

**A DISSERTATION IN PRACTICE: BENEFITS OF A DENTAL HYGIENIST
OBTAINING A BACCALAUREATE DEGREE:
A QUALITATIVE RESEARCH STUDY OF LICENSEES IN
FIVE MIDWESTERN STATES**

A Dissertation in Practice Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

Franklin University

by

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This is to certify that the dissertation prepared by

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"Benefits of a Dental Hygienist Obtaining a Baccalaureate Degree: A Qualitative Research Study of Licensees in Five Midwestern States"

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ABSTRACT

This qualitative research study includes individual perspectives gathered from participants located in five midwestern states, comparing the benefits of obtaining a baccalaureate degree to the benefits found in current reviewed literature. Mezirow's theory of transformational learning has been applied to the data to explain potential intangible benefits dental hygienists associate with seeking a baccalaureate degree. Dental hygienists who have obtained a baccalaureate degree were questioned via an online qualitative survey to obtain their personal beliefs as to the benefits of receiving a baccalaureate degree to discover the transformational meaning of obtaining a baccalaureate degree when an associate degree is the minimum requirement for licensure in the participant states. Findings from this inquiry support the premise that a baccalaureate degree adds opportunities for additional tangible and intangible benefits for dental hygienists. In addition, respondent replies support an increased self-understanding, strengthened belief systems, improved lifestyle changes, and enhanced responses to organizational change, relating Mezirow's theory of transformational learning to intangible reasons behind the adult quest for seeking higher levels of learning.

Keywords: dental hygiene, baccalaureate degree, bachelor's, entry-level, transformational learning, qualitative design, Midwest states, ADHA District VIII

DEDICATION

To my parents, for teaching me both grit and kindness. Alfred and Agnes Ann Reinert are the prime examples of generosity and compassion in the world.

To my husband, Mike Boge, thank you for believing in me; and to my sons, Lukas, and Erik Boge, thank you for growing up as humans we can be proud of raising.

To my siblings, their wives and husbands, and my nieces and nephews, your words of encouragement were never lost as I traveled this road. Family is everything.

To my Dental faculty, you all allow me to lead with a servant heart and give me grace, always.

To my friends and my dental family, thank you for always believing I could reach all the way to the moon and stars, and to the distal of #16.

To my committee, Dr. John Nadalin, Dr. Eric S. Hutchison, and Dr. Donis Toler, Jr., you encouraged me, you expanded my reach, and you were integral in the creation of this work. You are educators who change lives for the better.

To Dr. Bora Pajo, you gave me perspective and insight as a true content expert. Thank you for helping me set realistic research expectations.

To my Franklin University friends, especially Tonia Young-Babb and Les Hall, thank you for being my compass and helping me see the finish line from the very beginning.

ACKNOWLEDGMENTS

A special thanks to:

Dr. John Nadalin, Dr. Eric S. Hutchison, and Dr. Donis Toler, Jr., my committee.

Dr. Bora Pajo, my research expert.

Ms. Kara Vavrosky, Mr. Ben Buzbee, and Mr. Michael O'Donnell at Today's RDH, my connection to the dental community who made my research possible.

The participants in this survey, my colleagues who donated their time and experiences for the expansion of knowledge in our career field.

Franklin University, "The University of Opportunity," my team of faculty and staff who administer the day-to-day work needed to achieve the mission of the organization.

The HCC Dental Hygiene and Dental Assisting Team, my co-workers who support me, encourage me, smile with me, and consistently amaze me with their talent.

Hawkeye Community College, my employer, and the place where I earned my first diploma and AAS degree, our administration, faculty, staff, and students are my why.

Jell-Ed Team, Dr. Joy Void-Holmes, Ms. Lisa Bahr, and Ms. Lory Laughter, my partners in the mission of educating educators and sharing knowledge freely.

Mrs. Michelle Geistkemper, my editor and friend who went above and beyond.

All dental industry colleagues in science, specifically the "Well Bragged," too many to name individually, you are my friends who continue to foster my curiosity in the art and science of dentistry.

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GLOSSARY OF TERMS

Baccalaureate (bachelor's) degree: from Latin, *baccalaureus*, an undergraduate degree awarded by colleges after traditionally studying for 3 to 7 years, depending upon the institution of higher learning and the academic discipline of study (Mischler, 1983).

Dental hygienist: a preventive oral health care provider licensed to perform skills, designated by their state or country of practice, following the completion of clinical and didactic board exams, and receiving a minimum of an entry-level degree from an accredited dental hygiene program (ADHA, 2018).

District VIII: designation given by the American Dental Hygienists' Association (ADHA) to the states of Illinois, Iowa, Kansas, Missouri, and Nebraska; all of which require an entry-level degree for licensure, defined as the minimum of an associate, not a baccalaureate, degree (ADHA, 2021).

Entry-level degree: the minimum degree competency required for licensure in ADHA's District VIII (ADHA, 2018).

Intangible benefit: public or non-public rewards that are received for improvement in skills, education, or training that cannot be converted into dollars and cents to use as a metric for value. Examples include power, sense of belonging, professionalism (Drucker, 1973).

Licensure: a regulatory condition that verifies certification; often necessary for practicing an occupation, profession, or trade within an outlined area such as a state or country (ADHA, 2018).

Motivation: the reason or reasons one gives as an explanation for completing a task or emulating a behavior (Franken, 2007).

Recognition: visible public reinforcement of a choice made, degree obtained, or status achieved (Chan, 2016).

Tangible benefits: public or non-public rewards that are received for improvements in skills, education, or training that can be converted into dollars and cents to use as a metric for value.

Examples include increased productivity per hour, money, gifts (Drucker, 1973).

CHAPTER 1: INTRODUCTION

The Commission on Dental Accreditation (CODA, 2019) defines a dental hygienist as a licensed healthcare worker whose focus is to provide a wide range of oral hygiene care services to support the patient in their quest for total health. In 2019, the Bureau of Labor Statistics: U.S. Department of Labor (BLS) reported that within the United States, dental hygienists held 226,400 jobs, with 93 percent of those individuals employed in a clinical dental office setting. The remaining seven percent of dental hygienists occupied positions in other non-clinical roles of the *American Dental Hygienists' Association (ADHA) Professional Roles of the Dental Hygienist*, serving as an employee in the corporate sector or public health sector, a researcher, educator, administrator, or entrepreneur (ADHA, 2018). These six additional roles of the dental hygienist, outside of general clinical practice, often require the completion of a baccalaureate degree (ADHA, 2019a, Kanji & Laronde, 2018). For this reason, dental hygienists often decide to pursue a baccalaureate degree if they are considering a non-clinical career option.

Statement of the Problem of Practice

Minimal research exists documenting the benefits associated with dental hygienists earning a baccalaureate degree; however, scholarly literature in the field of dental hygiene has explained the importance of further education (Gurenlian & Spolarich, 2015). Therefore, a reasonable assertion can be made that a higher level of education would add opportunities for additional tangible and intangible benefits for a dental hygienist. Additionally, many dental hygienists choose to pursue a baccalaureate degree although an associate degree is the minimum requirement for licensure in the five midwestern states studied, and all states in the United States apart from the state of Alabama (CODA, 2019d). Currently, there are 327 accredited dental hygiene programs in the United States with 51 of these programs offering a bachelor's degree

completion in dental hygiene (ADEA, 2021). Although these 51 baccalaureate in dental hygiene programs exist, many dental hygienists choose to pursue baccalaureate degrees in curriculum not related to dental hygiene practice (Darby & Walsh, 2015). Regardless of what field a dental hygienist chooses for the bachelor's degree, there is limited evidence listing the direct benefits of the education within the profession.

Education has been recognized as a catalyst for life improvement and has been correlated with increased feelings of satisfaction among organizations. As a critical component of daily life, increased education has been linked to improved health, decreased poverty, and increased equity (Hahn & Truman, 2015). The theory behind the examination of the benefits of an individual seeking a higher level of education than is necessary for the participation within the organization of a profession can be examined by finding the link between education and life satisfaction (Wilson, 1967; Diener et al., 1999; Heller et al., 2004). According to the Association of Public and Land Grant Universities (APLU, 2020), those who obtain a higher level of education than necessary in careers earn more money. Additional research indicates financial stability is important to those within an organization and there are other benefits which influence job satisfaction which have been found in non-degree paths of education (Rosenbaum, 2016). A gap exists in the explanation of these benefits and if these assets are truly associated with obtaining a bachelor's degree. Some dental hygienists and dental hygiene students question if the higher degree is necessary and worth the expenses to achieve these outcomes considering time, funds, and educational effort that is contributed by those in the profession to earn the degree.

Purpose of the Study

Colleges often ask that dental hygiene program directors, department chairs, and program faculty act as student advisors, coaching students to pursue higher education beyond an associate

degree (ADHA, 2018; ADHA, 2019c). As advisors, these college employees direct students in formulating future career intentions often encouraging students to pursue a baccalaureate degree. This encouragement is based upon the benefits they, and previous graduates, have received because of their baccalaureate degrees and may have potential bias as they too have chosen a non-clinical role within dental hygiene and earned a higher degree (Darby & Walsh, 2015). Educators and administrators often make these recommendations with the intention of meeting the long-term career goals for the profession of dental hygiene, regardless of knowing the future goals of the individual student being advised (Darby & Walsh, 2015).

As discussed, most practicing dental hygienists in the United States serve in a clinical role (BLS, 2019). But suppose a student or licensed dental hygienist is interested in pursuing a career outside the traditional clinical role of a dental hygienist. In this case, educators often recommend the student seek a higher-level degree as most non-clinical career options require a baccalaureate as entry-level (Kanji & Laronde, 2018; ADHA, 2019a). Although some literature exists to support this phenomenon, there are limited studies that list the benefits to obtaining a baccalaureate degree, specifically in the five Midwestern states that make up District VIII of the American Dental Hygienists' Association (ADHA, 2019b): Kansas, Illinois, Iowa, Missouri, and Nebraska (ADHA, 2021).

Limited research exists to support or refute the decision made by a dental hygienist to pursue a baccalaureate degree as an associate degree is the minimum education that is required to obtain a license within these states. Therefore, the focus of this inquiry was placed on obtaining respondents licensed in these five states. Upon review of previous literature, six themes emerged that could explain the pursuit of a higher degree than what is necessary to obtain a license for clinical practice. These themes attempt to explain what individual dental hygienists wish to

achieve by obtaining a baccalaureate degree, yet they do not fully explain the dynamics within the organizational culture of dental hygiene that motivates these professionals.

The purpose of this qualitative inquiry was to isolate the specific benefits of a dental hygienist obtaining a baccalaureate degree when an associate degree is the minimum required for licensure in five Midwest focus states. The intent of this research was to survey licensed dental hygienists who had graduated from a non-specified baccalaureate degree program within the previous ten years. The data recorded their explanations of benefits for seeking a baccalaureate degree along with the potential transformation that occurred in their life attributed to the degree advancement.

Significance

Professional advancement and detailed inclusions within the culture of dental hygiene require both education beyond entry-level, specifically in the knowledgebase of research design (Gurenlian, 2015). Research within the field of dental hygiene supports the phenomenon that professionalism, as a behavior within the constructs of dental hygiene culture, also includes the ability of a licensed dental hygienist to design and complete research and obtain additional education, and to contribute to the overall body of dental hygiene academia (Battrell et al., 2016, Gurenlian, 2015; Nagatani et al., 2017; Wilson, 2001;). Since these skill sets are often obtained through the completion of a baccalaureate degree, it could be stated that obtaining a degree higher than what is required for licensure may increase the advancement of that licensee. The evidence in this study attempted to provide insight to the body of literature available regarding this phenomenon.

Gurenlian (2015) stated that both education and leadership skill sets are integral components needed as the dental hygiene profession continues to evolve. The professional

association of dental hygienists within the United States agrees, stating education and leadership are foundational elements of the organizational culture within dental hygiene (ADHA, 2005). Research has shown for members of the dental hygiene profession to be effective, each must be willing to maintain standards of care and current knowledge of evidence-based research in practice, regardless of the practice setting (Gurenlian & Spolarich, 2015).

The role of leadership remains important in the clarification of an organization's mission, purpose, and values, with its leaders setting the tone for all members of the organization (Jain & Jain, 2013). As dental hygienists continue to evolve within the field of preventive care, the members of the organization of dental hygiene work to advance as emerging leaders within the entire field of all health care providers (Health Resources and Services Administration, 2014). These ideas considered, some significance exists, yet it remains unclear to what level a baccalaureate degree contributes to the evolution of the organization. Leaders must be constantly thinking ahead to maintain a dynamic nimbleness for the organization to advance to achieve goals (Jain & Jain, 2013). In the dental hygiene profession, part of this challenge is assigning a more significant value to higher education to obtain the techniques and skill sets needed for advancements in leadership within the healthcare community (Gurenlian & Spolarich, 2015).

Organization and Framework of the Study

Conceptual and Theoretical Framework

Mezirow's Theory of Transformational Learning. A relevant theory in the adult quest for seeking higher levels of learning related to personal benefits or growth is Mezirow's theory of transformational learning. This theory states "perspective transformation" in learning often occurs in three dimensions including the psychological facet where the learner begins to understand their individual self, the convictional facet where the learner begins to change the way they view their own belief system, and the behavioral facet where the learner changes their lifestyle to meet their new perception of needs (Mezirow, 1991). The three levels of transformation in learning are applied in this inquiry in the attempt to explain the benefits dental hygienists associate with seeking a baccalaureate degree. This inquiry sought details to explain the pursuit of a baccalaureate degree on a theoretical level, a practice level, and a personal level by asking individuals to answer the open-ended survey questions that first asked the benefits, then inquired about transformational change following that achievement.

Theoretically, this study reviewed and interpreted current literature regarding the perceived benefits of a baccalaureate degree, then compared that information to the motivations and experiences reported by graduates participating in the survey. In addition, the study investigated whether the benefits of those completing the open-ended survey questions, following their graduation from bachelor's programs while practicing dental hygiene in the Midwestern states, mirrored the available literature from both other areas of the country and the world, as seen in the literature review. The motivating influences summarized from the literature review were organized in themes from studies that inquired why a dental hygienist would choose

to pursue a baccalaureate level education, and the data from this research study was compared to the current body of literature available in the following chapters.

Sensemaking. Mischler (1983) researched goals for adults over the age of 25 who recently sought a baccalaureate degree. The Mischler research indicated the top two goals of these adults included an intention to enter a new career and a desire to feel the satisfaction of earning a higher level of degree. The notion of "sensemaking", as outlined by Bolman and Gallos (2011), may also explain the individual quest for baccalaureate degree-seekers. Sensemaking consists of three natural phases that occur innately. Observing an event, considering what happened, and reacting, are steps taken by both leaders and followers alike. The different light shed upon this topic by Bolman and Gallos (2011) resonates specifically in dental hygiene, in that a range of factors influences sensemaking within the profession, and these factors may include one or more of the six themes that emerged in the literature as to why dental hygienists obtain a baccalaureate degree. Relating the concepts of sensemaking from Bolman and Gallos assisted the researcher in considering the educational decisions necessary within the organized profession of dental hygiene, as it continues to emerge as a leader in healthcare.

"Sensemaking is incomplete and personal" (Bolman & Gallos, 2011, p. 18). By admitting that culture, experience, and past life events can color the lens through which we view and respond to situations, leaders can acknowledge the biases that may exist and work past them to react in a manner that reflects their organizational goals rather than their personal wants. Are these biases altering the perception of education as dental hygienists, allowing leaders to perceive the associate degree as acceptable for entry-level practice?

"Sensemaking is interpretive" (Bolman & Gallos, 2011, p. 19). By admitting that sensemaking steps can be influenced by personal interpretation, leaders can attempt to move

toward more impartial choices for the organization that are evidence-based rather than those that are considered "right or wrong" in their own mind. Are leaders and stakeholders in dental hygiene interpreting the benefits of achieving a bachelor's degree in the organization?

"Sensemaking is action oriented" (Bolman & Gallos, 2011, p. 19). By acknowledging that it is natural for humans to have an unspoken want to predict how others respond, leaders can attempt to balance their strategic plans at a realistic level for the response of their team. Are leaders in dental hygiene strategically planning the needs of the organization and those of the public regarding oral preventive care at a realistic level by requiring only an associate degree?

Leaders are charged with the duty to incorporate all concerns into the strategic plan to address change, not just the easy and predictable concerns. In addition, all planned changes coming from the leader do not necessarily result as intended (Cawsey et al., 2016). Sensemaking leads to more effective decision making because it encourages leaders slow down and gather all the information (Bolman & Gallos, 2011). Sensemaking asks that leaders look at the plan through a clear lens rather than a lens that is potentially tainted with their previous experiences, perceptions, or desired results (Bolman & Gallos). This inquiry sought to find if leaders within the profession of dental hygiene are considering education expectations utilizing sensemaking strategies.

Groopman and Hartzband (2008) discussed the need for cognitive science in clinical medicine with the intent of decreasing misdiagnosis in the medical field. These scientists feel the use of technology in medicine is important, yet medical professionals cannot rely solely on technology when sensemaking is a vital piece of problem diagnosis. This is a valid example of why sensemaking applies to various organizational behavior decisions across various professions, including the educational plan for the future of dental hygiene.

Sensemaking also applies to higher education, especially health professional higher education (Bolman & Gallos, 2011). Educators in health sciences can mirror the sensemaking practices when addressing the daily concerns of students, so students can carry this process into both didactic studying and clinical patient care. By using the concept of reframing, as discussed by Bolman and Gallos, dental hygienists can step back from the decision they are attempting to make, in this case regarding obtaining additional education, and shift into a mode where they can gather the facts and reframe the situation to assess why they would want to achieve the degree. Then, they can learn the valuable skill set of gathering details through reframing. This reframing is particularly important when making educational decisions for the future of the profession, considering the benefits advanced education can provide.

