assumed	2.091	.152	.634	78	.528	.177	.279	-.379	.733
			.657	73.902	.513	.177	.270	-.360	.714
Q5 Equal variances assumed	1.497	.225	1.002	77	.320	.230	.229	-.227	.687
			1.073	75.939	.287	.230	.214	-.197	.657
Q6 Equal variances assumed	1.605	.209	.357	77	.722	.082	.229	-.375	.539
			.385	76.337	.702	.082	.213	-.343	.507

Table 2 (continued)

Q7	Equal variances assumed	1.219	.273	.436	78	.664	.083	.191	-.297	.464
	Equal variances not assumed			.465	77.438	.643	.083	.179	-.274	.440
Q8	Equal variances assumed	1.419	.237	.674	76	.502	.132	.196	-.258	.521
	Equal variances not assumed			.722	75.577	.472	.132	.182	-.232	.495

Research Question Number 2

Research question number 2 asked: Are there differences among genders, education level, ethnicity and socioeconomic status regarding patients' perceptions of the ADHP?

I used an independent samples *t*-test to determine if differences in perceptions regarding responsibilities and skills of an ADHP (survey questions 3-8) existed between genders. Using a 95% confidence interval ($\alpha=.05$), I found there were no significant differences between genders. *P* values from this analysis ranged from 0.219 to 0.956. See Table 3.

Table 3

Independent Samples Test

Levene's Test for Equality of Variances		t-test for Equality of Means							
F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
							Lower	Upper	

Table 3 (continued)

Q3	Equal variances assumed	.234	.630	1.238	77	.219	.317	.256	-.193	.826
	Equal variances not assumed			1.272	69.757	.208	.317	.249	-.180	.813
Q4	Equal variances assumed	.099	.754	.890	78	.376	.250	.280	-.308	.807
	Equal variances not assumed			.892	64.267	.376	.250	.280	-.309	.808
Q5	Equal variances assumed	4.939	.029	.616	77	.540	.142	.230	-.317	.601
	Equal variances not assumed			.677	76.965	.501	.142	.210	-.275	.559
Q6	Equal variances assumed	.009	.924	.803	77	.425	.183	.229	-.272	.639
	Equal variances not assumed			.793	61.662	.431	.183	.231	-.279	.646
Q7	Equal variances assumed	5.581	.021	.055	78	.956	.011	.192	-.372	.393
	Equal variances not assumed			.060	78.000	.952	.011	.174	-.336	.357
Q8	Equal variances assumed	1.887	.174	-.399	76	.691	-.078	.196	-.468	.312
	Equal variances not assumed			-.429	75.733	.669	-.078	.182	-.441	.285

I used a one-way ANOVA to determine if differences in perceptions regarding responsibilities and skills of an ADHP (survey questions 3-8) existed based upon the ethnicity of the respondents. Using a 95% confidence interval ($\alpha=.05$), there were no significant differences in the responses among the ethnic groups. *P* values from this analysis ranged from 0.239 to 0.820. See Table 4.

Table 4

One-way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Q3	Between Groups	8.496	5	1.699	1.387	.239
	Within Groups	88.183	72	1.225		
	Total	96.679	77			
Q4	Between Groups	4.353	5	.871	.580	.715
	Within Groups	109.622	73	1.502		
	Total	113.975	78			
Q5	Between Groups	4.029	5	.806	.798	.555
	Within Groups	72.689	72	1.010		
	Total	76.718	77			
Q6	Between Groups	2.241	5	.448	.438	.820
	Within Groups	73.605	72	1.022		
	Total	75.846	77			
Q7	Between Groups	2.557	5	.511	.724	.608
	Within Groups	51.595	73	.707		
	Total	54.152	78			
Q8	Between Groups	2.230	5	.446	.610	.692
	Within Groups	51.900	71	.731		
	Total	54.130	76			

I used a one-way ANOVA to determine if differences in perceptions regarding responsibilities and skills of an ADHP (survey questions 3-8) existed based upon the education level of the respondents. Using a 95% confidence interval ($\alpha=.05$), I found there were no significant differences in the responses among the education levels. *P* values from this analysis ranged from 0.054 to 0.612. See Table 5.

Table 5

One-way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Q3	Between Groups	6.849	7	.978	.773	.612
	Within Groups	89.835	71	1.265		
	Total	96.684	78			
Q4	Between Groups	14.637	7	2.091	1.464	.194
	Within Groups	102.850	72	1.428		
	Total	117.488	79			
Q5	Between Groups	5.513	7	.788	.778	.607
	Within Groups	71.829	71	1.012		
	Total	77.342	78			
Q6	Between Groups	13.142	7	1.877	2.106	.054
	Within Groups	63.288	71	.891		
	Total	76.430	78			
Q7	Between Groups	4.936	7	.705	1.018	.426
	Within Groups	49.864	72	.693		
	Total	54.800	79			
Q8	Between Groups	7.327	7	1.047	1.550	.165
	Within Groups	47.288	70	.676		
	Total	54.615	77			

I used a one-way ANOVA was used to determine if differences in perceptions regarding responsibilities and skills of an ADHP (survey questions 3-8) existed based upon the income level of the respondents. Using a 95% confidence interval ($\alpha=.05$), I found there were no significant differences in the responses among the income levels. *P* values from this analysis ranged from 0.140 to 0.658. See Table 6.

Table 6

One-way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Q3	Between Groups	8.465	4	2.116	1.792	.140
	Within Groups	82.682	70	1.181		
	Total	91.147	74			
Q4	Between Groups	4.138	4	1.034	.675	.611
	Within Groups	107.249	70	1.532		
	Total	111.387	74			
Q5	Between Groups	3.189	4	.797	.760	.555
	Within Groups	73.398	70	1.049		
	Total	76.587	74			
Q6	Between Groups	2.494	4	.623	.609	.658
	Within Groups	71.693	70	1.024		
	Total	74.187	74			
Q7	Between Groups	3.388	4	.847	1.241	.301
	Within Groups	47.759	70	.682		
	Total	51.147	74			
Q8	Between Groups	2.098	4	.524	.747	.564
	Within Groups	48.457	69	.702		
	Total	50.554	73			

Research Question Number 3

Research question number 3 asked: Are patients with limited access to care more willing to receive restorative care from a mid-level provider than those receiving regular dental care from a licensed dentist?

A single survey question (question 3) measured the variable “receive restorative care from a mid-level provider.” I used an independent samples *t*-test to determine if differences in perceptions regarding restorative care existed between those who had access to dental care and those without access to dental care. Using a 95% confidence interval ($\alpha=.05$), I found there were no significant differences in the responses of those with access to dental care and those without access to dental care ($p=.307$). See Table 7.

Table 7

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Q3 Equal variances assumed	.067	.796	1.027	77	.307	-.263	.256	-.774	.247
Equal variances not assumed			1.040	66.702	.302	-.263	.253	-.769	.242

A somewhat similar variable related to this research question is found in survey question 10 (Would you be willing to receive dental care from an ADHP if legislation allowed this type of provider to practice in Tennessee/Georgia). Of the 79 respondents, 94.9% ($n=75$) indicated they would be willing to receive care from an ADHP if legislation permitted. I computed a Chi-Square value from a cross tabulation analysis of these two variables at a 95% confidence level ($\alpha=.05$). I found no significant difference ($p=.643$). See Table 8.

Table 8

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.420a	1	.517		
Continuity Correction ^b	.016	1	.900		
Likelihood Ratio	.446	1	.504		
Fisher's Exact Test				.643	.464
Linear-by-Linear Association	.415	1	.519		
N of Valid Cases	79				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.62.

b. Computed only for a 2x2 table

Summary

This study was based on data collected from patients treated at Mt. Juliet Family & Cosmetic Dentistry and the Coweta Samaritan Clinic between November 2015 and February 2016. Mt. Juliet Family & Cosmetic Dentistry offers treatment to anyone, provided they are able to pay for the services rendered. Coweta Samaritan Clinic offers their services exclusively to uninsured residents of Coweta County who have a household income 200% below the federal poverty level. Consequently, the two locations provided a diverse sample of participants who differed regarding access to care, gender, education level, ethnicity, and socioeconomic status.

Despite these diverse demographics, the data indicated overall positive support of the ADHP with the majority of participants answering yes to survey question 9, “Do you believe the availability of an ADHP would make a positive impact for those without dental insurance/access to dental care?” By analyzing the responses to survey questions 3 through 8, I determined there were no significant differences in how current dental patients and patients with limited access to care perceive the ADHP, answering research question number 1.

Additionally, there were no statistically significant differences among genders, education level, ethnicity, and socioeconomic status regarding how the participants perceived the ADHP.

Finally, the majority of participants indicated a willingness to receive care from an ADHP by answering yes to survey question number 10, “Would you be willing to receive dental care from an ADHP if legislation allowed this type of provider to practice in Tennessee/Georgia?” There was no significant difference found between those with or without access to care regarding research question number 3, “Are patients with limited access to care more willing to receive restorative care from a mid-level provider than those receiving regular dental care from a licensed dentist?”