Psychological Contract. Assumptions, values, and artifacts within a culture make up the behavior of that organization (Schein, 1992). Rousseau (1989) first outlined the concept that within an organization there exists an unwritten contract between a member and the organization that defines these suppositions that are unrecorded. This psychological contract is the underlying motivation for many decisions for change, the behaviors by members of the organization, the response to changes within the organization, and the relationships that are built and maintained in the organization.

In dental hygiene, the pursuit of a non-clinical career path often involves attaining a higher level of education to prepare for the challenges of that new career path (Battrell et al., 2016; Brand & Finocchi, 1985; Dominick, 2007; Monson, 2012; Pohlak, 1996; Rowe et al., 2008). Because the terms of the psychological contract are often not clear within an organization, remaining more unspoken and informal, individuals must seek out the meaning to understand the psychological contract in context to each situation. One aspect of the psychological contract,

within achieving a non-clinical role in dental hygiene, involves attaining a higher education than what is required for a clinical role. For continuous organizational development to occur, the underlying context should be acknowledged by leaders (Nadler & Tushman, 1989). The utilization of this process by educators and administrators is responsible for academic advising that informs students and licensees more accurately on decisions to pursue additional education after they have met requirements for licensure in individual states.

Problem Statement and Research Questions

Many associate degree program directors advise students to pursue a baccalaureate degree following program completion although research is limited regarding the actual tangible and intangible benefits of pursuing this baccalaureate education (Anderson & Smith, 2009; Kanji & Laronde, 2018). The knowledge of the benefits that exist for dental hygienists who pursue a baccalaureate degree could encourage additional colleges to recruit dental hygiene associate level graduates, accept clinical credits from these entry-level programs, inform other educators to advise students more accurately, and encourage practicing licensees to consider a bachelor's degree.

The broad research problem to be investigated is, *what are the benefits of a dental hygienist obtaining a bachelor's degree when an associate degree is the minimum required for licensure?* The purpose of this study is to provide clarity and support for those who advise dental hygiene students and licensees regarding their future career options, list the tangible and intangible benefits experienced by those who have received their baccalaureate degree, and contribute to the overall body of evidence-based research in this field. Information from this inquiry aims to assist individuals who are questioning whether to continue their education as

additional data may further justify their quest for a higher level of education, specifically a baccalaureate degree.

Delimitations and Limitations

The researcher acknowledges the varied definitions of how individuals determine values, benefits, and professionalism. Tangible versus intangible benefits exist in a variety of occupational strata, dental hygiene included. The values of the Midwest dental hygiene culture may differ from the benefits listed in similar studies noted in other regions where research has been completed. This inquiry aims to compare existing literature to the information gained from participants from the Midwest states as the individuals discuss their own experiences in obtaining their higher education.

The narrowed focus of five states (Kansas, Illinois, Iowa, Missouri, and Nebraska) is a clear limitation of the study as is the further narrowing of participants by selecting only individuals who have received their baccalaureate in the past ten years. The researcher acknowledges these and other pertinent limitations when discussing data as the sample is one of convenience rather than one which is completely randomized due to the specificity of participation requirements. The limitations inherent in this study may inspire further research in other regions of the United States, or internationally, in identifying the motivations and benefits of obtaining higher education as a dental hygienist in other geographic settings.

Another limitation of this study is the dental hygienists who participated volunteered to complete the survey, thereby they have already shown personal motivation as they have completed a degree not required for dental hygiene licensure. Findings from the study may be attributed to participant inherent bias as this specific participant cohort has already chosen to pursue and complete a baccalaureate degree, obviously showing they had noted some benefit or

value at the time of that choice. Had they not seen a potential benefit they would not likely have given the initiative.

One final noted limitation of potential concern is that participants may struggle to recall the specific details that motivated them as they look back on memories to explain their motivations and feelings upon starting their baccalaureate degree. Additionally, the participant may have had a life change or career injury that required them to pursue a career path in dental hygiene that did require an advanced degree rather than basing that decision purely on personal motivation to leave clinical practice to attain a new role. To counteract these potential biases, strategies of maximum variation sampling, field note memos during phone or email follow-ups, transcribing the open-ended survey responses verbatim, and collecting data until saturation occurs did enhance the study validity and inferrability. The primary incentive to participate was the participant having the opportunity to add to the body of literature and guide future colleagues in evidence-based educational decision making.

Methodology

Research Design

This inquiry employed a qualitative methodology, using a maximum variation, purposeful sampling strategy. Rather than focus on a target number for survey completion, the researcher aimed to achieve saturation of data, the point at which no new themes emerged from additional data collected (Creswell & Poth, 2018). The researcher included dental hygienists who had received an associate degree, then continued their education to obtain a baccalaureate degree within the previous ten years, with dates applied as August 1, 2011, to the time of the survey. Surveys were completed utilizing Google forms, then all surveys were memoed, stored verbatim

in a locked digital format, then coded for data analysis. Each step involved pattern recognition and thematic development.

In previous studies, researchers have used various methods to obtain information about the motivations and benefits for additional formal education in the profession of dental hygiene, along with the changes brought forth from those benefits. Anderson and Smith (2009) utilized a quantitative methodology design to obtain ratings on a five-point Likert scale to measure the perception of value dental hygienists placed on receiving a baccalaureate degree in dental hygiene, with respondents stating they felt their associate degree better prepared them for the challenges of clinical practice. Boyd and Bailey (2011) used a combination of a demographics and an open-ended question survey via email to obtain information on barriers to dental hygienists continuing their education to achieve a higher degree. Rowe et al. (2007) used a quantitative 30-question closed-ended survey to investigate if dental hygienists who obtained baccalaureate degrees have a greater likelihood of obtaining positions in a non-traditional setting, defined as outside of clinical practice. These various methodologies utilized both qualitative and quantitative methodologies to capture information from the organizational population of the dental hygiene profession, yet none isolate dental hygienists who have already achieved a baccalaureate degree, and none describe the benefits they have experienced since obtaining that degree or how their life was transformed through higher learning.

When discussing benefits and individual experiences, quantitative research provides an opportunity for open-ended discussion (Creswell & Poth, 2018). Qualitative research focuses on gathering subjective, lived experiences from a participant regarding the topic studied while avoiding the personal biases of the researcher. In this study, dental hygienists who have obtained a bachelor's degree will complete an open-ended survey to obtain their personal beliefs as to the

benefits of receiving a bachelor's degree, and the researcher will attempt to discover the transformational meaning for the participants of obtaining a baccalaureate degree when an associate degree is the minimum requirement for licensure in the five states considered.

Data Collection

The goal was to collect complex data from all participants, using qualitative study methods to establish “methodical congruence” (Creswell & Poth, 2018, p. 128). Data was collected through online open-ended surveys using Google docs with follow-up questions asked via phone or email using field notes if participants agreed to further contact, as listed on the informed consent form included in the survey. All secure correspondence took place via phone and email, Google docs, and field notes, and all information was stored in a secure locked digital manner (Creswell & Poth, 2018, p. 128).

The informed consent stated to participants that each survey would be anonymized to protect personal information and location of licensure. The documented survey, as listed in Figure 1, was transcribed verbatim through Google docs, with all data kept in password-locked systems on a secure server. The researcher maintained a listing of questions that evolved as emergent details became available and followed-up with respondents for clarity only when necessary for validity, and only with those who gave consent within the survey for follow-up contact (Creswell & Poth, 2018).

Figure 1: Google Survey**Section 1: Qualification for Dissertation Survey**

- Are you a graduate of an accredited entry-level Dental Hygiene Program that prepared you for licensure within the United States?
- Are you licensed to practice Dental Hygiene in one or more of the following states: Kansas, Illinois, Iowa, Missouri, Nebraska?
- Have you received a baccalaureate degree within previous 10 years (anytime between August 1, 2011, and the current date)? All bachelor's degrees qualify. Examples include, but are not limited to BA, BS, BFA, BSDH, BHS, BDH, etc.

Section 2: Informed Consent *[Detailed Listing in Figure 3]***Section 3: Demographic and Qualitative Research Open-Ended Questions**

- What was your age at your last birthday?
- In what year did you graduate from an accredited DH Program?
- What DH Program did you attend?
- In what city and state was the DH Program located?
- In what year did you graduate with your baccalaureate degree?
- In what field is that baccalaureate degree?
- Do you have an advanced degree beyond baccalaureate? If yes, please specify your highest degree.
- In what state do you primarily practice dental hygiene (spend the greatest amount of your working hours each year)?

- Are you licensed in any additional states? If yes, please list.
- What role of the dental hygienist do you primarily serve (spend the greatest amount of your working hours each year)?
- Have you changed that role since graduating from your baccalaureate program? If so, what was your prior role?
- Do you have a desire to change your current dental hygiene role?
- If moving was required to change your role or career in dental hygiene, would you relocate to an area outside driving distance from your current home?
- How do you, as a recent baccalaureate-prepared DH (within the last 10 years), describe your motivators for pursuing a bachelor's degree?

Intangible benefit: public or non-public rewards that are received for improvement in skills, education, or training that cannot be converted into dollars and cents to use as a metric for value. Examples include power, a sense of belonging, professionalism.

Tangible benefits: public or non-public rewards that are received for improvement in skills, education, or training that can be converted into dollars and cents to use as a metric for value. Examples include increased productivity per hour, money, gifts, etc.

- What do you, as a BPDH, describe as the tangible or intangible benefits of obtaining a bachelor's degree?
- How do the actual benefits you have experienced following graduation compare to your expected benefits?

Motivation: the reason or reasons one gives as an explanation for completing a task or emulating a behavior.

- How do you describe your motivations following the experience of completing a baccalaureate degree?
- How did the actual motivations, following the completion of a baccalaureate degree, compare to your original motivations for the experience?
- How do your motivational factors beginning a bachelor's program overlap with the actual experiences you have had since completing a bachelor's degree?
- Can you describe some of the factors that motivated you to begin your bachelor's degree?
- Can you describe some of the actual motivational factors you achieved since baccalaureate degree completion?
- How did your understanding of yourself change after you completed your bachelor's degree?
- How did your belief system change after you completed your bachelor's degree?
- How did your lifestyle change after you completed your bachelor's degree?

Schein defines the organizational culture of a group as a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and,

therefore, to be taught to new members as the correct way to perceive, think, and feel about to those problems.

- How do you feel the organizational culture of the dental hygiene professional is affected when an individual obtains a baccalaureate degree?
- Do you feel the difficulty of completing a baccalaureate degree completion program is different than completing an entry-level dental hygiene program? Why or why not?
- Please list any additional comments you would like me to add to the research in the space provided below.
- May the lead researcher contact you if follow-up questions are needed upon review of this information?
- If yes, please list your email and phone number below:

Section 4: Submit Final Survey Answers <https://forms.gle/oag5q5kwnNDsPA2w6>

Participants were solicited as readers of the *Today's RDH* online publication who had willingly submitted their email to the company mailing list to subscribe to the publication. *Today's RDH* sent an initial email asking for voluntary participation from this large population of dental hygienists. The solicitation invitation letter, shown in Figure 2, outlines the request from *Today's RDH*, inviting dental hygienists to participate in the inquiry. The same letter was emailed as a reminder one week following the initial letter. In addition, this letter was sent as a link on state association Facebook pages, the *Today's RDH* Facebook page, and the Facebook page of the researcher.

After participants voluntarily clicked the link embedded in the email invitation, or on the Facebook page, they completed the questions in Figure 1. The first set of questions prompted the participant to establish qualification for the survey. If the subject met criteria, they then completed the informed consent and the following survey inquiry. If the participant was not eligible, the respondent was led to a screen thanking them for their time and explaining they did not meet the study parameters.

Each qualifying participant who completed the entire survey was assigned a confidential participant number for anonymity, removing all identifiers from the data. Participants who attended an associate-degree entry-level program, maintained a license in Kansas, Illinois, Iowa, Nebraska, or Missouri, and have obtained a baccalaureate degree in the previous ten years comprised the final compiled data set. A spreadsheet listing the individuals phone number and email, corresponding with their assigned participant number, was kept in a separate document without the names of each participant for cross-checking follow-up only if the participant indicated a willingness to be contacted following survey completion.

Figure 2: Today's RDH Solicitation Email

Greetings *Today's RDH* Readers,

Emily Boge, a member of the *Today's RDH* advisory committee and a doctoral candidate at Franklin University in Columbus, Ohio, needs your help in completing her dissertation research. Her chosen topic is to study the perceived benefits of a dental hygienist obtaining a bachelor's degree when an associate degree is the minimum requirement for licensure in almost all the states within the United States, and in the District of Columbia. Emily plans to complete an open-ended qualitative survey to gather information, targeting the five states of Illinois, Iowa, Kansas, Missouri, and Nebraska in her research.

If you are willing to participate in the study described, have received your bachelor's degree since August 1, 2011, and are licensed to practice in one of these states, please click on the link below to answer her 20-minute survey. All data from respondents will be kept secure, and participant confidentiality will be respected.

Please click this link to participate:

LINK: <https://forms.gle/oag5q5kwnNDsPA2w6>

Kind regards,

Kara Vavrosky, *Today's RDH* Magazine

On behalf of:

Emily Boge, MPA, RDH, CDA, Doctoral Candidate at Franklin University

Doctoral Committee Chair: Dr. John Nadalin

Doctoral Committee Members: Dr. Donis Toler and Dr. Eric Hutchison

Researcher Role

The researcher role in this inquiry was one of organization, data collection, documentation, analysis, coding, and interpretation of data. The researcher acknowledged personal bias as an advocate for dental hygienists to pursue a baccalaureate degree and other higher education as an administrator of a dually accredited Commission on Dental Accreditation (CODA) dental hygiene and dental assisting department at a community college in a Midwest state. Cross-verification was used as needed through follow-up phone calls and emails with the researcher maintaining a separate file of clarifying field notes for all phone calls and emails in a locked digital system.

Analysis of Available Data

Single coding using the Giorgi (1985) approach to qualitative coding was completed.

These steps included:

- Researcher bracketed preconceptions within the transcripts and memos
- Researcher interpreted transcription for understanding
- Researcher described material through organizing and transcribing quotes and writing additional transcription field memos
- Researcher analyzed data for emerging themes, contacting only those who consented for clarity, as needed

The researcher developed a matrix to organize data from respondent surveys into themes using Excel software and utilized locked digital systems for storage. The themes were categorized into sub-themes to organize patterns of relevance (Creswell & Poth, 2018). A second review was conducted where the researcher reviewed the data to verify theme formulation a

second time (Creswell & Poth, 2018). Maxwell (2013) stated it is just as important to refute theories outside that of the researcher as to prove the theory stated by the researcher. Taking a second look at details provided an opportunity to gain clarity in conclusions. In addition, having an ability to follow-up for data accuracy, as needed, was a valuable aspect of this research plan. Obtaining additional feedback was limited as not all participants consented to follow-up phone calls or emails. A third review was then completed to evaluate data theme veracity. During this step, the data was reread by the researcher to verify theme formulation. The researcher outlined boundaries for each code then compared patterned themes from the data to the six main themes found in the literature review.

Previous research conducted on this topic focused on specific geographical areas but did not include the Midwest states (Kanji et al., 2011b; Kanji & Laronde, 2018; LaSpina et al., 2017; Smith et al., 2016). Dental hygiene programs serving the Midwest states may specifically benefit from the more geographically focused data set, gathered from their own regions, as in this inquiry. The participant answers were applied to the transformational learning theory, sensemaking, and the psychological contract in justification for the perceived benefits participants list in the responses to open-ended survey questions. All details were reviewed, and a final report is listed in the summation chapter, using the relevant data collected from the questions related to transformational learning to evaluate the theory.

Reliability, Validity, and Researcher Bias

Maxwell (2013) recommends that validity be kept separate from methods since it depends partially on conclusions made from data the researcher has collected through chosen methodology. When researchers spend necessary time considering potential threats to validity of

their research prior to data gathering, that acknowledgement contributes to the validity of listed results. When presenting the culmination of data in a research inquiry, it is important to recognize any details that may have affected the security of those conclusions as they were developed. These threats to security are the “validity threats,” as described by Maxwell (2013, p. 123). In qualitative research, the validity threats are often encountered after the methodology plans have been laid increasing the importance of diligent research planning prior surveying.

Additional threats to the validity of this study included potential existing relationships between the researcher and the participants in the study. It was assumed that the respondents were honest and open with candid responses given by each participant. The organization of dental hygiene is small in comparison to the entire organization of healthcare, and several participants who fit the criteria listed could be former students of the program for which the researcher is the administrator or known colleagues of the researcher. Additionally, there may be a perceived researcher bias by the participant, especially those in the same state as the researcher if the researcher were known by those answering the inquiry.

Maxwell (2013) states the researcher must set aside their own beliefs and perceptions to find the actual conclusions from the participant data without influencing or skewing the results through their own biased lens. Eliminating the entire influence of the previous experiences and perceptions of the researcher is impossible, yet the goal in a qualitative study is not to exclude this influence, but to “understand it and use it productively” (Maxwell, 2013, p. 125). The researcher acknowledged her existing bias and potential barriers yet used her knowledge of the subject matter and literature to her advantage as she analyzed the data collected in this inquiry.

Strategies for Addressing Validity Threats

The researcher stated to participants that anonymity would be respected as survey responses would be transcribed, and all data would be kept both securely with privacy respected. Kansas, Illinois, Iowa, Missouri, and Nebraska were the focus states in the study, yet dental hygienists who attended all schools in all states were invited to participate. In a mobile society this online survey inquiry was sent by *Today's RDH* to all within the pool of participants to decrease researcher bias and open the perspective population. These details all worked together to increase the availability of content-rich data.