CHAPTER 5

CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

The ADHA introduced the ADHP model as a cost effective way to improve access to care and meet the needs of the uninsured and underserved. The purpose of this study was to examine patient attitudes and opinions regarding the advancement of a mid-level dental provider, such as the ADHP, in an effort to better understand the perceptions of those who may one day be in a position to receive care from this type of provider.

Conclusions

Based on the results of the independent samples t-tests, one-way ANOVA tests, and chi-square tests used to analyze the data, I concluded that gender, education level, ethnicity, socioeconomic status, and access to care does not significantly impact the patient perception of the proposed ADHP.

Additionally, the majority of participants indicated the availability of an ADHP would be beneficial to those without dental insurance/access to dental care with 97.5% of those responding answering yes to the question, “Do you believe the availability of an ADHP would make a positive impact for those without dental insurance/access to dental care?”. Furthermore, 94.9% of respondents indicated they would be willing to receive care from an ADHP if legislation permitted.

While the participants in the study supported the proposed ADHP, the analysis of this support was based on a small sample size of 80 participants. This factor, along with the narrow geographic location of the sample (Tennessee and Georgia), are points of weakness in this study. Consequently, the findings are not generalizable to the larger population.

Discussion

As previously mentioned, access to dental care continues to be a problem in our nation, affecting many economically disadvantaged Americans, racial and ethnic minorities, as well as the disabled and elderly. This issue is so serious, the ADHP model was created in response to a National Call to Action issued after the 2000 Surgeon General's report (National Institute of Dental and Craniofacial Research, 2000, p. iii).

Although the ADHP model is only one portion of the solution, it is one that has the potential to make a significant difference in meeting this crucial need. "Although multiple strategies will be required to craft a lasting solution for existing and future access problems, the ADHP could contribute important knowledge and skills to address unmet oral health needs of the public" (Lyle et al., 2009, p. 47).

I explored the patient perspective regarding the advancement of a mid-level dental provider such as the ADHP in an attempt to understand how patients would feel if they were to encounter this type of provider if legislation permitted. I found that most patients would be willing to accept treatment from someone in this role. Moreover, the majority of respondents also indicated it would be a positive step towards meeting the needs of the uninsured and underserved. Additionally, demographic data such as gender, education level, ethnicity, socioeconomic status, and access to care had no significant impact on their opinion of this role.

Although many participants in this study were unfamiliar with the concept of a mid-level provider in dentistry, they made a connection when the ADHP was compared to a nurse practitioner, a mid-level provider in medicine. Nurse practitioners have widely been accepted as competent health care providers with researchers at the American Academy of Nurse Practitioners 26th Annual NP meeting reporting, "Patient satisfaction, a major indicator of

quality healthcare, was higher among low-income primary care patients treated by nurse practitioners than among those treated by physicians” (Furlow, 2011). Many participants in this study vocally expressed strong support for the ADHP movement after realizing the potential impact a mid-level dental provider might provide them personally.

Since previous research regarding the ADHP model has focused on potential providers, rather than patients, this study will add to the body of knowledge of how patients perceive a mid-level provider in dentistry. The findings of this study are undeniably important to understand when developing a role such as the ADHP, as the patient must make the ultimate decision to use this resource, regardless of urgency and need. By determining the level of support of the intended population through this research, a greater confidence will exist in the future expansion and application of this role and its ability to impact the lives of those in need.

Recommendations for Further Study

As legislation in favor of the ADHP continues to advance throughout the United States, it is important to understand the level of support of the intended population. While many studies have focused on the perception of the ADHP model by practicing dental hygienists, there is little information regarding the opinions of potential patients. Although the results of this research indicated a high level of support regarding a mid-level dental provider, additional research would be beneficial and could improve upon the aforementioned weak points and/or issues not addressed in this study. The following are recommendations for further research:

1. Repeat this study in a different geographic location of the United States in order to ensure generalizability.
2. Conduct research with patients who have been treated by a mid-level dental provider.

3. Explore levels of access to care in states where mid-level dental providers are permitted to practice.

The data in this study supports the suggestion that patients view a mid-level dental provider favorably. I believe the results of this study, as well as any results obtained from future studies, should be considered in the continual development and application of this role.

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APPENDICES

Appendix A

Domains and Competencies

Domain I: Provision of Primary Oral Healthcare

The advanced dental hygiene practitioner demonstrates competence in providing primary oral healthcare and case management for diverse populations. Practitioners use the process of care and target the underserved including those with special needs using a multidisciplinary approach.