Validity was considered as a whole puzzle rather than individual pieces. Considering the entire process of validity when formulating the research design assisted the researcher in uncovering potential threats before they had the chance to unknowingly effect or potentially compromise the study validity. One strategy used in the process of assessing validity was asking other dental hygiene education researchers, with greater longevity and research experience, to evaluate the research design to determine if they detected threats that the researcher had not personally identified. This method of discovering additional threats before the inquiry was disseminated was both relevant and practical. These researchers had planned and completed the design process before and had a greater knowledge and experience base regarding potential threats to efficacy in research.

Verifying the motivational factors specific to the baccalaureate degree by collecting rich data and coding of specifically transcribed copies of survey results, rather than only field notes, handwritten notes, or memos (Maxwell, 2013) was another practice utilized. The researcher analyzed the data for discrepant data, and recorded that data on another theme listing, as data that

refutes a theory or claim is often just as important as examining the data that support the researcher claims (Maxwell, 2013). This data was maintained for future research.

Collecting data to saturation decreased threats to validity as more support for responses or more opposition for alternative theories exists with greater numbers of participants (Maxwell, 2013). Identifying numbers to support the actual quantity of data that exists either to support or refute a theory, can influence validity within a study. Considering the sample size, the researcher utilized the actual numbers to place weight on the number of participants effected by the phenomenon (Creswell & Poth, 2018).

Verification

The researcher asked three other dental hygiene researchers to review questions throughout the process of survey creation to assure questions were not skewed to support one theory or another and would be accurately viewed by the participant population (Maxwell, 2013). The researcher intended to collect rich and accurate data, validating the respondent answers to the survey, identifying discrepant evidence as needed, triangulating data themes as they emerged, and coding comparison data as a strategy for testing validity. The researcher attempted to identify the potential threats to the validity of research prior to the solicitation emails and posts, thereby verifying the validity of data collected, which contributed to the overall validity of the research results (Maxwell, 2013).

Preventing Bias

Maxwell (2013) explained that a researcher must acknowledge bias and aim to reduce the influence of their own choices on the answers given by their study participants. It is best practice for researchers to accept that it is impossible to completely remove their own personal theories

from the analysis of collected data yet be prepared to react to the presence of their own bias. In this study, as a dental hygienist who has previously pursued and received various degrees in higher education and is currently working toward a doctoral degree, the researcher acknowledged a personal bias for advancing education as a dental hygiene practitioner and completed validity testing to assure data was rich in content rather than limited by personal bias. Completely eliminating the influence of the researcher is impossible (Hammersley & Atkinson, 1995), and the goal in a qualitative study is “not to eliminate this influence, but to understand it and use it productively” (Maxwell, 2013, p. 125). The researcher acknowledged the bias that existed, and the potential barriers yet used her knowledge of the subject matter and literature to her advantage as she analyzed both the literature available, and the new data collected in the inquiry.

Site and Participant Selection

Participants were selected who met outlined criteria following the completion of the first set of survey questions. They were then either prompted to the open-ended qualitative questionnaire to provide additional data or prompted to an ending screen thanking them for their time and informing them that they did not meet the research parameters for inclusion in the inquiry. Purposeful sampling was used to gather participants by sending emails to only dental hygienists and placing postings on Facebook pages specific to dental hygienists. To avoid bias in the collection of data, all responses were transcribed verbatim, and emails or phone calls took place only if any further questions were needed during coding for understanding and validation.

Measurements Taken and Instruments Used

Entering this study, the researcher understood that qualitative research is intended to report what is true while having flexibility “to be innovative” (Silverman, 2000, p. 2). This inquiry broadened the base of previous knowledge and research on this topic. The researcher felt confident in the overall understanding attained by reading and studying previous articles on the benefits, motivations, and incentives associated with achieving a baccalaureate education (Anderson & Smith, 2009; Kanji et al, 2011b; Smith et al., 2016), and she understood the importance of maintaining current as a credible content expert in the field of dental hygiene education. Continued literature review and knowledge gathering occurred as evidence continued to emerge from the scientific community throughout the process of this research.

Time Frame for Work

Following proposal approval, an email was sent from Kara Vavrosky, editor of *Today's RDH* in Figure 2, including a survey link soliciting participants, followed by a reminder email which was sent one week later from Ms. Vavrosky. After the two-week survey period was concluded, all data was collected, analyzed, and written in summary reports for submission to the dissertation committee for subsequent defense. The initial email was sent in early September 2021, with remaining processes completed in the months of October through December 2021.

Nonresponse, Permissions, and Standards

The outlined format ensured that data was gathered promptly and efficiently. The researcher had all participants agree to the Consent Form, as included in Figure 3. Each participant qualified for the inquiry based on the parameters set in the first section of questions, then completed the qualitative survey. It was planned that non-response within 30 days of the

beginning of the study would result in the dissolution of the study, but this path did not occur due to responses being received.

Figure 3: Informed Consent

Hello, my name is Emily Boge. I am a graduate student in the Doctor of Education in Organizational Leadership program at Franklin University in Columbus, Ohio. As part of the requirements for earning my doctorate, I am doing a research project, and I invite you to participate.

Why is this study being done?

The purpose of my project is to isolate the specific benefits of a dental hygienist obtaining a baccalaureate degree when an associate degree is the minimum required for licensure in five Midwestern states. The intent of this research is to survey licensed dental hygienists who have graduated from a baccalaureate degree program within the previous ten years and record their explanations of benefits for seeking a baccalaureate degree when an associate degree was adequate for licensure and clinical practice.

What am I being asked to do?

If you participate in this project, you will be asked to fill out a survey. If you are willing to provide your contact details at the end of the survey, I may contact you with additional clarifying or follow-up questions.

Taking part in this study is your choice.

Your participation in this project is completely voluntary. You may stop participating at any time. If you leave the study, there will be no penalty or loss of benefits you would normally have.

What will happen if I decide to take part in this study?

The survey consists of some multiple choice and some open-ended questions. It will take approximately 20 minutes. The survey questions include questions like, "Can you describe some of the factors that motivated you to begin your bachelor's degree?" and "How did your lifestyle change after you completed your bachelor's degree?" The survey will be accessed upon signing the consent below.

What are the risks and benefits of taking part in this study?

I believe there is little risk to you in choosing to participate in this research project. You may become stressed or uncomfortable answering any certain survey questions. If you become stressed or uncomfortable, you can skip the question, take a break, or stop taking the survey.

Confidentiality and Privacy:

I will not publish any personally identifying information. Your email and phone number will be asked, and provided voluntarily, allowing me to contact you for follow-up clarification on your answers only when needed. Answers will be kept confidential and anonymized for analysis, and all study data will be placed in a secure server. All information will be destroyed within 3 years of the study completion. Only my Franklin University dissertation chair and I will have access to the information. In addition, the Franklin University IRB has the right to review research records for this study.

Compensation:

You will receive no compensation for participating in this research project; however, the results of this project may impact the future education paths of colleagues in the field of dental hygiene and educators completing that advising.

Questions:

If you have any questions about this study, please email me at boge02@email.franklin.edu. You may also contact my dissertation chair, Dr. John Nadalin, at john.nadalin@franklin.edu.

If you have any questions regarding your rights as a research participant, please contact the Franklin University IRB Office at 614-947-6037 or irb@franklin.edu.

To Access the Survey:

Please consent below. If you do not wish to participate, please close out your browser window. These elements of Informed Consent conform to the assurance given by Franklin University's Institutional Review Board to protect the rights of human subjects for IRB-2021-43

Conclusion

This proposed study was the first of its kind held in five Midwestern states, isolating the area of geographic selection and state licensure, along with the duration of time passed since the participant has obtained the baccalaureate degree. Purposefully, no focus was placed on the specific field of study of the baccalaureate degree attained by participants as the inquiry focused on obtaining the baccalaureate degree benefits and motivations rather than the specific baccalaureate field studied by the participant. Further investigations could isolate each specific degree to study that factor, yet that was not the intent of this inquiry.

The completion of this qualitative research study could potentially justify current recommendations made from dental hygiene program advisors, program directors and chairs, and program faculty as they advise and encourage students to pursue a baccalaureate degree. An increase in recommendations could be made with the intention of meeting the long-term career goals of the student or licensee, regardless of whether those goals include a career outside the traditional role of clinical dental hygiene.

CHAPTER 2: LITERATURE REVIEW

This chapter presents the rationale for conducting further research into the benefits of a dental hygienist pursuing a baccalaureate degree. Building upon the work of previous research pertinent to this study, various aspects were investigated. Although documentation is available, limited research exists to support or refute a dental hygienist's decision to pursue a baccalaureate degree in states where an associate degree is the minimum required to obtain a license for clinical practice. The five Midwestern states in District VIII of the American Dental Hygienists' Association (ADHA) all allow licensure with a minimum of an associate degree and collectively, these states served as the focus of information gathering. Previous studies with an international and domestic geographic focus were researched as a basis for comparison of the specific data gathered and analyzed in Chapter 4.

This global inquiry was initiated using search engines available through the Franklin University Library databases, including the American Psychological Association (APA) PsycArticles, CINAHL Plus with Full Text, Dissertation and Theses Global (ProQuest), EBSCO Databases (with MEDLINE with Full Text), Education Full Text, Health Source: Both Consumer and Nursing Editions, OhioLINK, and ERIC Databases.

Key terms searched both separately and cross-referenced included:

- Dental hygiene
- Education
- Benefits of baccalaureate degree
- Bachelor's benefits
- Career goals
- Opportunities

- Education for non-clinical job
- Career satisfaction
- Self-perception of baccalaureate degree
- Advanced education
- Professionalism
- Motivation for higher degree
- Incentive for education

These searches, conducted over a period of three years, compiled various peer-reviewed research findings, previous dissertations on file, and other related information. Additionally, the American Dental Hygienists' Association staff was contacted to obtain previous white papers and relevant resources regarding the focus topic. Education and licensure pathways data was gathered through the American Dental Association Commission on Dental Accreditation, the American Dental Education Association, and from individual state licensing boards from the five focus states for comparison data purposes.

Review of the Literature

Upon review of previously completed literature, data was categorized according to theme with six emerging themes present. These themes provided an explanation on regional and global scales of the reasons dental hygienists gave for pursuing an education degree higher than what is necessary to obtain a license for clinical practice. The themes describe what individual dental hygienists aimed to achieve by earning a baccalaureate degree, yet they do not fully explain the dynamics within the organizational culture of dental hygiene that motivate additional education, specifically in the five targeted states of this inquiry. In addition to uncovering the six themes,

this literature review investigates the behavioral and cultural motivators for change within the culture, to later be applied to inquiry findings in Chapter 4.

The six themes of perceived benefits of licensed dental hygienists obtaining a baccalaureate degree found in current reviewed literature include: a desire to attain personal satisfaction (Anderson & Smith, 2009; Kanji et al., 2011a; Sunell et al., 2016), increased knowledge and critical thinking (Anderson & Smith, 2009; Barnes et al., 2007; Kanji et al., 2011b; Pohlak, 1996; Rowe et al., 2008; Sunell et al., 2016), increased employment opportunities (ADHA 2019a; Battrell et al., 2016; Brand & Finocchi, 1985; CODA, 2019; Dominick, 2007; Monson, 2012; Pohlak, 1996; Rowe et al., 2008), increased status or recognition (Battrell et al., 2016; Kanji et al., 2011a; Sunell et al., 2016), access to higher degrees beyond a baccalaureate degree (Anderson & Smith, 2009; Boyd & Bailey, 2011; Kanji et al., 2011b; Rigolizzo & Forrest, 1983; Rowe et al., 2008), and additional tangible measurable benefits including public or non-public rewards that are received for improvement in skills, education, or training such as additional money, promotions, or gifts (Anderson & Smith, 2009; Baum & Payea, 2005; Mishler, 1983; Stolberg & Tillis, 2016). Reviewed research states these perceived benefits or motivating influences appear repeatedly in studies that inquire why a dental hygienist would choose to pursue a baccalaureate level education; however, a gap in the research exists, particularly in reference to information taken specifically from the Midwestern states within District VIII of the ADHA. In these states, there are fewer dental hygiene programs spread over a larger geographic area; and there are a limited number of dental hygiene programs that have an articulation agreement to ease the transition from an associate degree into a baccalaureate (ADHA, 2014).

Current research supports the fact that the individual role of the dental hygienist, in consideration of the *ADHA Professional Roles of the Dental Hygienist* (ADHA, 2018), including

clinician, corporate, public health, researcher, educator, administrator, and entrepreneur, may change following the completion of a baccalaureate degree (Kanji & Laronde, 2018). Dental hygiene program advisors, program directors or department chairs acting as administrators, and program faculty are often asked if the attainment of a baccalaureate degree will benefit students in their dental hygiene career. Currently, an associate degree is the minimum entry-level education required by both individual states and the accreditation commission within the United States (Commission on Dental Accreditation (CODA), 2019; ADHA, 2015), and literature to support the individual benefits of a baccalaureate degree have been documented, yet limited literature is available to determine if individual motivational factors that inspire a student to pursue a baccalaureate degree come to fruition. Also, there is limited evidence that those same students achieve their desire to work outside clinical practice after receiving a baccalaureate degree. This study also inquires if the participant has changed their role within the profession of dental hygiene following the completion of their baccalaureate degree. This question was added to seek an answer to whether the data from the Midwest states regarding dental hygienists changing their roles in the profession matches that of research reviewed (Kanji & Laronde, 2018).

Existing research has focused on specific geographical areas, not including the Midwest states (Kanji et al., 2011z; Smith et al., 2016; Kanji & Laronde, 2018; LaSpina et al., 2017), and dental hygiene programs serving the Midwest states would benefit from more focused data resulting from this study. Details uncovered in the literature from other countries and other states may not reflect similar benefits and viewpoints expressed by participants in the five focus states.

The purpose of this study was to support educators and advisors in advising the future dental hygiene workforce while contributing to the overall body of evidence-based research in

the dental hygiene profession. These individuals, acting as educational mentors, could utilize this additional knowledge to justify further education, specifically a baccalaureate degree, when counseling students and stakeholders through the listed benefits from recent baccalaureate degree graduates who chose to obtain a baccalaureate. Students may also benefit from this knowledge because it may verify whether spending the additional time and money to obtain a bachelor's degree results in additional benefits and employment opportunities within the culture of dental hygiene. Dental hygiene leaders may potentially benefit from this research as decision-makers within the profession moving forward in a plan for the organization, wishing to institute change. Reviewed literature was separated by theme as outlined in the remainder of the literature review.

Personal Satisfaction

Personal satisfaction is one theme noted in various research studies which were reviewed. According to Anderson and Smith (2009), one motivational factor reported by dental hygienists that chose to pursue additional education is the pride in the accomplishment of completion. Kanji et al. (2011b) reported their research participants listed an increased level of self-confidence and credibility after obtaining their baccalaureate degree as a dental hygienist. The participants in this same study specifically reported a greater perception of being considered a professional after obtaining the higher education level. In a more recent qualitative study, Sunell et al. (2016) echoed the claim that personal satisfaction is a motivational factor for dental hygienists obtaining a baccalaureate degree, reporting that their respondents expressed a greater level of confidence in their abilities and an increased feeling of independence in their ability to assess and relate education to their daily work. The additional details obtained in baccalaureate programs contribute to personal satisfaction and increased confidence in this population (Anderson & Smith, 2009).

Increased Knowledge and Improved Critical Thinking

Current literature indicated that personal pursuit of knowledge and desire for improved techniques in critical thinking were another theme of explanation given by dental hygienists who chose to pursue a baccalaureate degree following entry-level education and licensure. According to Noddings (2018) and Kurfiss (1988), critical thinking is a crucial component for both educators and researchers who wish to be successful in their respective fields. Since research indicates dental hygiene graduates of baccalaureate programs are more likely to be employed in positions outside of clinical practice than other dental hygienists (Anderson & Smith, 2009; Rowe et al., 2008), it makes sense that these skill sets remain a motivation in achieving a higher degree. Kanji et al. (2011b) stated individuals who obtained a baccalaureate degree following entry-level courses and licensure as a dental hygienist stated a noted increase in critical thinking skills, evidence-based decision-making skills, and their own abilities to provide comprehensive care.

Pohlak (1996) also stated dental hygienists who were graduates of baccalaureate programs reported increased knowledge and levels of critical or analytical thinking. Sunell et al. (2016) noted three (3) specific differences between diploma and baccalaureate degree dental hygienists in British Columbia, Canada. Those who received a bachelor's degree reported 1) an increased overall knowledge base, 2) an increased depth of understanding about the importance of research within the profession of dental hygiene, and 3) an increased level of skills in areas of evidence-based decision making and quality of care. Research also indicates 66% of students surveyed in associate degree dental hygiene programs are interested in completing a bachelor's degree to gain greater levels of knowledge and critical thinking (Barnes et al., 2007, p. 30).

Since critical thinking is a component of professionalism that appears repeatedly in reviewed literature, critical thinking is often seen tied to professionalism (Barnes et al., 2007; Pohlak, 1996; Anderson & Smith, 2009; Rowe et al., 2008). As a professional association, the ADHA promotes improved critical thinking, continuously seeking opportunities for increased knowledge, employment opportunities, and access to higher education degrees for dental hygienists (Battrell et al., 2016). Trends in education, healthcare, regulation, and legislation per state all fuel the desire for dental hygienists to seek improvements in critical thinking as each year new regulation and changes in education programs emerge in the United States. These opportunities are often achieved through the utilization of skill sets and critical thinking gained through both clinical experience and additional education (ADHA, 2019a). Increased knowledge and improved critical thinking were formulated as a theme strongly linked to professionalism in the global review of relevant literature.