Competencies:

1. Health promotion and disease prevention.

1-1. Apply health education, counseling, and promotion theories to achieve positive health behaviors in individuals, families, and communities.

1-2. Recognize health conditions and provide interventions that prevent disease and promote healthy lifestyles for individuals, families, and communities.

1-3. Design care plans to reduce risk and promote health that are appropriate to age, developmental stage, culture, health history, ethnicity and available resources.

1-4. Partner with patients to enhance informed decision making, positive lifestyle change, and appropriate self-care.

2. Provision of Primary Care.

2-1. Demonstrate cultural competence in the process of care.

2-2. Use a comprehensive approach to assess risk and health status throughout the process of care.

2-3. Provide evidence-based diagnostic services to identify oral diseases/conditions.

2-4. Formulate an ADHP diagnosis, prognosis, and an individualized care plan in collaboration with the patient and multidisciplinary healthcare team based on assessment data, standards of care, and practice guidelines.

2-5. Implement effective strategies for disease prevention and risk reduction.

2-6. Provide non-surgical periodontal therapy for patients with gingival and periodontal diseases.

2-7. Provide restorative services that treat infection, relieve pain, promote function and oral health:

a) Preparation of cavities and restoration of primary and permanent teeth using direct placement of appropriate dental materials.

b) Placement of temporary restorations.

c) Placement of pre-formed crowns.

d) Temporary recementation of restorations.

e) Pulp capping in primary and permanent teeth.

f) Pulpotomies on primary teeth.

g) Referral.

2-8. Perform extractions of primary teeth and uncomplicated extractions of permanent teeth.

2-9. Place and remove sutures.

2-10. Provide simple repairs and adjustments for patients with removable prosthetic appliances.

2-11. Recognize and refer patients with pathological conditions for diagnosis and treatment.

2-12. Prevent potential orthodontic problems by early identification and appropriate referral.

2-13. Prescribe pharmacologic agents for prevention, control of infection, and pain management utilizing established protocols or in consultation with a dentist or physician.

2-14. Utilize local anesthesia and nitrous oxide analgesia during the provision of care as appropriate.

2-15. Prevent, identify, and manage dental and medical emergencies and maintain current basic life support certification.

3. Case Management.

3-1. Develop care plans that reflect an integration of patient assessment data and evidence-based knowledge to achieve desired outcomes.

3-2. Coordinate care so patients receive appropriate services in a timely manner within the healthcare system.

3-3. Use information technology and management systems to evaluate care outcomes.

3-4. Establish effective tele-health and referral networks to ensure case completion and continuity of care.

4. Multidisciplinary Collaboration.

4-1. Establish partnerships with dentists and other healthcare providers for management of patients with conditions requiring services beyond the scope of advanced dental hygiene practice.

4-2. Promote oral health as an integral component of multidisciplinary healthcare systems.

4-3. Use current technology to transfer patient data when collaborating with dentists and other health professionals.

Domain II: Healthcare Policy and Advocacy

The advanced dental hygiene practitioner contributes to health policies that address disparities in oral health and access to care for the underserved. The practitioner supports and applies health policy at the institutional, local, state, regional, and national levels.

Competencies:

1. Healthcare Policy.

1-1. Articulate health policies and advocate change from the perspectives of the underserved and other stakeholders.

1-2. Integrate oral healthcare within other health and social services organizations.

1-3. Promote the role of the advanced dental hygiene practitioner in the healthcare system.

2. Advocacy.

2-1. Identify community resources to increase access to care (e.g., transportation, interpretation, translation).

2-2. Advocate for the underserved through community-based committees, boards, or task forces.

2-3. Support legislative and regulatory efforts that enhance the access to effective oral healthcare.

2-4. Advocate for quality, cost-effective oral healthcare for the underserved.

Domain III: Management of Oral Healthcare Delivery

The advanced dental hygiene practitioner integrates practice management, finance principles, and health regulations to analyze, design, and develop initiatives that will improve clinical outcomes and the quality and safety of care. The practitioner demonstrates effective business skills for healthcare and practice environments.

Competencies:

1. Practice Management.

1-1. Create business plans for oral healthcare delivery that enhance the fiscal viability of a practice.

1-2. Integrate principles of human and material resource management to create an efficient, effective, and equitable practice environment.

1-3. Adhere to reimbursement guidelines and regulations.

2. Quality Assurance.

2-1. Implement protocols for records management, occupational and environmental safety, and periodic systems review.

2-2. Maintain accountability for quality to ensure patient safety and minimize liabilities.

2-3. Implement principles of continuous quality improvement.