Increased Employment Opportunities

Dental hygienists are trained with the ability to treat patients in a variety of patient care settings as part of the Commission on Dental Accreditation (CODA) *Accreditation Standards for Dental Hygiene Education Programs* (CODA, 2019). These standards require students in an entry-level program to be exposed to “additional coursework and experiences, as appropriate, to develop competent oral health care providers who can deliver optimal patient care within a variety of practice settings and meet the needs of the evolving healthcare environment” (CODA, 2019, p. 17). Once graduated, several states restrict the ability of a dental hygienist to provide care in settings outside clinical practice without the presence of a licensed dentist; therefore, most licensed dental hygienists in the United States are employed in a traditional dental practice

setting as a clinical practitioner providing services with a dentist overseeing these services on various levels of supervision per individual state practice acts (ADHA, 2019c).

As preventive dental care needs continue to increase, along with the average age of the United States population, dental hygienist roles continue to evolve (Bureau of Labor Statistics, 2019). Many states are breaking new ground as they create innovative programs to deliver care in locations where patients can more easily access services such as inside their own homes, in schools, in community health centers, and in hospital settings. These innovative approaches to clinical care have come forth in numerous states, and the employment status for dental hygienists is projected to grow nationally at a rate of 11% between the years 2018 and 2028 (BLS, 2019).

Increased employment opportunities, specifically in careers outside the area of clinical dental hygiene practice, are an emergent theme pervading research in this field. Pohlak (1996) stated baccalaureate degrees obtained by dental hygienists open doors to additional career options in the areas of education, administration, research, and graduate programs. Monson (2012) agreed, stating the needs of the public are growing and with that demand for educators is growing too. Rowe et al. (2008) stated that dental hygiene graduates who receive their bachelor's degree have a higher incidence of leaving private practice to pursue roles in research or education than those without a baccalaureate degree. Brand and Finocchi (1985) stated although half of the dental hygienists surveyed remained in clinical practice following the attainment of a bachelor's degree, 24% of survey participants became educators, 6% obtained careers in public health, 3% began hospital or institution hygiene positions, and 2% took on roles as dental office managers. In this same survey, 63.6 % of associate degree dental hygiene students stated they felt employment opportunities increased when dental hygienists chose to pursue a baccalaureate degree. Dominick (2007) concurred, reporting baccalaureate degree programs are intended to

broaden the dental hygiene skills base, exposing the individual to a variety of career options.

Dominick particularly focused on dental hygienists obtaining a bachelor's degree so they could fill the demand for licensed dental hygiene educators to teach and administer to entry-level programs.

CODA's *Accreditation Standards for Dental Hygiene Education Programs* outline that full-time faculty who teach in the didactic classroom of an entry-level program must "possess a baccalaureate or higher degree" (CODA, 2019, p. 32). In addition, this document states all entry-level dental hygiene program directors must "be a dental hygienist who is a graduate of a program accredited by the Commission on Dental Accreditation and possesses a masters or higher degree or is currently enrolled in a masters or higher degree program or a dentist who has background in education and the professional experience necessary to understand and fulfill the program goals" (CODA, 2019, p. 30). Furthermore, the document requires the program director background "include administrative experience, instructional experience, and professional experience in clinical practice either as a dental hygienist or working with a dental hygienist" (CODA, 2019, p. 31). Monson (2012) states the dental hygiene profession has a high demand for educators who are trained and qualified for addressing the need and educating the future of the preventive dental profession.

Battrell et al. (2016) describe the work done by the ADHA as the organization continues to seek opportunities for increased knowledge, employment opportunities, and access to higher education degrees for dental hygienists. The first step, beyond licensure, to these advanced degrees and subsequent career options outside clinical practice, is often a baccalaureate level education. As stated earlier, one cannot rise to the level of teaching in the classroom without a baccalaureate degree or chair and direct a dental hygiene educational program without

completing a master's degree. One cannot pursue a master's degree without first earning a baccalaureate.

Battrell et al. (2016) opined that trends in education, healthcare, regulation, and legislation per state will all drive the individual changes within states regarding education and practice settings. For this reason, leaders in dental hygiene encourage a baccalaureate education as work continues within the organization to reform legislation in individual states. Battrell et al. explained that ADHA, as a professional association, continues to include the addition of clinical practice tasks that allow dental hygienists to practice at the top of their scope of practice in their strategic plan goals. The critical thinking skills taught at the bachelor's level contribute to the justification of these potential changes.

Status and Recognition

Dominick (2007) stated, "to prepare graduates for leadership roles in the profession of dental hygiene, baccalaureate education is integral" (p. 1). Adults in various career fields perceive that with knowledge, an increase in status or recognition is often apparent as a reward for the achievement of that knowledge (Mishler, 1983). This rings true regarding several motivational factors found in literature, including the phenomenon that dental hygienists report increased perceptions of status and recognition from the public they serve following the attainment of a bachelor's degree.

Kanji et al. (2011a) stated that the increase in education, specifically outcomes-related research completed by dental hygienists, can be effective in positively influencing governmental, professional, and public opinions of the value of higher-level education for dental hygiene. This positive impression may result in both state-level regulatory change and improved patient care outcomes in preventive dental care. Kanji et al. (2011b) also stated the dental hygienists

surveyed reported “valued lifelong learning and continued education” (p. 314). Sunell et al. (2016) concurred, stating participants felt an increased level of professional involvement once a baccalaureate degree was obtained and that status and recognition increased the perception of their standard of care.

Access to Higher Degrees

Rowe et al. (2008) cited the work of Rigolizzo and Forrest (1983), stating one goal of baccalaureate degree programs, specifically focused on dental hygiene, is to prepare dental hygienists for employment positions, research, and higher education programs. With 327 accredited dental hygiene programs in the United States, and 51 of these programs offering a bachelor’s degree completion in dental hygiene (American Dental Education Association, 2021), tracking access and pathways to bridge from an associate degree to a baccalaureate degree is a significant task. Because a student can obtain more than one degree from one single college or various degrees at various colleges, it is difficult to track the earning of each degree or certification (ADHA, 2014).

Upon inquiry via email Ms. Ashley Grady, staff member at ADHA, Ms. Grady reported there is currently no mechanism to track the actual number of dental hygienists in each state that have a baccalaureate degree (A. Grady, personal communication, 2020). Each state tracks licensure based on the minimum competencies met for granting that licensure. Ms. Grady also stated ADHA tracks the individual highest degree earned by each member of the association, yet not all dental hygienists are members of the professional association. Upon inquiry to the five individual state dental boards’ executive directors in the focus states, administrative staff in each state replied via email, reporting the numbers of licenses granted at the time of the last licensure renewal period, yet stated there is neither a mechanism for data collection nor reporting

regarding the highest degree earned by dental hygiene licensees in each state. Email correspondence with state boards was retained electronically with other secured data.

Regardless of which pathway a student chooses to take as they work to obtain the bachelor's degree, if the bachelor's degree is specifically in dental hygiene or in a related field, or if a dental hygienist desires a master's degree or doctorate degree, the baccalaureate degree serves as a steppingstone to other opportunities. As previously stated, the access to higher degrees to attain positions in non-clinical roles as a dental hygienist begins at the bachelor's level. Anderson and Smith (2009) report certain states have passed legislation for advanced dental hygiene practitioner models. These models often require a master's degree level education prior to licensure in the respective titles. If a dental hygienist already has a bachelor's degree, either in dental hygiene or has an associate degree in dental hygiene and a baccalaureate in a related field, the advanced dental hygiene practitioner (ADHP) education process is less time intensive in achieving the more diverse practice act defined by the individual state for the ADHP profession. This provides an easier transition from dental hygienist to ADHP, also known as a dental therapist, in the states where the education pathway is already established (Smith, 2009).

Current CODA standards are very prescriptive about the type of degree required for providing classroom education and educational program director assignments. Boyd and Bailey (2011, p. 1035) stated that colleges often prefer educators attain a minimum of a master's degree prior to hiring them for positions in dental hygiene education programs although a bachelor's degree is considered the required minimum by CODA (2019). Kanji et al. (2011b) reported that after a dental hygienist obtained a baccalaureate degree, those surveyed "expressed a greater interest in pursuing additional formal education" (p. 314). Battrell et al. (2016) affirmed the importance of higher education as does the mission statement of the ADHA, "to support dental

hygienists throughout their career lifecycle and advance the dental hygiene profession by developing new career paths, expanding opportunities for care, and providing the latest training and information” (ADHA, 2019e).

Tangible and Measurable Benefits

Stolberg and Tilliss (2016) reported baccalaureate education can provide tangible skill sets that prepare dental hygienists to provide care for diverse populations, yet these researchers do not state whether their data supports a baccalaureate degree providing the tangible benefits to deliver a measurable return on investment. Various research studies in other fields indicate increases in tangible and measurable benefits after an individual obtains a higher degree of education, yet Stolberg and Tilliss (2016) did not concur; in fact, they reported that some dental hygienists surveyed feel they would not see a return on investment if they chose to obtain their bachelor’s degree and remained in practice as a clinical dental hygienist. Some measurable benefits of obtaining a baccalaureate degree in other professions include an increase in salary and overall lifetime earnings. Additionally, other professions noted an increase in the inclusion of work-associated retirement benefit plans such as profit-sharing or a 401K and an increase in responsibilities on the job once an individual earns a bachelor’s degree (Baum & Payea, 2005; Mishler, 1983), yet it is unclear the overall level that dental hygienists experience this same phenomenon.

Anderson and Smith (2009) inquired if tangible benefits were attained and reported by dental hygienists who obtained a bachelor’s degree. This research provided several points of discussion and varied opinions. Some dental hygienists surveyed did not feel additional tangible benefits would absorb the time and financial cost that comes with a baccalaureate education if the dental hygienist remained in clinical practice rather than pursuing a non-clinical position. In

the same study, most participants surveyed indicated that if a dental hygienist wanted to stay in clinical practice, an associate degree was sufficient for the tasks completed within the dental practice setting.

This data, however, conflicted with reports that many of the same participants surveyed also felt the minimum level of degree issued for a dental hygiene education should be a bachelor's degree in dental hygiene (BSDH). It often takes four years for students to obtain an associate degree considering all coursework required by associate degree programs including two semesters of pre-requisite studies and two additional years of program coursework and considering that existing dental hygiene-specific bachelor's degree programs also are estimated to be completed in four years. Many participants felt this level of education warrants a baccalaureate degree upon completion. Although Anderson and Smith (2009) reported further research is needed to convey if the actual motivational and tangible benefits match what is perceived in previous research, participants in the study did report the benefit of tangible pride in receiving a baccalaureate degree as a dental hygienist (Anderson & Smith, 2009, p. 1230).

Behavioral and Motivational Justifications for Change

Cawsey et al. (2016) explained individuals within an organization must discover specific opportunities for organizational change and make recommendations after considering the potential costs versus potential rewards of accomplishing change. Relating this phenomenon to the organization of dental hygiene, it has been stated that dental hygienists who place additional education as a high priority may wish to enter careers outside of clinical dental hygiene practice (ADHA, 2018). The field of dental hygiene is evolving, growing to meet new demands as science continues to support the link between oral health and total body health (Babu & Gomes, 2011). As Cawsey et al. (2016) explained, in an organization where rapid change is occurring, it

is critical for the organization to effectively adapt and consciously direct their organizational cultures and behaviors to reflect the vision they wish to obtain. If the profession of dental hygiene wishes to advance education requirements, it is during this time of rapid change that it may be the best to make educational advancements.

Sensemaking

Mischler (1983) researched goals for adults over the age of 25 who recently sought a baccalaureate degree, indicating the top two goals of these adults included entering a new career and gaining the satisfaction of earning a degree. The notion of "sensemaking," as outlined by Bolman and Gallos (2011), may explain the individual quest for baccalaureate degree-seekers, specifically those who are already employed in a career which does not require a bachelor's degree who chose to continue their education. Sensemaking consists of three natural phases that occur innately during the decision-making process: observing an event, considering what happened, and reacting are steps taken in many situations by leaders and followers alike. The different light shed upon this topic by the Bolman and Gallos resonates specifically in dental hygiene, in that a range of factors influence sensemaking, and these factors may include one or more of the six themes previously discussed.

Leaders are charged with the duty to incorporate all aspects into the structure of addressing change rather than only the concerns that are easy and predictable; in addition, all planned changes do not necessarily end in the planned result (Cawsey et al., 2016). Sensemaking leads to more effective decision making because it encourages leaders to slow down, gather all the information, and look at potential change through a clear lens rather than a lens tainted with their previous experiences, perceptions, or desired results (Bolman & Gallos, 2011). Sensemaking practices lead to a greater level of informed decision-making.

Groopman and Hartzband (2008) discuss the need to use cognitive science in the medical field, with the intent of improving decision making. These scientists state the use of technology in medicine is important, yet medical professionals cannot rely solely on technology. Rather, by using sensemaking these professionals can make more effective comprehensive decisions. This is a valid example of why sensemaking applies to various organizational behavior decisions across various medical professions where individuals complete the process of observing an event, considering the results of the event, and reacting accordingly (Mischler, 1983).

Sensemaking also applies to higher education, and more specifically, health professions higher education. Educators in health sciences can mirror the sensemaking practices when addressing the daily concerns of students, so students can carry the process into both didactic coursework and clinical patient care. By using the concept of reframing, as discussed by Bolman and Gallos (2011), dental hygienists can step back from the decision they are attempting to make, obtain additional information, and shift into a mode where they can reframe the situation to assess why they would benefit from the decision made. In this case, that decision would include why dental hygienists would want to achieve the higher degree. By taking the steps recommended in both sensemaking steps then they can establish a reasoning behind seeking that goal prior to pursuing the degree.

Psychological Contract

Assumptions, values, and artifacts within the individual culture make up the behavior of an organization (Schein, 1992). Rousseau (1989) first outlined the concept theorizing that within an organization there exists an unwritten contract between a member of the group and the organization. This phenomenon, termed the psychological contract, defines suppositions that are unrecorded and are often the underlying motivation for many decisions for change, how the

members of the organization behave and respond to changes within the organization, and the relationships that are built and maintained in the organization.

The pursuit of a non-clinical career path for a dental hygienist often includes attaining a higher level of education to prepare for the challenges of that new career path (Pohlak, 1996; Monson, 2012; Rowe et al., 2008; Brand & Finocchi, 1985; Dominick, 2007; Battrell et al., 2016). Since the psychological contract is not always clear within an organization such as dental hygiene, and is often unspoken and informal, the individuals must seek to first define the psychological contract to understand it in context. The psychological contract within achieving a non-clinical role in dental hygiene often involves attaining a higher education than what is required for a clinical role. For continuous organizational development to occur it is advised that underlying context first be acknowledged (Nadler & Tushman, 1989). Then, educators and administrators responsible for advising students on further education, following attainment of what is required for licensure in dental hygiene, can be justified. Then it can be said that a decision to recommend the pursuit of a baccalaureate degree following the education required for licensure is an evidence-based act of advising based on the organization psychological contract that values education as a high priority.

Literature Review Summation

The perceived benefits of licensed dental hygienists obtaining a baccalaureate degree found in current reviewed literature include: a desire to attain personal satisfaction (Anderson & Smith, 2009; Kanji et al., 2011b; Sunell et al., 2016), increased knowledge and critical thinking (Anderson & Smith, 2009; ; Barnes et al., 2007; Kanji et al., 2011b; Pohlak, 1996; Rowe et al., 2008; Sunell et al., 2016), increased employment opportunities (ADHA 2019a; Battrell et al., 2016; Brand & Finocchi, 1985; CODA, 2019; Dominick, 2007; Monson, 2012; Pohlak, 1996;

Rowe et al., 2008), increased status or recognition (Battrell et al., 2016; Kanji et al., 2011a; Sunell et al., 2016), access to higher degrees beyond a baccalaureate degree (Anderson & Smith, 2009; Boyd & Bailey, 2011; Kanji et al., 2011b; Rigolizzo & Forrest, 1983; Rowe et al., 2008), and additional tangible measurable benefits including public or non-public rewards that are received for improvement in skills, education, or training such as money, promotions, or gifts (Anderson & Smith, 2009; Baum & Payea, 2005; Mishler, 1983; Stolberg & Tillis, 2016).

This literature review indicated that a broader research agenda regarding the actual versus anecdotal, or perceived, benefits of a dental hygienist obtaining a baccalaureate degree when an associate degree is all that is required for entry-level licensure is a valid field of study. Through a comprehensive review of current research in this field, six themes emerged, which explained the documented, perceived motivational factors for an individual to seek a baccalaureate degree following an entry-level degree in dental hygiene. By listing these themes, a qualitative research study was proposed and completed to compare these lines of explanation to the thoughts and motivations of those who participated in the proposed study and reported their own individual experiences.

This study was the first of its kind held in five Midwestern states, isolating the area of geographic selection and state licensure. These five states: Illinois, Iowa, Kansas, Missouri, and Nebraska, all possess similar licensure requirements, dental hygiene population, and state practice acts. Purposefully, no focus was placed on the specific field of the baccalaureate degree as the study focused on obtaining the baccalaureate degree benefits and motivations rather than the specific topic of study the participant has chosen in their baccalaureate journey; furthermore, the duration of time that had passed since the participant had obtained the baccalaureate degree

was held to ten years or less to ensure an accurate account of benefits listed from the memory of each participant.