3. Fiscal Management.

- 3-1. Design and implement methods to monitor cost-effectiveness of care.
- 3-2. Partner with dentists, third-party providers and the government to establish fee schedules, preauthorization protocols, and direct reimbursement strategies.
- 3-3. Seek financial advice and sources of funding for operational expenses in the delivery of oral healthcare.

Domain IV: Translational Research

The advanced dental hygiene practitioner uses sound scientific methods and accesses evidence-based information when making decisions and providing patient care. The ADHP translates research findings into practical applications during patient care.

Competencies:

1. Evidence-based Practice.

- 1-1. Utilize scientifically sound technologies and protocols during the process of care.
- 1-2. Evaluate professional literature related to advanced dental hygiene practice.
- 1-3. Analyze and interpret information to guide clinical problem solving and decision-making.

2. Clinical Scholarship.

- 2-1. Evaluate the outcomes of ADHP practice using appropriate methods and analyses such as benchmarking and utilization review.
- 2-2. Contribute to the development of best practices.
- 2-3. Disseminate findings of ADHP practice to all stakeholders.

Domain V: Professionalism

The advanced dental hygiene practitioner demonstrates professional behaviors consistent with dental hygiene parameters of care, legal regulations and the ADHA Code of Ethics. The advanced dental hygiene practitioner possesses the values and exhibits behaviors that embody service to the public, professional involvement, and lifelong learning.

Competencies:

1. Ethics and Professional Behavior.

1-1. Demonstrate a professional and ethical consciousness by utilizing standards of practice that best serve the public.

1-2. Demonstrate professional, legal, and ethical behavior by maintaining confidentiality of patient information and using secure information technology and communication networks.

1-3. Use the ADHA Code of Ethics to identify, analyze, and resolve dilemmas arising in the healthcare setting.

1-4. Assume responsibility for decisions made that affect the patient's health and welfare.

1-5. Apply leadership principles within groups and organizations to enhance community innovation and planned change.

1-6. Develop strategic relations with community stakeholders to optimize resources.

1-7. Promote diversity in the dental hygiene workforce.

2. Lifelong Learning.

2-1. Foster lifelong professional development in self and others.

2-2. Participate in self-assessment and implement changes necessary to improve professional effectiveness (ADHA, 2008, pp. 10-15).

Appendix B

Sample ADHP Master's Degree Curriculum

Application Requirements

Applicants must be graduates of a dental hygiene program accredited by the ADA Commission on Dental Accreditation. They also must hold a baccalaureate degree in dental hygiene or related field, and a valid license to practice dental hygiene in at least one U.S. jurisdiction. In addition, applicants must meet the individual admission requirements of the degree-granting institution.

Information for Applicants

The total program consists of approximately 37 graduate credits. The curriculum includes didactic and clinical courses required of all graduate students.

Depending upon the institution, students who have previously taken dental hygiene courses that are part of the advanced curriculum or applicants who might be eligible for experiential learning may have the ability to test out of a specific course or waive specific courses or requirements. Furthermore, students who seek admission with existing graduate degrees in dental hygiene are eligible to pursue the ADHP curriculum.

A course in local anesthetic agents and nitrous oxide-oxygen analgesia administration may be required if the applicant is not certified for these procedures.

Sample Curriculum

The ADHP sample curriculum is designed to build upon and extend the body of knowledge and competencies of baccalaureate dental hygiene education. The purpose of the sample curriculum is to provide course guidelines for program development. Generally, one

credit is equal to one hour of didactic (classroom) instruction while one hour of clinical credit is equal to about 3 hours of clinical instruction.

Didactic Courses (21 Credits)

Theoretical Foundations of Advanced Dental Hygiene Practice (3)

Translational Research (3)

Healthcare Policy, Systems and Financing for Advanced Practice Roles (3)

Management of Oral Healthcare Delivery (3)

Cultural Issues in Health and Illness (3)

Advanced Health Assessment and Diagnostic Reasoning (3)

Pharmacological Principles of Clinical Therapeutics (3)

Advanced Practice Clinical Courses (16 Credits)

Community-based Primary Oral Healthcare I-IV (12)

Management of Dental Emergencies and Urgent Care (1)

Capstone Community Practice (3)

Course Descriptions and Competencies

Didactic Courses:

Theoretical foundations of advanced dental hygiene practice (3 credit hours). This course focuses on knowledge of primary dental care as the supporting framework for advanced professional practice. Emphasis is placed on the application of both dental and dental hygiene knowledge focusing on community of diverse patient populations and practice settings. Topics selected in this course are intended to provide dental hygienists with an understanding of the role of the advanced dental hygiene practitioner in disease prevention, treatment and referral. This course will introduce the theory and research

related to the concepts of health promotion and risk reduction providing the student with the opportunity to incorporate strategies of risk analysis and reduction, screening, lifestyle change, and disease detection and prevention in the family oral healthcare.

Competencies:

Domain I: Provision of Primary Oral Healthcare.

Health Promotion and Disease Prevention: 1-1, 1-3, 1-4

Multidisciplinary Collaboration: 4-2

Domain V: Professionalism.

Ethics and Professional Behavior: 1-3, 1-7

Lifelong Learning: 2-1, 2-2

Translational research (3 credit hours). This course focuses on critical reading, understanding, and evaluation of the professional literature. Students learn how to access information electronically in order to make evidence-based decisions that contribute to the development of best practices.

Competencies:

Domain IV: Translational Research.

Evidence-Based Practice: 1-1, 1-2, 1-3

Clinical Scholarship: 2-1, 2-2, 2-3

Healthcare policy, systems and financing for advanced practice roles (3 credit hours). This course prepares the practitioner to influence and interpret public health policy and recognize its role as a determinant of health. Students develop skills, participate in health policy development and political action, healthcare financing and delivery, and in the measurement of care delivery and practitioner effectiveness. This

course focuses on the political, ethical, societal, and professional issues in advanced practice.

Competencies:

Domain I: Provision of Primary Oral Healthcare.

Case Management: 3-4, 3-5

Domain II: Healthcare Policy and Advocacy.

Healthcare Policy: 1-1, 1-3

Advocacy: 2-1, 2-3, 2-4

Domain III: Management of Oral Healthcare Delivery.

Fiscal Management: 3-1, 3-2, 3-3

Management of oral healthcare delivery (3 credit hours). Theories will be used to develop skills in negotiation and conflict resolution. The student examines current and emerging advanced practice issues including entrepreneurship, fundamentals of tax laws, overhead costs, benefit packages, billing and negotiation with third party payers and facilities. Principles of management and community partnerships in clinical settings will be emphasized with focus on leadership skills, coalition building, and constructive use of power, influence, and politics.

Competencies:

Domain I: Provision of Primary Oral Healthcare.

Case Management 3-1, 3-3

Multidisciplinary Collaboration: 4-1, 4-2, 4-3

Domain II: Healthcare Policy and Advocacy.

Healthcare Policy: 1-1, 1-2

Advocacy: 2-1, 2-2

Domain III: Management of Oral Healthcare Delivery.

Practice Management: 1-1, 1-2, 1-2

Quality Assurance: 2-1, 2-2, 2-3

Domain V: Professionalism.

Ethics and Professional Behavior: 1-5, 1-6

Cultural issues in health and illness (3 credit hours). This course explores cultural issues in healthcare delivery that are designed to enhance the delivery and quality of healthcare offered to diverse and disadvantaged communities. Topics will include how patient and provider ethnicity, socioeconomic status, education, and cultural competence affect health, illness and the delivery of care.

Competencies:

Domain I: Provision of Primary Oral Healthcare.

Health Promotion and Disease Prevention: 1-1, 1-2, 1-3

Provision of Primary Care: 2-1

Advanced health assessment and diagnostic reasoning (3 credits hours). The course focuses on the significance of oral and systemic diseases in patients, and will include assessment, diagnosis, planning, treatment, referral and evaluation in advanced dental hygiene practice. Assessment of the patient in the context of the community will be stressed with focus on prevention, early intervention and management of common oral health problems.

Competencies:

Domain I: Provision of Primary Oral Healthcare.

Health Promotion and Disease Prevention 1-2, 1-3, 1-4

Provision of Primary Care 2-2, 2-3, 2-4, 2-5

Multidisciplinary Collaboration: 4-2

Pharmacological principles of clinical therapeutics (3 credit hours). This course is designed to expand advanced dental hygiene practitioner knowledge of pharmacological principles. Knowledge, selection and application of pharmacologic agents based on patient assessment and prescriptive authority will be emphasized.

Competencies:

Domain I: Provision of Primary Oral Healthcare.

Provision of Primary Care: 2-13, 2-14

Advanced Practice Clinical Courses:

Community-based primary oral healthcare I (3 credit hours). This laboratory/clinical-based course is the first in a series of courses throughout the curriculum that provide opportunities for advanced dental hygiene clinical practice across the lifespan. Focus on assessment, medical emergencies prevention and planning, diagnosis, treatment planning and beginning instrumentation.

Competencies:

Domain I: Provision of Primary Oral Healthcare.