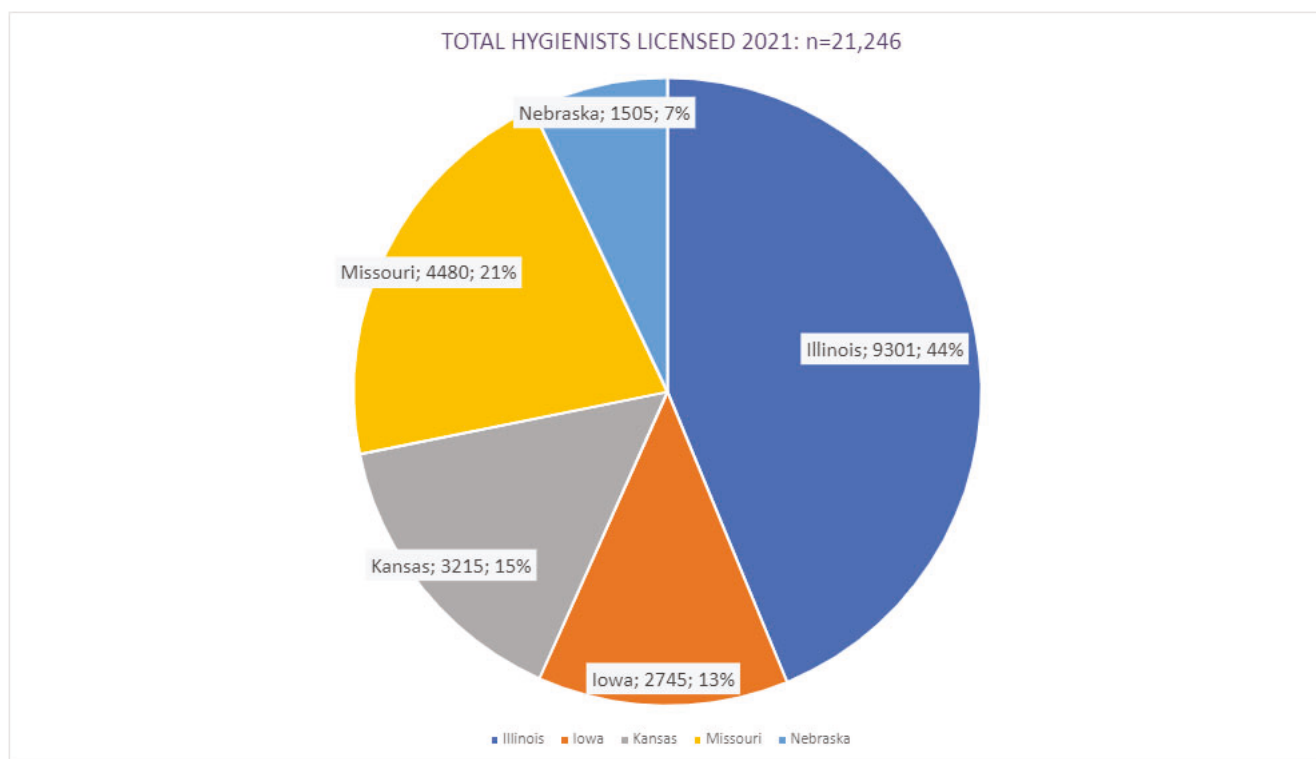
Further investigations could isolate each specific degree to study that factor, yet that is not the intent of this research. The completion of this qualitative research study attempted to justify, and potentially increase, the occurrence of recommendations made from dental hygiene program advisors, program directors and chairs, and program faculty to advise the pursuit of a baccalaureate degree. If these advising sessions are held with the intention of preparing for the long-term career goals of the individual counseled, this qualitative research will also add to the overall body of literature available that may support an individual pursuing a baccalaureate degree as a dental hygienist.

CHAPTER 3: METHODOLOGY

Research Design

This study employed a qualitative methodology, using a maximum variation purposeful sampling strategy. Since there was no data available to track what percentage of those potential participants had a bachelor's degree, it was difficult to compute a number for saturation of data. The dental hygiene community in the Midwest is limited to a pool of just over 21,000 participants, as gathered in email communication to obtain licensee numbers from each of the five-state dental board executive assistants, as noted in Figure 4. The researcher recognized saturation when responses became repeated from participants within the available data pool.

Figure 4: Total Number of Hygienists in the Midwest by Licensure



The target number for survey completion was 20 dental hygienists who had received an associate degree then continued their education to obtain a baccalaureate degree within the previous ten years. Ten years was defined as between the dates of August 1, 2011, and August 31, 2021. Surveys were completed utilizing the Google forms program to compile and information was stored in a password-protected format on Google. Following the data gathering, all surveys were memoed, recorded, stored verbatim, and coded for data analysis using Microsoft Excel locked files to store the patterns recognized and the themes developed.

In previous studies, researchers have used various methods to obtain information about the motivations and benefits for members of the profession of dental hygiene who pursue additional formal education. Anderson and Smith (2009) utilized a quantitative methodology design to obtain ratings on a five-point Likert scale to measure the perception of value dental hygienists placed on receiving a baccalaureate degree in dental hygiene, with respondents stating they felt their associate degree prepared them for the challenges of clinical practice. Boyd and Bailey (2011) used a combination of a demographics and an open-ended question survey that was distributed via email to obtain information on barriers to dental hygienists continuing their education to achieve a higher degree. Rowe et al. (2007) used a quantitative 30-question closed-ended survey to investigate if dental hygienists who obtained bachelor's degrees have a greater likelihood of obtaining positions in a non-traditional setting outside of clinical practice. These various inquiries utilized both qualitative and quantitative studies to capture information from the population of the dental hygiene profession, yet none of these studies isolated dental hygienists who have already achieved a baccalaureate degree to describe the benefits they have experienced since obtaining that degree. In addition, no previous study in this field applies Mezirow's theory of transformational learning to identify if changes occurred in self-understanding, personal belief

systems, or perception of personal needs of the participants following the receipt of a baccalaureate degree.

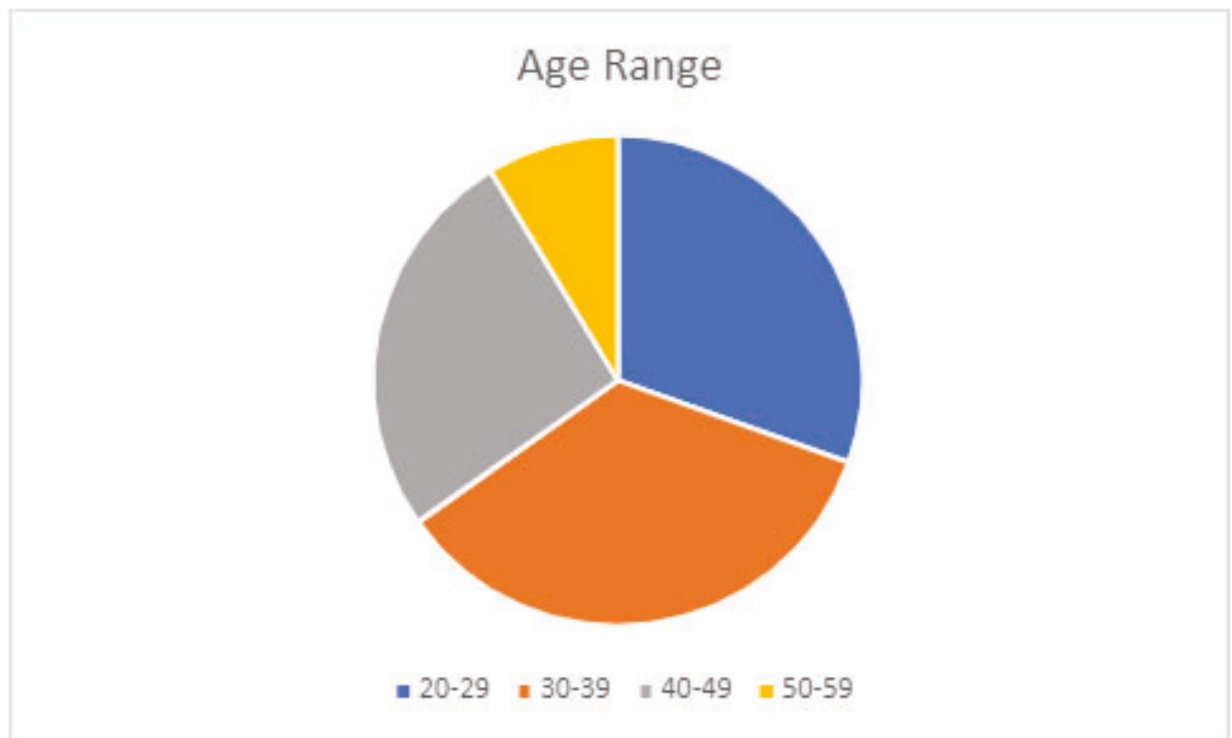
When discussing benefits and individual experiences, quantitative research provides an opportunity for open-ended response and potential for follow-up questioning that is often unavailable using qualitative methodology (Creswell & Poth, 2018). Qualitative research focuses on gathering each subjective, lived experience from the participant regarding the topic studied while avoiding the personal biases of the researcher (Creswell & Poth, 2018).

In this study, the researcher utilized qualitative research methodology while also applying the adult transformational learning theory to help explain the intangible benefits dental hygienists associate with seeking baccalaureate degree. This inquiry presented an open-ended survey, which took 30 minutes to complete, to obtain the personal beliefs of dental hygienists as to the benefits of receiving a bachelor's degree. The researcher then organized the available data to discover the transformational meaning of obtaining a baccalaureate degree when an associate degree is the minimum requirement for licensure in the five states considered.

The following demographics were compiled regarding the population of the 23 participants who qualified for the inquiry in the first section of the survey and answered all four sections of the questionnaire, including the completion of the consent form.

Participant Demographics

Figure 5: Participant Age; n=23



Participants ranged in years of age from 20-29 to 50-59, as noted in Figure 5. No participants reported an age exceeding 59 years old. Graduation dates from dental hygiene associates programs ranged from 1984-2019, with all 23 attendees graduating from accredited dental hygiene programs located in cities within the five focus states prior to pursuing a bachelor's degree.

Presentation of Data

Five fields of study were listed by participants who chose to pursue their bachelor's degree, outlined in Figure 6. Although six participants reported earning their master's degree, and three reported current enrollments in a master's program at the time of the survey, no

respondents reported earning an academic degree beyond a master's degree. Of the 23 baccalaureate degrees obtained, 11 participants chose to study a Bachelor's in Science – Dental Hygiene. The remaining 12 participants chose other fields of study within the fields of science and health science.

Figure 6: Type of Baccalaureate Degree; n=23

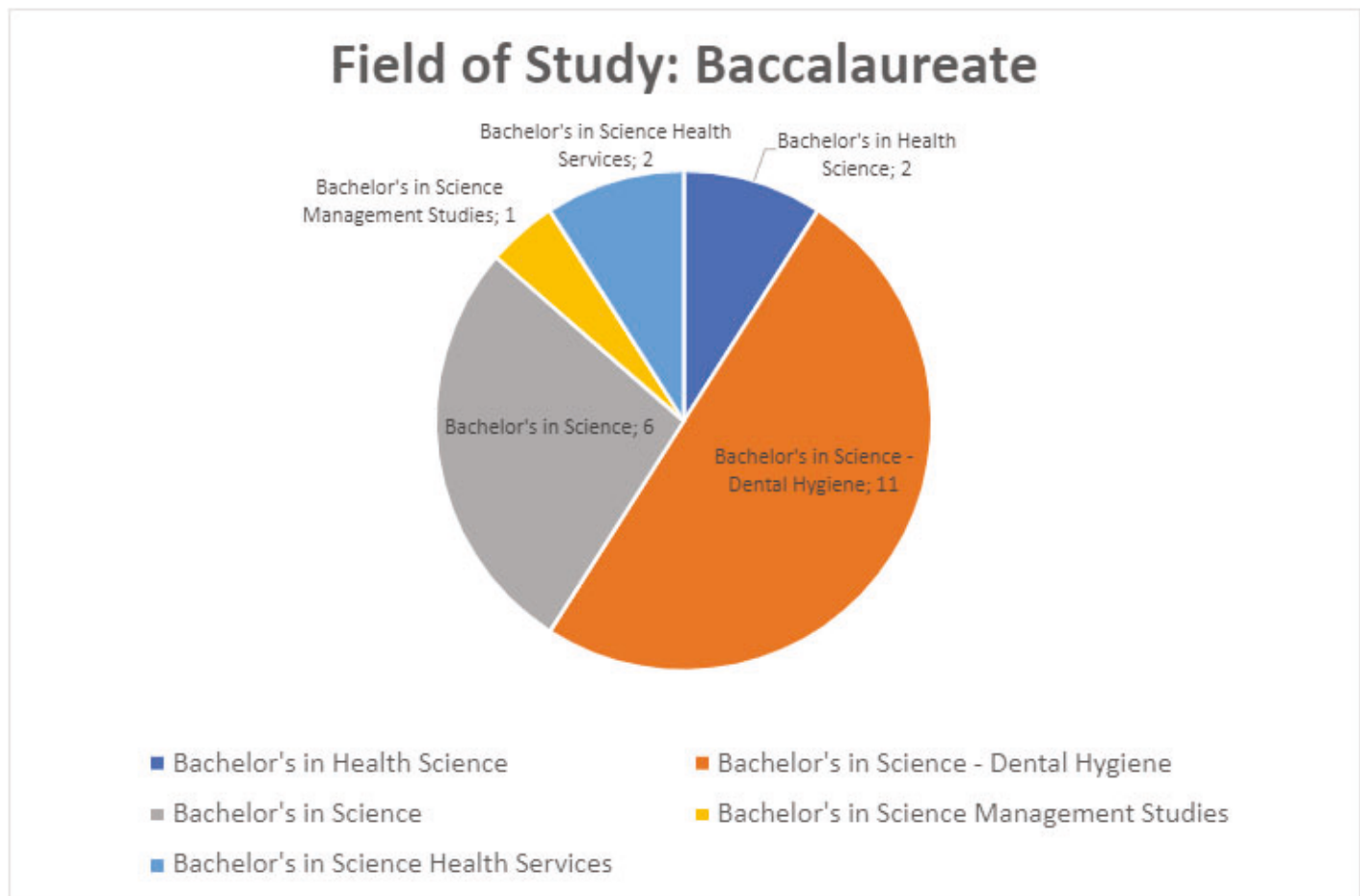
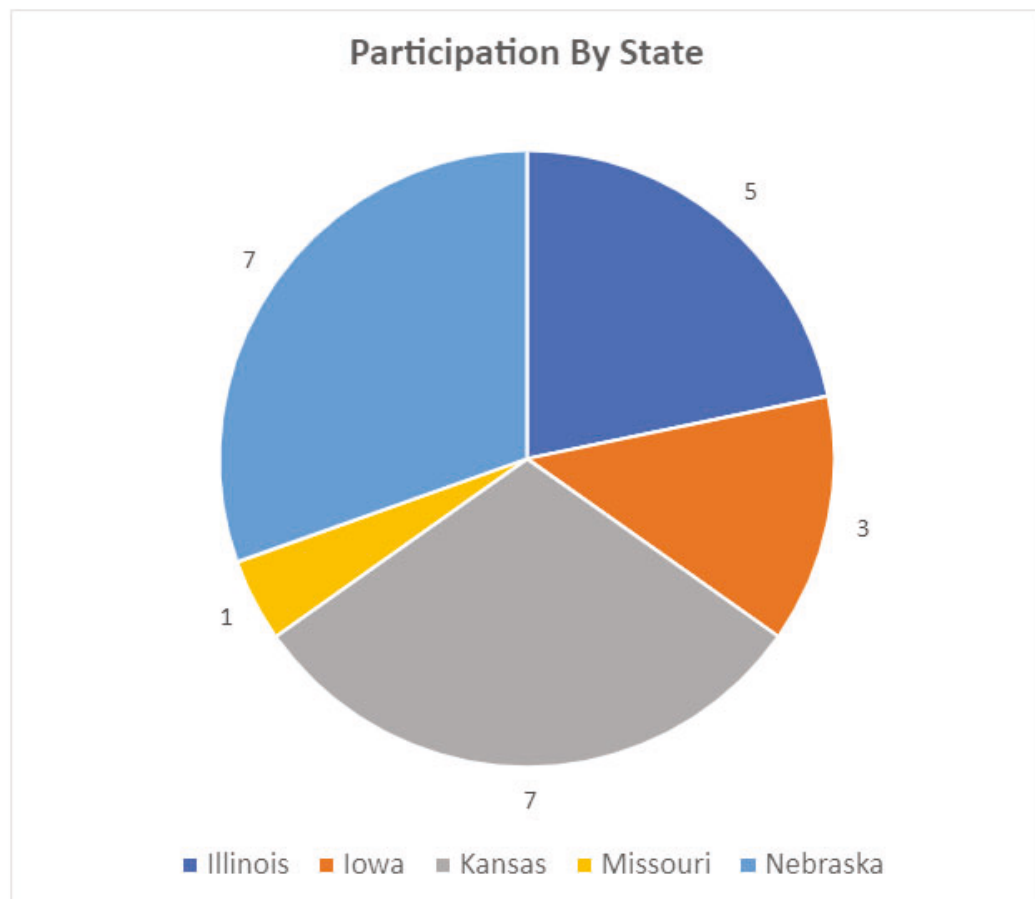


Figure 7 showed the state each participant claimed as their primary state of practice, defined as the state where the participant spends the greatest amount of their working hours each year.

Three of the 23 participants were licensed in more than one state.

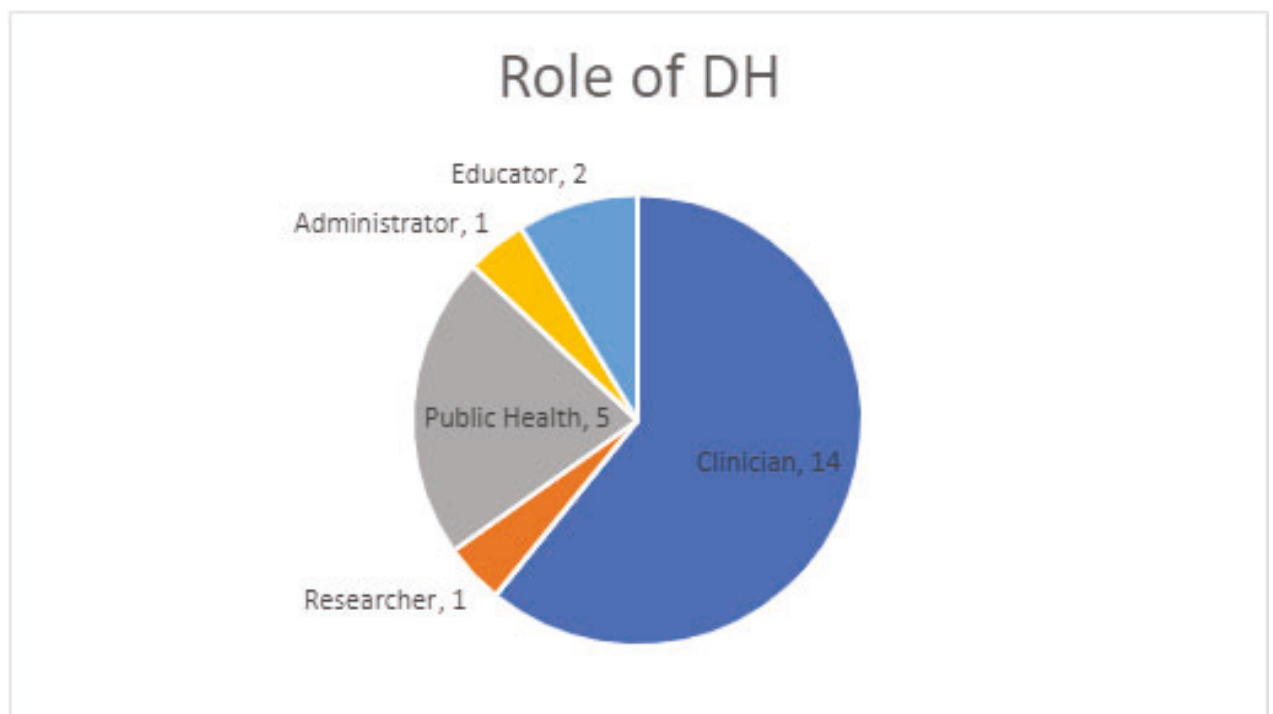
Figure 7: Participation by State; n=23



The demographics data showed five of the seven roles of the dental hygienist were represented in the participant population; no participant listed working in the corporate sector or entrepreneur roles. As seen in Figure 8, nine of the of the 23 dental hygienists surveyed reported that they spent the greatest number of working hours each year serving in dental hygiene careers working as: researcher (1), public health employee (5), administrator (1), and educator (2).

The remaining 14 of the 23 participants were employed in clinical practice as their primary dental hygiene role. This data can also be stated as 61% of the population of dental hygienists surveyed maintain a clinical dental hygiene position while 39% work in another role of the dental hygienist. This statistic is significantly higher than that of the general dental hygiene population, with 93% of all individuals employed in a clinical dental office setting and 7% employed in other roles of the dental hygienist (ADHA, 2018). While this is a significant variance, it is expected as all members of this population had completed a baccalaureate degree. This data mirrors research found in the literature review reporting the primary reason dental hygienists pursue a baccalaureate degree is to work in a role outside clinical dental hygiene (Brand & Finocchi, 1985; Dominick, 2007; Monson, 2012; Pohlak, 1996; Rowe et al., 2008).

Figure 8: Role of the Dental Hygienist; n=23



The nine survey respondents who reported employment in non-clinical dental hygiene careers all reported that they began their role after graduating from a baccalaureate program, with all nine of these participants stating that they moved to their current role following working in a clinical role. In addition, nine of the 14 participants still serving in a clinical dental hygiene role reported they are actively pursuing a role change. Nine of the total 23 participants stating they would consider changing roles if a new opportunity came forth. Five respondents reported they do not plan to change their role in the dental hygiene profession before retirement.

Data Collection

The goal for this study was to collect complex data from all participants by using qualitative study methods to establish “methodical congruence” (Creswell & Poth, 2018, p. 128). Data was collected through online open-ended surveys using Google docs, including a question which asked for information and consent to contact participants if follow-up questions became necessary during analysis. The researcher took password-protected online field notes as she reviewed the data. All correspondence was kept secure through phone calls with notes and password-protected emails, and all information has been “stored in a secure manner” (Creswell & Poth, 2018, p. 128).

The informed consent stated to participants that each survey would be anonymized to protect personal information and location of licensure. Documented survey responses were transcribed verbatim through Google docs, with the data kept in password-protected systems on a secure server. The researcher maintained a listing of questions that evolved as data was analyzed in the event details from responses needed clarification. All follow-up contacts were made with

electronic notetaking for validity and assurance of documentation accuracy as interpretations of data were made clear (Creswell & Poth, 2018).

Participants were solicited via an email from the producers of *Today's RDH* online publication inviting voluntary participation from those within the large population who are licensed in one or more of the five focus Midwestern states. A letter is attached to this prospectus, in Figure 2, outlining the request from *Today's RDH* readership to participate. After participants voluntarily clicked the link embedded in the email invitation they had received, they were directed to complete the questions in Figure 1. The first set of questions prompted the participant to complete the qualifying questions, then came the consent to participate, and finally, the qualitative open-ended question portion of the survey. If the subject was not eligible for criteria of participation, the respondent was led to a screen which thanked them for their time and explained to them that they did not meet the study parameters.

Each participant who completed all portions of the survey was assigned a participant number for anonymity. Participants who had attended an associate-degree entry-level program, who are licensed in Kansas, Illinois, Iowa, Nebraska, and Missouri, and who have obtained a baccalaureate degree in the previous ten years comprised the final data set. Each participant was given a choice whether to enter their email address and phone number for further contact. This information was also kept separately, stored in an Excel locked document to allow the researcher the ability to contact willing participants for any needed clarity on individual responses.

Researcher Role

The researcher role in this study was one of organization, data collection, documentation, analysis, coding, and interpretation of the data. The researcher acknowledged personal bias

throughout the process as an advocate for dental hygienists to pursue a baccalaureate degree as she works as an administrator of a dually accredited CODA dental hygiene and dental assisting department at a community college. Cross-verification was planned, through phone call or email, only if the participant consented. The researcher chose a written survey rather than a face-to-face or Zoom format to remove bias from the data sets that may occur through perception and acknowledgement of other relationships they may currently have or have had in the past. In addition, the online survey required less time and funding than a mailed questionnaire or live inquiry.

Analysis of Available Data

Single coding using the Giorgi (1985) approach to qualitative coding was completed.

These steps included:

- Researcher bracketed preconceptions within the transcripts and memos
- Researcher interpreted transcription for understanding and completed contact for clarity with participants deemed necessary.
- Researcher described material by organizing and transcribing direct quotes from surveys and writing additional transcription memos.
- Researcher analyzed data for emerging themes.

The researcher developed a matrix to organize data from respondent surveys into themes. The themes were then categorized into sub-themes to organize patterns (Creswell & Poth, 2018). A second review was conducted where the researcher reviewed the data to verify patterns a second time (Creswell & Poth, 2018). Maxwell (2013) stated it is just as important to refute theories different from that of the researcher than to prove the theory as stated by the researcher.

Taking a second look at details provided an opportunity to gain clarity in conclusions and cross-check that the perceptions were made in consideration of any potential bias. In addition, having the ability to follow-up for data clarity, if needed, was a valuable aspect of this research plan to assure the responses were reported as the participant intended prior to sorting the replications of saturated data into themes.

A third review was completed to finalize the data themes. During this step, the data was again reviewed by the researcher to verify theme formulation. The researcher implemented the application of coding, as described by Creswell and Poth (2018), to provide a clear label for each theme (p. 192). Patterned themes from the data set were then compared to the six main themes formulated during the literature review. The anecdotal replies of participants were also considered, consistently considering the theory of transformational learning, the concept of sensemaking, and the application of the psychological contract. All details were reviewed, and a final report was given in summation of the data collected.

Reliability, Validity, and Researcher Bias

Maxwell (2013) recommended that validity be kept separate from methods since it depends partially on the conclusions made from the data the researcher has collected and the methodology used. When researchers spend the necessary time considering the potential threats to the validity of their research, the process contributes to the validity of their listed results. When presenting the culmination of data in a research study, it is important to recognize any details that may have affected the security of the conclusions as they were developed. These security threats are the “validity threats”, as described by Maxwell (2013, p. 123). In qualitative research, these validity threats are often encountered after the methodology plans have been laid, reinforcing the importance of adequate planning in research design.

Additional threats to the validity of this study include potential existing relationships between the researcher and the participants in the study. It is assumed that the respondents will be honest and open and provide candid responses. The dental hygiene community is small, and participants who may fit the criteria listed (in that they attended an associate-degree entry-level program, are licensed in Kansas, Illinois, Iowa, Nebraska, and Missouri, and have obtained a baccalaureate degree in the previous ten years) may be former students of the program for which the researcher is the administrator. In addition, all participants are colleagues of the researcher as licensed dental hygienists in the organization of the profession. Previously conducted research has focused on specific geographical areas, not including the Midwest states (Kanji et al., 2011a; Smith et al., 2016; Kanji & Laronde, 2018; LaSpina et al., 2017). Because of this gap in the data, the Midwest states were chosen as the focus for this inquiry. There may be a perceived researcher bias by the participant, especially those in the same state as the researcher. Maxwell (2013) states the researcher must set aside their own beliefs and perceptions to find the actual conclusions from the participant data without influencing or skewing the results through his or her own biased lenses.

Eliminating the actual influence of the researcher is impossible, and the goal in a qualitative study is not to eliminate this influence but to understand it and use it productively” (Maxwell, 2013, p. 125). The researcher acknowledged the bias and potential barriers that existed and used her knowledge of the subject matter and literature to her advantage as she analyzed the data collected in the study. Dental hygiene programs serving the Midwest may find value in more regionally focused data, so the potential benefits of this inquiry risk may outweigh the risk of bias. In addition, the comprehensive understanding of a licensed dental hygienist

researcher provides a deep understanding of both the culture of dental hygiene and the process of education in the profession, thus supporting the efficacy of the interpretation of collected data.

Strategies for Addressing Validity Threats

The researcher clearly stated to participants that anonymity would be respected, survey responses would be transcribed, and all data would be kept secure and private. Kansas, Illinois, Iowa, Missouri, and Nebraska were the focus states in the study, but dental hygienists from all states in the *Today's RDH* mailing list were invited to participate as many hygienists are licensed in more than one state. This was an intentional aspect of the study, completed to decrease researcher bias and open the participant pool to increase the availability of content-rich data while maintaining the focus on obtaining participants from the five targeted states in a mobile society using the internet as a resource for gathering and storing data.

Validity was considered as a whole puzzle rather than as an individual piece. The researcher considered the entire process of validity when formulating the research design to uncover potential threats before they had the chance to effect and potentially compromise the study validity. One strategy used in the process of assessing validity was asking other dental hygiene education researchers, with more research experience, to evaluate the research design and the research questions to detect unidentified threats and potential discrepancies prior to the release of the solicitation email. This method of seeking potential validity threats was both relevant and practical during the research process as the dental hygiene researchers consulted had undergone the design process before and possessed a greater knowledge base of potential threats. Seeking assistance from colleague experiences in the survey validity was an integral component of this inquiry.

In verifying the motivational factors specific to the completion of a baccalaureate degree the researcher monitored the survey results for discrepant data. Maxwell (2013) stated examining data that refutes a theory or claim is often just as important as examining the data that supports the research claim. Triangulation, having the ability to collect enough evidence from several participants to support the claim of data saturation, decreases threats to validity, as more support for responses, or more opposition for alternative theories, exists with greater numbers of participants (Maxwell, 2013). Identifying numbers to support the actual quantity of data that exists to support or refute a theory can influence validity within a study. The researcher utilizes the actual numbers to place weight on the number of participants affected by the phenomenon in attempt to quantify the level of relevance of the observed pattern (Creswell & Poth, 2018). These considerations were made as the methodology plan was activated and completed in the inquiry.

Verification

The researcher consulted other researchers within the field of dental hygiene to review questions throughout the process of survey creation to assure that questions were not skewed to support one theory or another and would gather data that accurately represented the participant intent (Maxwell, 2013). The researcher collected rich and accurate data, validated the respondent answers to surveys, identified discrepant evidence, triangulated data sets as themes emerged, and coded comparison data as strategies for testing validity. The researcher identified the potential threats to the validity of research, thereby verifying the validity of the data, which was collected, also contributing to the validity of research results (Maxwell, 2013).

Preventing Bias

Maxwell (2013) explained a researcher must acknowledge bias and reduce the influence of their own choices on the answers given by their study participants, accepting that it is impossible to completely remove their personal theories from the analysis of collected data. The researcher was prepared to react to the presence of her own bias as a dental hygienist who has previously pursued and received various degrees in higher education and who is currently working toward a doctoral degree. For example, the researcher acknowledged a personal bias for advancing education as a dental hygiene practitioner and completed validity testing to assure data is rich in content rather than limited by her potential personal bias. “Eliminating the actual influence of the researcher is impossible, and the goal in a qualitative study is not to eliminate this influence, but to understand it and use it productively” (Maxwell, 2013, p. 125). The researcher acknowledged the bias that exists, and the potential barriers yet used her knowledge of the subject matter and literature to her advantage as she analyzed the data collected in the study.

Site and Participant Selection

Participants were selected based on their ability to meet outlined criteria during the completion of the first set of survey questions. Following this set of qualifying questions, participants were either prompted to move on to the open-ended qualitative questionnaire to collect data after the first section or prompted to the end screen thanking them for their time and informing them that they did not meet the research parameters for inclusion to respect the time of all involved. Purposeful sampling was used to gather participants. To avoid bias in the collection of data, all responses were transcribed verbatim, and phone calls were made to further clarify the questions that came about during coding for understanding and validation.

Measurements Taken and Instruments Used

In planning this study, the researcher understood that qualitative research is intended to report what is true while having flexibility "to be innovative" (Silverman, 2000, p. 2). The base of previous knowledge was broadened with the extensive literature review before research questions were drafted. The research knowledge attained by reading and studying previous articles on the benefits, motivations, and incentives associated with achieving a baccalaureate education provided a valuable base (Anderson & Smith, 2009; Kanji et al., 2011a; Smith et al., 2016). All available knowledge was taken into consideration to ensure the researcher can be considered a credible content expert. Continued literature review and knowledge gathering occurred throughout the process of this design to validate the level of researcher understanding of the culture and organization of dental hygiene.

Nonresponse, Permissions, and Standards

The format of first emailing an initial invitation, then sending a one-week follow-up email reminding participants of the research window of data collection encouraged data to be gathered promptly and efficiently. This email was sent by the chief content officer of *Today's RDH* magazine rather than the researcher to decrease perceived bias. Today's RDH was the repository of all contact emails needed to obtain sufficient inquiry replies. The researcher did not have access to this email list. All participants voluntarily clicked into the link, and digitally signed the consent form, Figure 3, once the three questions to determine qualification were answered, but prior to completing the full qualitative inquiry. There was no issue with non-response within 30 days of the beginning of the study; therefore, no dissolution of the study was needed.

Conceptual and Theoretical Framework

Mezirow's Theory of Transformational Learning

A relevant theory used to explain the benefits adults list in seeking higher levels of learning is Mezirow's theory of transformational learning. This theory stated that perspective transformation often occurs in three dimensions including the psychological facet where the learner begins to understand their self, the convictional facet where the learner begins to change the way they view their own belief system, and the behavioral facet where the learner changes their lifestyle to meet their new perception of needs (Mezirow, 1991). The three levels of transformation in learning were considered in attempt to further explain the benefits dental hygienists associated with seeking a baccalaureate degree. This inquiry considered the additional details participants documented to explain their own pursuit of a baccalaureate degree on a theoretical level, a practice level, and a personal level as these individuals answered the open-ended survey questions.

At the theoretical level, this study reviewed and interpreted current literature on the perceived benefits of completing a baccalaureate degree and compared that information to the motivations and experiences reported by graduates participating in the survey. In addition, the study investigated whether the perceived benefits of those completing the open-ended survey questions, following their graduation in the Midwestern states, mirrored the available literature from those reported in other areas of the country, and the world, through data found in the literature review. These perceived benefits, or motivating influences, appeared repeatedly in studies that inquired why a dental hygienist would choose to pursue a baccalaureate-level education, and the data from this research study was compared to the current body of literature available.

Sensemaking.

Mischler (1983) researched goals listed by adults over the age of 25, who recently sought a baccalaureate degree. The Mischler research indicated the top two goals of these adults included entering a new career and gaining the satisfaction of earning a degree. The notion of "sensemaking", as outlined by Bolman and Gallos (2011), was used to explain the individual quest for baccalaureate degree-seekers. Sensemaking consists of three natural phases that occur innately. Observing an event, considering what happened, and reacting, are steps taken in many situations by leaders and followers alike.

"Sensemaking is incomplete and personal" (Bolman & Gallos, 2011, p. 18). By admitting that culture, experience, and past life events can color the lens through which we view and respond to situations, leaders can acknowledge the biases that may exist and work past them to react in a manner that reflects their organization goals rather than their personal wants (Bolman & Gallos).

"Sensemaking is interpretive" (Bolman & Gallos, 2011, p. 19). By admitting that sensemaking steps can be influenced by personal interpretation, leaders can attempt to move toward more impartial choices for the organization that are evidence-based rather than those that are considered "right or wrong" in their own mind (Bolman & Gallos). "Sensemaking is action oriented" (Bolman & Gallos, p. 19). By acknowledging that it is natural for humans to have an unspoken want to predict how others respond, leaders can attempt to balance their strategic plans at a realistic level for the response of their team (Bolman & Gallos).