Provision of Primary Care: 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-11, 2-14,
2-15

Case Management: 3-2

Multidisciplinary Collaboration: 4-2

Domain V: Professionalism.

Ethics and Professional Behavior: 1-1, 1-2, 1-4

Community-based primary oral healthcare II (3 credit hours). Continuation of Community-Based Primary Oral Healthcare I. This laboratory/clinical-based course is the second in a series of courses throughout the curriculum that provide opportunities for advanced dental hygiene clinical practice across the lifespan. Focus on assessment, medical emergencies prevention and planning, diagnosis, treatment planning, instrumentation, restorative procedures and dental material selection.

Competencies:

Domain I: Provision of Primary Oral Healthcare.

Provision of Primary Care: 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, 2-12, 2-13, 2-14, 2-15

Multidisciplinary Collaboration: 4-2

Domain V: Professionalism.

Ethics and Professional Behavior: 1-1, 1-2, 1-4

Community-based primary oral healthcare III (3 credit hours). This course is a continuation of Community-Based Oral Healthcare II. It is the third in a series of courses throughout the curriculum that provide opportunities for advanced dental hygiene clinical practice across the lifespan. Focus on assessment, medical emergencies prevention and planning, diagnosis, treatment planning, instrumentation, restorative and surgical procedures, dental material selection and evaluation.

Competencies:

Domain I: Provision of Primary Oral Healthcare.

Provision of Primary Care: 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, 2-12, 2-13, 2-14, 2-15

Multidisciplinary Collaboration: 4-2

Domain V: Professionalism.

Ethics and Professional Behavior: 1-1, 1-2, 1-4

Community-based primary oral healthcare IV (3 credit hours). This clinical-based course is a continuation of Community-Based Oral Healthcare III. It is the fourth in a series of courses throughout the curriculum that provide opportunities for advanced dental hygiene clinical practice across the lifespan. Focus on assessment, medical emergencies prevention and planning, diagnosis, treatment planning, instrumentation, restorative and surgical procedures, dental material selection and evaluation.

Competencies:

Domain I: Provision of Primary Oral Healthcare.

Provision of Primary Care: 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, 2-12, 2-13, 2-14, 2-15

Multidisciplinary Collaboration: 4-2

Domain V: Professionalism.

Ethics and Professional Behavior: 1-1, 1-2, 1-4

Management of Dental Emergencies and Urgent Care (1 credit hour). The focus of this course is on the diagnosis, treatment and referral of dental emergencies.

Competencies:

Domain I: Provision of Primary Oral Healthcare.

Provision of Primary Care: 2-14, 2-15

Domain V: Professionalism.

Ethics and Professional Behavior: 1-1

Capstone Community Practice (3 credit hours). This course provides the opportunity for concentrated clinical practice in a variety of settings. Students may complete their advanced dental hygiene practice in settings which may include family, pediatric, women's, special needs or geriatric populations.

Competencies:

Domain I: Provision of Primary Oral Healthcare.

Health Promotion and Disease Prevention: 1-1, 1-2, 1-3, 1-4

Provision of Primary Care: 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, 2-12, 2-13, 2-14, 2-15

Multidisciplinary Collaboration: 4-2

Domain III: Management of Oral Healthcare Delivery.

Quality Assurance: 2-3

Domain V: Professionalism.

Ethics and Professional Behavior: 1-1, 1-2, 1-4 (ADHA, 2008, pp. 19-24).

Appendix C

Cover Letter

January 1, 2016

Dear Patient,

In an effort to improve access to dental care in the United States, the American Dental Hygienists' Association recommends the creation of an Advanced Dental Hygiene Practitioner (ADHP). This position would be similar to a nurse practitioner allowing dental hygienists to perform expanded duties such as fillings, non-surgical extractions and the ability to write prescriptions. It would require a Master's degree and the ADHP would work with a licensed dentist.

I am conducting a study to evaluate how patients feel about the idea of this role. This study uses a questionnaire that will assess your perception of this concept. Please fill out the survey, seal the envelope and return to the receptionist. Please do not sign the survey or provide any identifying information. Completion of the questionnaire should take approximately 5-10 minutes. If you have filled out this questionnaire previously during the pilot study, please do not complete it again.

Participants must be at least 18 years of age in order to complete the survey. There are no known risks associated with your participation and it is completely voluntary; the care you currently receive will not be impacted and your healthcare provider will not know if you participated in the study. Every attempt will be made to see that your results are kept confidential. Due to the nature of this study, there is very little risk of loss of confidentiality. The East Tennessee State University Institutional Review Board (IRB) has approved this research study. You may call the Chairman of the Institutional Review Board at 423-439-6054 for any questions you may have about your rights as a research subject. If you have any questions or concerns about the research and want to talk to someone independent of the research team or you cannot reach the study staff, you may call an IRB Coordinator at 423-439-6055 or 423-439-6002.

Your consent to participate in this study is implied by your decision to complete the questionnaire. Thank you for taking the time to complete this survey. Your participation will provide valuable insight into the patient perception of the ADHP concept and could potentially shape future legislative decisions.

Sincerely,

Jacqueline M. Burgess, RDH, BS

Masters of Allied Health Degree Candidate & Primary Investigator
615-516-3363

Thesis Committee Members:
Deborah Dotson, RDH, Ph.D.
Randy Byington, Ed.D., MBA., MT (ASCP)
Susan Bramlett Epps, Ed.D.

Enclosures: Survey & Business reply envelope

Appendix D

Questionnaire

Please read each question carefully and record your response directly on the survey.

1. Prior to this study, had you heard about the ADHP?

- Yes, I had heard of the ADHP.
- No, I had never heard of the ADHP.

2. If you answered YES to question #1, which of the following best describes how you were initially introduced to the concept of an ADHP? Please select only one answer.

- Friend
- Family Member
- Co-worker
- Internet
- Other _____

For questions 3–8, please rate your level of comfort regarding the proposed responsibilities and skills of an ADHP. Please use the following scale and circle the best answer.

5 - Very Comfortable (VC)

4 - Somewhat Comfortable (SC)

3 - Neither Comfortable or Uncomfortable (N)

2 - Somewhat Uncomfortable (SU)

1 - Very Uncomfortable (VU)

	VC	SC	N	SU	VU
3. The ability of an ADHP to place fillings.	5	4	3	2	1
4. The ability of an ADHP to, if uncomplicated, remove/pull/extract teeth.	5	4	3	2	1
5. The ability of an ADHP to diagnose, develop treatment plans, and/or provide referrals for oral diseases.	5	4	3	2	1

6. The ability of an ADHP to prescribe non-narcotic medications.	5	4	3	2	1
7. Your overall opinion regarding the qualifications of an ADHP to make sound clinical decisions.	5	4	3	2	1
8. Your overall opinion regarding the qualifications of an ADHP to provide satisfactory patient care.	5	4	3	2	1

9. Do you believe the availability of an ADHP would make a positive impact for those without dental insurance/access to dental care?

- Yes, I believe the ADHP would make a positive impact.
- No, I do not believe the ADHP would make a positive impact.

10. Would you be willing to receive dental care from an ADHP if legislation allowed this type of provider to practice in Tennessee/Georgia?

- Yes, I would be willing to receive care from an ADHP.
- No, I would not be willing to receive care from an ADHP.

11. Please indicate your age. _____

12. Please indicate your gender.

- Female
- Male

13. Please indicate your ethnicity.

- American Indian or Alaskan Native
- Asian/Pacific Islander/East Indian
- Black or African-American
- White, non-Hispanic
- Hispanic/Latino
- Not listed/other
- Do not wish to report ethnic data

14. Please indicate your highest level of education.

- Did not complete High School Diploma/GED
- High School Diploma/GED
- Certificate
- Associate's Degree
- Bachelor's Degree
- Master's Degree
- Doctorate Degree

Other (specify) _____

15. Please indicate your annual household income.

- Less than \$10,000 per year
- \$10,000- \$29,999 per year
- \$30,000- \$49,999 per year
- \$50,000- \$89,999 per year
- \$90,000 or more per year

16. Do you currently have dental insurance?

- Yes, I have a dental insurance
- No, I do not have a dental insurance

17. Is access to dental care a problem?

- Yes, I have limited/no access to dental care.
- No, I have access to dental care.

Appendix E

Pilot Study Feedback Form

Thank you for participating in the pilot portion of this study. Please take a moment to answer the following questions. Your feedback is very important and will have a direct impact on the success of this research study.

1. Were the questions easy to understand? If not, what was unclear and needed clarification?

2. Are there additional questions that should be added? If yes, please provide an example.

3. Are there questions that should have been omitted? If so, which ones?

4. Did you need the receptionist to answer any questions about the questionnaire? If yes, was she able to do so?

5. How much time did it take for you to complete the questionnaire?

6. Please list any additional comments or suggestions below.

VITA

JACQUELINE M. BURGESS

Personal Data: Date of Birth: May 17, 1981
 Place of Birth: Nashville, TN
 Marital Status: Married

Education: Friendship Christian School
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 Associate of Applied Science in Dental Hygiene
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 Completed August 2016

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 April 2007- October 2008

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