Leaders are charged with the duty to incorporate all concerns into the structure of addressing change, not just the easy and predictable concerns; in addition, all planned changes do

not necessarily end in the leader's planned result (Cawsey et al., 2016). Sensemaking leads to more effective decision-making because it endorses leaders slowing down, gathering all the information, and looking at it through a clear lens rather than a lens that is potentially tainted with their previous experiences, perceptions, or desired results (Bolman & Gallos, 2011).

Groopman and Hartzband (2008) discussed the need for cognitive science in clinical medicine, with the intent of decreasing misdiagnosis in the medical field. These scientists felt the use of technology in medicine is important, yet medical professionals cannot rely solely on technology rather than sensemaking when completing a diagnosis. This is a valid example of why sensemaking applies to various organizational behavior decisions across various professions.

Sensemaking also applies to higher education, especially health professions higher education (Bolman & Gallos, 2011). Educators in health sciences can mirror the sensemaking practices when addressing the daily concerns of students, so students can carry this process into both didactic studying and clinical patient care. By using the concept of reframing, as discussed by Bolman and Gallos, dental hygienists can step back from the decision they are attempting to make, regarding obtaining additional education, and shift into a mode where they can gather the facts and reframe the situation to assess why they would want to achieve the degree. This process is the valuable skill set of sensemaking and reframing.

Psychological Contract.

Assumptions, values, and artifacts within the culture make up the behavior of that organization (Schein, 1992). Rousseau (1989) first outlined the concept that within an organization there exists an unwritten contract between a member and the organization that defines these suppositions that are unrecorded. This psychological contract is the underlying

motivation for many decisions for change, the behaviors by members of the organization, the response to changes within the organization, and the relationships that are built and maintained in the organization.

In dental hygiene, the pursuit of a non-clinical career path often involves attaining a higher level of education to prepare for the challenges of that new career path (Battrell et al., 2016; Brand & Finocchi, 1985; Dominick, 2007; Monson, 2012; Pohlak, 1996; Rowe et al., 2008). Because the terms of the psychological contract are often not clear within an organization, remaining more unspoken and informal, individuals must seek out their meaning to understand the psychological contract in context to each situation. One aspect of the psychological contract, within achieving a non-clinical role in dental hygiene, involves attaining a higher education than what is required for a clinical role. For continuous organizational development to occur, the underlying context of continuous improvement should be acknowledged. Then, educators and administrators responsible for advising students on whether to attain further education following what is required for licensure in dental hygiene can potentially be justified.

Problem Statement and Research Questions

Many program directors advise students to pursue a baccalaureate degree following associate degree program completion even though research is limited regarding the actual benefits of pursuing this baccalaureate education (Anderson & Smith, 2009; Kanji & Laronde, 2018). The compilation of the evidence-based benefits that exist for dental hygienists who do choose to pursue a baccalaureate degree could encourage baccalaureate awarding colleges and universities to recruit dental hygiene associate-level graduates, inform educators advising students, and encourage those considering a bachelor's degree to establish a degree plan for bachelor's degree completion.

The broad research problem to be investigated was, *what are the benefits of a dental hygienist obtaining a bachelor's degree when an associate degree is the minimum required for licensure?*

The purpose of this study was to provide clarity and support for educators and other student advisors while contributing to the overall body of evidence-based research. Potential outcomes of this study could assist various individual stakeholders in dental hygiene as additional knowledge may further justify the establishment of higher levels of required education, specifically a baccalaureate degree, as current students, licensees, and other stakeholders in the dental hygiene culture.

Delimitations and Limitations

The researcher acknowledges the determination of values, benefits, and professionalism among dental hygienists vary. The variance in value placed on tangible and intangible benefits exist in a variety of occupational strata, dental hygiene included; furthermore, the values of the Midwest dental hygiene culture may differ from the value placed on these same benefits if listed in other regions where research has been completed. This being considered, regardless of the level of value to each individual participant, these benefits can be listed and compared as individuals discuss the pros versus cons of obtaining higher education, specifically in an allied medical field.

The sample was one of convenience rather than one which was completely randomized due to the specificity of participation requirements. The narrowed focus of five states (Kansas, Illinois, Iowa, Nebraska, and Missouri) was a limitation of the study, as was the selection of only individuals who have received their baccalaureate in the past ten years. The researcher acknowledged these and other pertinent limitations yet needed to provide boundaries to ensure

the inquiry could be completed within the established timeline. The limitations inherent in this study may inspire further research in identifying the motivations and benefits of obtaining higher education as a dental hygienist in other regions of the United States or internationally.

One limitation of this study was the dental hygienists who volunteered to complete the survey have already shown elevated levels of personal motivation, as they have completed a degree that was not required for dental hygiene licensure in their state. Findings from the study may be attributed to participant inherent bias that were not uncovered as this specific participant cohort had already chosen to pursue and complete a baccalaureate degree, obviously showing they noted some benefit or value at the time of that choice but may not have articulated the reasoning in their replies to the inquiry.

Another limitation was that participants may inaccurately recall the specific details that motivated them as they look back on memories to explain their motivations and feelings upon starting their baccalaureate degree many years in their past; in addition, the participant may have had a life change or career injury that required them to pursue a new career path. In dental hygiene if one cannot work in the clinical setting due to a physical limitation, they often turn to a role in dental hygiene that requires an advanced degree. In this situation, rather than basing the decision to continue their education on personal motivation or benefits, they choose to obtain a higher degree because they have no choice but to leave clinical practice (Moodley et al., 2018). To counteract these potential biases, strategies of maximum variation sampling, field note memos during phone or email follow-ups, transcribing the open-ended survey responses verbatim, and collecting data until saturation occurs enhanced the study validity.

Conclusion

This study was the first of its kind held in five Midwestern states, isolating the area of geographic selection based on state licensure, along with the duration of time since the participant has obtained the baccalaureate degree. Purposefully, no focus was placed on what specific field of study the baccalaureate degree was focused on, as the study focus was on obtaining the baccalaureate degree benefits and motivations rather than the specific field of related study the participant had chosen in their baccalaureate journey. Further investigations could isolate each specific degree to study that factor, but that was not the intent of this research. The completion of this qualitative research study could, potentially, justify and increase the recommendations made by dental hygiene program advisors, program directors and chairs, and program faculty as they advise and encourage students to pursue a baccalaureate degree with the intention to meet their long-term career goals, regardless of if those goals include a career outside the traditional role of clinical dental hygiene.

CHAPTER 4: DATA COLLECTION AND ANALYSIS

Data gathering occurred between the dates of September 8 and September 18, 2021. Analysis, coding, and separation of themes were completed for the resulting set of valid, qualifying data. In total, 128 individuals completed the survey with 23 meeting all three qualifications for participation which included: graduation from an accredited dental hygiene program, licensure within one or more of the five focus states, and attainment of a baccalaureate degree within the previous ten years. The last ten years of time was defined as baccalaureate program completion between the dates of August 1, 2011, and August 31, 2021. In this chapter the results of the data analysis will be synthesized and presented text, table, and figure forms.

Analysis

The motivators for pursuing a baccalaureate degree, as reported in previous research, were stated in Chapter 2. These included a desire for:

- personal satisfaction attainment (Anderson & Smith, 2009; Kanji et al., 2011b; Sunell et al., 2016)
- increased knowledge and critical thinking (Anderson & Smith, 2009; Barnes et al., 2007; Kanji et al., 2011b; Pohlak, 1996; Rowe et al., 2008; Sunell et al., 2016)
- increased employment opportunities (ADHA 2019a; Battrell et al., 2016; Brand & Finocchi, 1985; CODA, 2019; Dominick, 2007; Monson, 2012; Pohlak, 1996; Rowe et al., 2008)
- increased status or recognition (Battrell et al., 2016; Kanji et al., 2011a; Sunell et al., 2016)
- access to higher degrees beyond a baccalaureate degree (Anderson & Smith, 2009; Boyd & Bailey, 2011; Kanji et al., 2011b; Rigolizzo & Forrest, 1983; Rowe et al., 2008)

- additional tangible measurable benefits including public or non-public rewards that are received for improvement in skills, education, or training such as additional money, promotions, or gifts (Anderson & Smith, 2009; Baum & Payea, 2005; Mishler, 1983; Stolberg & Tillis, 2016).

Upon review of participant data, similar themes emerged. To increase clarity and consistency of the understanding of intangible versus tangible benefits, participants were given the following definitions to reference within the survey document:

- Intangible benefit: public or non-public rewards that are received for improvement in skills, education, or training that cannot be converted into dollars and cents to use as a metric for value. Examples include power, sense of belonging, professionalism.
- Tangible benefits: public or non-public rewards that are received for improvement in skills, education, or training that can be converted into dollars and cents to use as a metric for value. Examples include increased productivity per hour, money, gifts.

In Table 1, a complete listing of the final coded responses can be seen.

Table 1: Complete Listing of Theme Groups with Coded Responses

PERSONAL SATISFACTION	INCREASED KNOWLEDGE AND CRITICAL THINKING	INCREASED EMPLOYMENT OPPORTUNITIES	INCREASED STATUS AND RECOGNITION	ACCESS TO HIGHER DEGREES (BEYOND BACHELOR'S)	TANGIBLE BENEFITS
Personal Goal (n=7)	Wanted Increased Knowledge (n=5)	Wanted More Options in the Career, i.e., Research, Teaching, Sales, Administrative (n=6)	Other Professions Recognize Bachelor's; Want Others to See Dental Hygiene as More Credible (n=5)	Want a Master's/Doctoral, Needed Bachelor's First; (n=8)	Salary increase (n=9)
Sense of Accomplishment (n=6)	Professionalism increases with Knowledge (n=5)	Desire for Job Outside Clinical Dental Practice (n=4)	Sense of Belonging Among Other Colleagues within Profession with their Baccalaureate, or Higher, Degree (n=5)	Power to move forward if the advanced practitioner model at a master's level is passed in my state (n=1)	More Paid Time Off (n=5)
Self-improvement (n=3)	Critical Thinking is Improved with Knowledge (n=4)	Dental Hygiene is Physical; To Give Myself Options for the Future in Case of Injury (n=3)	Greater Respect from Patients (n=4)	-	Retirement Package (n=2)
First Generation Student (n=1)	Desired knowledge on Research (n=2)	To Have an Advantage over Other Dental Hygienists Interviewing for Clinical Jobs (n=3)	Make Parent/Family Proud (n=3)	-	More Family Time (n=1)
Standard in My Family to Have Bachelor's (n=1)	Got Bachelor's for First Career Choice (n=1)	Wanted to Start My Own Business (n=1)	-	-	-

Two categories were kept aside for future analysis, outside the six noted themes. These categories, listed in Table 2, display a short listing of direct quote comments made that did not fit into the six themes. These comments, although thought provoking, are in opposition to those listed in all other themes and were considered as important, yet separate comments outside the theme. Discrepant data was included for viewing in accordance with the planned methodology. The two additional comment categories were divided into limitations of tangible benefits that individuals experienced when they obtained their bachelor's degree but chose to remain in the clinical role of the dental hygienist, and regrets that were articulated within responses.

Table 2: Comment Quotes Outside Listed Themes

LIMITATION OF TANGIBLE BENEFITS ACHIEVED FOR DH IN CLINICAL ROLE	REGRETS
"There's no additional money in our state following BS if you stay in clinical"	"I should have gotten my bachelors in something else besides DH. This is my only regret with getting a bachelors. I only got it in DH because it was an [accelerated] program with in-state tuition rates"
"Private practice did not care if I had my bachelor's degree. I was paid the same as the other hygienist in the office that only had her associates degree, although when I applied for the public health setting, they did consider my bachelor's degree & offered me more money"	"At the start, I was just looking to better myself, but I met great people along the way. I have a new respect for what educators do. So different from what I felt about educators 35 years ago. Should have gotten my bachelor's sooner"
"I have not experienced any tangible benefits yet as a clinician. My pay rate did not change, when applying at offices they do not seem to care in clinical, and the general healthcare industry treats us who have stayed in clinical practice as if we are uneducated and not healthcare providers. This is why I want to find a non-clinical job. Bachelor's degree does not matter if you plan to stay in a clinical setting your whole career"	There is so much room to grow with a bachelor's I should have done it sooner in my journey, but I am so happy I have it"
"You don't see the money until you earn the BS, then you have the confidence to see what else is out there and go at it"	"It seems to me that DHs who have a bachelor's understand how much you gain with one and those who do not stay in clinical practice and thrive or stay in clinical practice and burnout. If everyone had to have a bachelors maybe there would be less burnout"

Along with supporting previous research on the topic and listing some additional comments that were not affiliated with themes gathered from previous literature, Table 2 provides participant quotes under the two themes. In Table 3, statements were given by participants in their own words without any guidance or questioning from the researcher. This area invited additional comments and concerns from individuals. In this space participants could articulate additional thoughts that may contribute to the base of data on the topic in the inquiry that was not asked in another area of the written survey.

Table 3: Additional Comments from Participants

“As I learned in my bachelor's program, I incorporated the information into the OP [operatory] with patients. Initially I did not realize how much I would use the new information.”
“I feel that the benefits of a lower cost education from an [associate] degree program outweigh any benefits of a more costly [bachelor's] degree program.”
“Dental Hygienist are health care providers and should deserve the respect of so. A lesser degree then a bachelors doesn't give the respect the field deserves.”
“If staying in clinical setting, there really is no point of obtaining a bachelor's degree. If you're in a bigger city & have more opportunities out of the op, then maybe worth it. I don't regret getting my Bachelor's.”
“Dental hygiene is a multifaceted career requiring different educational levels.”

Synthesis

In Table 4, motivators from the previous research literature review were listed, along with the incidence of occurrence of each theme in the surveyed population. This data allows for a comparison of the strength of the correlation if the study were to be replicated and further comparison analysis be pursued between this research and future studies. Details from Table 1 can be referenced in the analysis of this information.

Table 4: Motivators Listed in Previous Literature Versus Motivators in Inquiry

Previous Literature	Participant Data Set <i>n=23</i>
Personal Satisfaction	<i>n=18</i>
Increased Knowledge and Critical Thinking	<i>n=17</i>
Increased Employment Opportunities	<i>n=17</i>
Increased Status and Recognition	<i>n=17</i>
Access to Higher Degrees Beyond Baccalaureate	<i>n=9</i>
Additional Tangible Measurable Benefits	<i>n=17</i>

In addition to these six categories, three other categories were considered for potential inclusion. These categories were labeled increased feelings of self-esteem, increased credibility, and increased feelings of professionalism. During the secondary coding phase these three additional categories were found to closely mirror comments existing from previous literature that were placed in one of the six prevalent themes. Comments such as “my self-esteem has been lifted and I feel more confident” were placed under the category personal satisfaction. Literature correlating increased abilities of critical thinking to increased perceptions of professionalism led the researcher to place comments such as “professionalism increases with knowledge” into the theme increased knowledge and critical thinking. The comments relating to “more authority when talking with patients and doctors” was placed under the category increased status and recognition.

To assess the relevance of Mezirow’s theory of transformational learning, sensemaking, and the consideration of the relevance of the psychological contract, additional questions were added to the survey to inquire the level of perspective transformation each participant felt following the completion of their baccalaureate degree. Each theory was considered for relevance to potentially uncover additional intangible benefits to the graduate of a baccalaureate program.

The results of these three questions are seen in Table 5, with these questions listed as:

- How did your understanding of yourself change after you completed your bachelor's?
- How did your belief system change after you completed your bachelor's degree?
- How did your lifestyle change after you completed your bachelor's degree?

Table 5: Transformational Learning Data

Question	Participant Response (n=23)
Change in Self-Understanding	Reported Change (n=19) Reported No Change (n= 4)
Change in Belief System	Reported Change (n=9) Reported No Change (n= 14)
Change in Lifestyle	Reported Change (n=14) Reported No Change (n= 9)

Schein (1992) defined the organizational culture of a group as a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid, and can therefore be taught to new members as the correct way to perceive, think, and feel in relation to those problems. The organizational culture of dental hygiene is affected by various interpretations of the organization members. The concluding section of the survey asked whether obtaining a baccalaureate degree changed the perception of the organizational culture of dental hygiene in a positive or negative manner.

Participants were asked, “How do you feel the organizational culture of the dental hygiene professional is affected when an individual obtains a baccalaureate degree?” This question was added to provide data as to whether the perception of the culture was positive or negative following a baccalaureate degree, or if the participant felt it mattered at all. The response to this question is stated in Table 6.

Table 6: Organizational Culture Change

Question	Participant Response (n=23)
Positive Comments (n=15)	Negative Comments (n= 4)

Summary

The data gathered from participants in responses to this inquiry supports the reasonable assertion that a higher level of education would add opportunities for both additional tangible and intangible benefits if a dental hygienist chose to pursue a baccalaureate degree when an associate degree is the minimum requirement for licensure in the five Midwest states studied. By coding the individual responses into an initial set and a revised set, the data was organized into themes to then discuss, make recommendations, and formulate conclusions in the following chapter.

CHAPTER 5: RESULTS, CONCLUSIONS, AND RECOMMENDATIONS

The future dental hygiene clinical workforce will require similar skill sets taught in existing entry-level dental hygiene academic programs. Notwithstanding, this research has supported the careers defined outside the clinical role of the dental hygienist currently require the added skill sets gained in a baccalaureate degree program. The researcher anticipates these skill sets will not only carry into future years but grow in the level of need as dental hygienist practice acts change in individual states and additional roles of the dental hygienist evolve.

Administration and faculty at colleges preparing students for entry-level clinical practice are often tasked to act as student advisors, assisting in the formulation of academic plans that may include education beyond entry-level associate degree competencies (ADHA, 2018; ADHA, 2019c). With limited information regarding the benefits of obtaining a bachelor's degree as a licensed dental hygienist, these decisions can be a challenge for both students and licensed hygienists who have already entered the workforce. Colleges and universities offering baccalaureate degree programs can also benefit from this listing of benefits as they too are called upon for academic advising for current and prospective students who are licensed or plan to be licensed dental hygienists.

After students and licensed dental hygienists have completed the associates degree level of education required for licensure and subsequent dental hygiene clinical practice, many question whether the baccalaureate degree is an option they should pursue. The discussion, recommendations, and conclusions compiled in this section are aimed to assist program directors, faculty, and administration in both dental hygiene and degree completion programs, working to aid students and licensees who may express interest in continuing their education to programs beyond what is required for entry-level licensure. The application of data from this

inquiry was considered as recommendations attempted to support the merit of a bachelor's degree for those in the profession of dental hygiene.

Summary of the Study

Data found in the Midwest qualitative inquiry indicates that most individuals surveyed in the five states who pursued their baccalaureate degree within the previous ten years listed themes of both tangible and intangible benefits related to their education. This data, compiled from the open-ended participant survey responses, provided information which was coded and listed by theme. A pattern between the Midwest state data that was in direct alignment with the information from previous research reviewed in the literature summary gathered from other United States regions and internationally became evident.

Midwest participants supported the information from other regions, reporting that when licensed dental hygienists receive a baccalaureate degree, they unlock nonclinical opportunities within the organization of dental hygiene that may not be accessed without a baccalaureate degree. Additionally, the theoretical relevance of Mezirow's theory of transformational learning, sensemaking and the psychological contract were considered, and participants supported those positive gains in intangible benefits occurred following their pursuit of a baccalaureate degree.

Limitations of Results and Findings

This inquiry possessed a limited ability to unequivocally prove comments could be generalized among regions of participants; for instance, the actual experience from a dental hygienist in rural Nebraska may vary from that of a dental hygienist in urban British Columbia, Canada who participated in the Kanji et al. (2011b) research. The lack of ability for comparison between various regions tested by various researchers is a limitation, yet in both studies dental hygienists belong to the global community of the profession with practice acts that vary.

Every effort was made to include as many qualifying participants as possible from the selected region, but a limitation that remained was the inability to quantify an appropriate sample size from the available pool of qualifying participants when none of the five Midwest state licensing boards tracks the highest degree earned by licensee applicants. For this reason, the researcher verified that saturation of data was met when no new information or themes emerged. The researcher also reported the numerical quantification of responses that pertained to each theme for reader review and insight into which theme was most predominant.

Another limitation was the inability of the researcher to immediately ask follow-up questions. Most respondents provided clear and concise answers to open-ended questions, so no immediate follow-up contact was made. Others provided answers that needed further contact, yet not all participants allowed permission for phone or email contact for clarification of answers during coding and the establishment of themes. Only the clear data responses and the unclear responses that were then verified through additional contact were reported, omitting unclear responses.

Another limitation of the Midwest data was that this inquiry did not take into consideration the race, gender, or socioeconomic status of participants, in addition to several other noted demographic limitations listed in scientific research. Each of these elements may have posed limitations yet also might have constrained the pool of participants to a point that may have prevented data saturation. For this reason, participant parameters were kept as listed in the original planned methodology.

Interpretation of Findings

Previous studies analyzed in the literature review also had limited participant numbers, potentially linked to specificity of the criteria established. For example, Kanji et al. (2011a)

completed a similar study in Canada with sixteen participants who met all qualifying criteria that included: 1) graduating with a diploma from an accredited dental hygiene school in Canada, 2) practicing dental hygiene for at least two years before starting a baccalaureate program, and 3) earning their baccalaureate degree through one of three Canadian programs listed. In the Midwest study, 23 participants met qualifying criteria including: 1) completion of an associate-degree entry-level program, 2) licensure in Kansas, Illinois, Iowa, Nebraska, or Missouri, and 3) baccalaureate degree attainment in the previous ten years. While both pools of participants provided data sets for analysis, the Midwest group had no known method to quantify how many qualifying participants were available from whom to choose whereas the Canadian study limited the participants to baccalaureate students who graduated from one of three degree-completion programs.

Reaching saturation of data during analysis supported the validity of this data. It both strengthened the reliability of previous data and supported the similarities that exist between the Midwest state data to that from Kanji et al. (2011a) collected in Canada. This indicates the members of the organizational culture of dental hygiene list similar tangible and intangible benefits after achieving a baccalaureate degree regardless of their geographic location of licensure and practice; therefore, the location of the participant may not affect the participant expression of tangible and intangible benefits linked to a baccalaureate degree to the level previously thought at the start of the Midwest state study.

Comparison of Key Themes

Creswell (2014) stated qualitative research summary reports can be written in various manners, resulting in a unique versatility for those who choose to utilize qualitative methodology as a tool. As themes emerged in the Midwest dental hygienist research inquiry, peer member-

checking occurred. This was completed with the specific intent to assure the interpretations of the researcher were comparable to what other scholars within the field of dental hygiene would consider prudent. In the original design, the time commitment involved with this level of peer member-checking was not anticipated. This process provided an opportunity for beneficial input to validity from other scholars who understood the organizational culture as leaders within dental hygiene firsthand. In addition, there were no dental hygienists participating on the formal dissertation research committee, so the bias of dental hygiene was removed from the final acceptance of the research.

Literature Versus Emerging Themes

Themes in the Midwest data were listed and expressed as similar phenomena became evident, sometimes using remarkably similar verbiage to those found in the literature review, and other times stating the same observation noted in the literature review but using other words. Regardless of exact verbiage participants used to articulate the benefits, the use of peer-review was appreciated, and valuable as direct quotes were used and themes were finalized, resulting in the final list of compared themes that are listed in Table 1.

Initially, six themes emerged from the literature review, as noted in Chapter 2. These themes included a desire to attain personal satisfaction, increased knowledge and critical thinking, increased employment opportunities, increased status or recognition, access to higher degrees beyond a baccalaureate degree, and additional tangible, measurable benefits including public or non-public rewards that are received for improvement in skills, education, or training such as additional money, promotions, or gifts. Initially, when the researcher began coding, new names were given to each theme and comments were inserted into the locked analysis

spreadsheet, accordingly. As coding continued, it was evident the existing themes from the literature review represented the new dataset.

Isolating specific comments within each theme, individual quotes can be assigned as referenced in Table 1. Under the theme of personal satisfaction, subthemes of personal satisfaction, personal family expectations, and personal beliefs of the expectations of what each respondent felt should be the minimum education for dental hygiene were grouped. While not all comments under the theme of personal satisfaction mirror that statement, the data was included under the personal satisfaction theme. Table 1 lists the subthemes and incidence of each subtheme.

Additional Points

As stated, responses from the Midwest state participants closely reflect data found in the literature review from various other regions. An additional question was asked in the Midwest survey because it has been asked by several students who have sought counsel from the researcher in the past. This question asked whether participants found their baccalaureate coursework to be more or less difficult than the content in their entry-level program. The data gathered replies to this question indicated that baccalaureate content was neither more nor less difficult, yet the content was simply different from that experienced in the entry-level program. There were split opinions on difficulty of individual degree plans, and answers varied based on the various respondent bachelor's degree types. Participants agreed that the level of academic writing was greater in baccalaureate programs with fewer written exams used as assessments in baccalaureate programs. This question, while relevant to the overall topic, did not fit into the specific intent of the study.

Challenges and Opportunities

The literature review provided opportunities to reflect on previous investigations into this topic. The work of other scientists was analyzed and sorted into themes so the researcher could develop survey questions with a comprehensive understanding of methods used in previous research in the field. Through the process of synthesizing themes from previous inquiries in various regions throughout the United States and internationally, the researcher gathered the six themes that emerged to establish a base for comparison and contrasting between previous data and the data emerging from the new inquiry.

The Midwest focused inquiry provided several unique opportunities for the researcher to gather answers to questions that pertained only to the target audience that resulted from the filtering questions at the start of the survey. These participants were all licensed dental hygienists who graduated from a baccalaureate program and primarily practiced within one of five Midwestern states: Kansas, Illinois, Iowa, Missouri, and Nebraska. None of these states tracked whether licensed dental hygienists possess an advanced degree beyond what is required for licensure at the time of inquiry; therefore, narrowing participants based on these criteria was not possible through a request for information at the state licensing level or in another manner.

Once compiled, this group of participants answered questions on their own time over the course of a two-week data collection period. This duration allowed participants to take the time to articulate their own experiences without the influence of others within the group or the assigned time of a live Zoom call if the survey was completed in an interview format. The data in the form of written answers was gathered using Google forms, and then was electronically transcribed into a direct-quote spreadsheet with the same technology. The formatted data was

locked and stored during the data collection timeframe, the analysis and coding process, and the finalizing of themes which took place over the course of several months.

Opportunities also emerged because of the data collected in the Midwest research. Limited information on the benefits of a baccalaureate degree in the field of dental hygiene existed from this region prior to this inquiry. For this reason, it was not possible to make a direct comparison between previous literature on this topic from the United States and the listed benefits from dental hygienists licensed in the Midwest region of the United States. In addition, when individual state boards were contacted in these states, the data available was limited to only the questions that licensees were asked on the individual state dental hygiene licensure applications. None of the five states asks applicants to list the highest level of education they have obtained. This is an opportunity for an improvement in data gathering in the future, especially as ADHA actively seeks avenues for licensure portability and reciprocity among all United States (ADHA, 2019c).

Another opportunity evident is the prospect of increasing awareness among dental hygienists on the benefits of obtaining a bachelor's degree on the national level as themes that emerged from the Midwest inquiry closely mirror themes gathered in the literature review of other research on this topic. Establishing a clear statement of these benefits and promoting that message through a national publication may inspire those considering a higher level of education as a licensed dental hygienist to make the commitment to a program of study; in addition, further promotion of benefits may provide educators and administrators with answers to pass onto the students they advise in their entry-level degree programs.

Mezirow's Theory of Transformational Learning Applied

Participants were asked three questions intending to gauge the level of intangible benefits experienced following receipt of a baccalaureate degree, as seen in Table 5. The answers to these questions indicated intangible benefits such as improved self-understanding and the presence of positive lifestyle changes. Respondents did not indicate that obtaining a baccalaureate degree changed their overall belief systems, yet the responses did support that earning their baccalaureate degree did positively benefit their perception and understanding of the organizational culture of the profession of dental hygiene. A total of 79% of total respondents listed positive comments that supported an improvement in the organizational culture in the profession of dental hygiene that resulted from knowledge obtained in their bachelor's program.

Data from the Midwest inquiry indicates a positive level of psychological, convictional, and behavioral change does occur within a population of dental hygienists following the attainment of a baccalaureate degree, supporting Mezirow's theory of transformational learning as an explanation of the benefits described. Unfortunately, the degree of these positive changes in relation to Mezirow's theory did not produce a quantifiable metric in the Midwest inquiry.

Sensemaking Applied

The researcher considered the work of Bolman and Gallos (2011) when designing the research inquiry to establish if the process of sensemaking could be theoretically related to the benefits listed by dental hygienists who pursue a bachelor's degree. As a dental hygienist, the researcher noted the range of factors that influenced sensemaking within the profession, and these factors may have included one or more of the six themes that emerged in literature as to why dental hygienists obtain a baccalaureate degree. Relating the concepts of sensemaking from Bolman and Gallos assisted the researcher in considering the educational decisions necessary

within the organized profession of dental hygiene, as it continues to emerge as a leader in healthcare. However, the limitations of the written survey and the inability to ask follow-up questions to participants proved to be a barrier in gathering the level of evidence to provide evidentiary support of sensemaking as a solid theoretical base for the benefits listed by participants.

Psychological Contract Applied

Rousseau (1989) researched the concept that unwritten contracts exist between a member of a culture and the individual, termed the psychological contract. Schein (1992) defined that culture is made up of the assumptions, values, and artifacts within the group that establish the norm of behavior in that organization. Within the culture of dental hygiene, the psychological contract establishes motivation for the change decisions by both leaders and members of the organization is unwritten, like what is reported by Rousseau (1989) in other professions. Establishing greater clarity in what is assumed, valued, and carried forth into the future by the profession of dental hygiene, thereby clarifying a sense of culture, could potentially result in more unified changes within the organization, and strengthen the relationships built and maintained among the culture of the organization.

Various researchers support the benefits of attaining a higher level of education as a dental hygienist (Pohlak, 1996; Monson, 2012; Rowe et al., 2008; Brand & Finocchi, 1985; Dominick, 2007; Battrell et al., 2016), and the Midwest study also reflects those benefits do exist. Despite this information, the Midwest research inquiry failed to provide support to make a statement of correlation between the psychological contract as a theory for justification in the benefits listed by those who pursue a bachelor's degree as a dental hygienist.

A Plan of Action

Following the analysis and review of all gathered data in this inquiry, the researcher recommends the following action be taken by individual groups within the dental hygiene professional community:

Advisors, Administration, and Faculty

It is advised that advisors, administrators, and educators promote the tangible and intangible benefits of achieving a baccalaureate education to students and alumni of their individual entry-level programs. This promotion is encouraged regardless of whether this education is required for licensure in individual states as positions in various roles of the dental hygienist will continue to be available (ADHA, 2019c). Specifically, there is evidence of a shortage of individuals pursuing careers in dental hygiene education (ADHA, 2019c). One initial step in resolving this shortage is increasing the number of licensed dental hygienists who hold bachelor's degrees as advanced education is one criterion established by the commission for obtaining a position as a dental hygiene educator (CODA, 2019). In addition, faculty and administration are advised to participate in further research efforts to quantify and establish metrics for the relationship between Mezirow's theory of transformational learning and the benefits described by individuals encouraged to pursue a bachelor's degree.

Licensed Graduates and Students In-Program

It is recommended that both licensed graduates of entry-level dental hygiene programs and current dental hygiene students become aware of the tangible and intangible benefits of earning a baccalaureate degree. The results of the Midwest inquiry echo results found in previous literature. Upon the reviews of direct quotes from participants, it is also evident that feelings of

satisfaction from the career of dental hygiene increase as advanced education is achieved by the culture.

Proposed Evidence-Based Solutions

Evidence-based solutions stemming from this inquiry can impact stakeholders in the dental industry as stakeholders throughout the industry value knowledge of the professional dental hygienist. Justifying the value of time, financial expense, and efforts necessary as one pursues advanced education assists individuals pursuing these goals in maintaining motivation (Baum & Payea, 2005). As advisors continue to motivate dental hygienists and dental hygiene students to move forth with this goal, the problem of workforce shortage in the careers of both dental hygiene and dental hygiene educators can potentially be minimized. Implementation of these proposed solutions will require commitment on behalf of both stakeholders and dental hygienists alike.

Recommendations for Further Research

Although themes that emerged from the Midwest inquiry closely matched themes from previous research conducted in other geographic areas, further research could strengthen this correlation. The first noted recommendation is for the profession of dental hygiene to recommend this method of inquiry in all 12 districts of the ADHA to gather a comprehensive comparison for consideration. Further research that includes participants from across the United States, rather than only these five Midwest states, could provide greater support for the six focal themes and potentially result in the addition of other themes. Subsequent inquiries on this topic could also strengthen statements and establish protocol for action from advisors, educators, and administrators when encouraging licensees and current dental hygiene students to move forth in

seeking a baccalaureate degree. Utilizing informed guidelines for evidence-based advising in education is critical in education.

The second recommendation resulting from this inquiry is for future research to establish more clear measurement of benefits across the spectrum of each individual role of dental hygiene. Additional research could aid in the individual benefits experienced by dental hygienists in each of the roles defined, including employment as an employee in the corporate sector or public health sector, researcher, educator, administrator, and entrepreneur (ADHA, 2018). The Midwest inquiry combined benefits listed by all individuals in all roles who earned a baccalaureate degree in one summary. Future inquiries could separate benefits experienced in each role individually to provide those interested in each role of the dental hygienist more specific data. In addition, metrics and numerical values were not mentioned in the answers given by participants. Future research could list numerical ranges for the comparison of some benefits such as salary ranges before the baccalaureate degree versus after the baccalaureate degree to monetize values rather than merely the presence or absence of a benefit, easing the benefit comparisons.

A third recommendation would be for participants in future research to be first asked their level of awareness regarding additional roles within the profession of dental hygiene. The researcher assumed all respondents had equal knowledge of available industry positions in dental hygiene and assumed all individuals had an equal ability to apply to these vacant positions in various dental hygiene roles. This assumption was not necessarily accurate. Additional research could uncover whether all dental hygienists recognize the benefits that could be experienced should they choose to pursue and achieve a baccalaureate degree. Further research may produce and evaluate the presence of both tangible and intangible benefits.

The fourth, and final recommendation, in consideration of the limitations of the study, would include future research consider race, gender, and socioeconomic status in gathering demographics from the participant pool. Maximum variation was achieved for this participation pool, yet future studies could benefit from the inclusion of additional demographic considerations.

Conclusion

The discussion, recommendations, and conclusions listed consider data from both the process of literature review and the Midwest survey inquiry. The Midwest research inquiry intended to add to the overall body of knowledge, documenting the actual benefits associated with dental hygienists earning a baccalaureate degree in five Midwest states to compare those themes to scholarly literature in the field of dental hygiene. Initially, a reasonable assertion was made that a higher level of education would add opportunities for additional tangible and intangible benefits if a dental hygienist received a baccalaureate degree. Upon detailed coding and analysis, further data has supported this assertion. It has provided valuable insight into not only the benefits of earning a baccalaureate degree, but also the overall increases in intangible benefits such as improved self-understanding, strengthened belief systems, improved lifestyle changes, and enhanced responses to organizational change, relating the Mezirow's theory of transformational learning to intangible reasons behind the adult quest for seeking higher levels of learning.

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Style manual delegation: Publication Manual of the American Psychological Association, 7th

Edition Typist: Emily Boge

Editing: Michelle Geistkemper

