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CLINICAL PREPAREDNESS AMONGST RECENT DENTAL HYGIENE GRADUATES:

A PHENOMENOLOGICAL STUDY

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CLINICAL PREPAREDNESS AMONG RECENT DENTAL HYGIENE GRADUATES:

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Abstract

The focus of this phenomenological study was to evaluate the lived experiences of recent dental hygiene graduates as they recalled their preparation to become clinicians. Individual interviews were conducted with ten newly graduated hygienists, consisting of seventeen open-ended questions about their experiences with feeling prepared to enter the workforce. Questions addressed preparation specific to their clinical skills, professionalism skills, and critical thinking skills.

Bandura's self-efficacy model was selected for this study as the framework addressing Performance Accomplishment, Vicarious Experience, Verbal Persuasion, and Emotional Arousal was appropriate for assessing practitioners' confidence when entering clinical practice. These characteristics are present in the dental hygiene curriculum and were used to analyze interview responses. The researcher documented the experiences these of these participants as they transitioned from master student to novice clinician. They reported positive perceptions of preparedness regarding their skills with instrumentation, professionalism, and critical thinking. All participants acknowledged the benefits of having many applied learning experiences in the clinical setting and in their laboratory courses. Variation in preparation was evident when they reported a range of skills in specific dental task skills such as taking radiographs and coding

patient files. When starting new positions, some individual weaknesses were revealed specifically in production-based practices, where their inability to perform specific dental hygiene-related tasks left them feeling ill-equipped in their new role.

Findings suggest that an increase in clinical experiences led to an increase in confidence in participants' use of instruments and development of critical thinking skills. Exposure to a variety of patients allowed participants to apply what they learned in the program in their new role as a novice clinician. Participants experienced confidence in their ability to be successful on their written and clinical board examinations.

Recommendations for improving preparation of clinicians include: increase training for clinical instructors specific to instrumentation and communication skills towards students, have students self-assess their skills with specific clinical tasks, assign a mentor faculty member to each student to track their progress and help guide them through the program, and encourage adjunct faculty to engage more in the program outside of their clinical hours and increase the dialogue between full-time and adjunct faculty. Finally, by increasing the amount of 'real life' work experiences while in the program either through different out clinic rotations, or providing a more realistic work schedule, can improve the transition from novice student to clinician.

Keywords: clinical preparedness, clinical confidence, dental hygiene, dental hygiene education

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Educational Leadership

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DEDICATION

There are several people I'd like to dedicate this dissertation to.

To my family and friends: for encouraging, supporting, and motivating me throughout this process. I could not have succeeded without you all as my personal cheerleaders.

To my professors and committee members Dr. Collay, Dr. Clark, and Dr. Parsons: Thank you for your patience, feedback, and guidance throughout this journey. A true team effort and accomplishment.

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To my daughters, Marisa (8) and Eliana (5) I know that it can be hard to understand why mommy is always so busy with school work, and why she can't play, but please know that all I do is for you. Not only do I want more and better for you both, but I want to be an example for you in showing you that anything is possible; school, work, house, and family. With love and support, *Impossible is Nothing.* And I will make it my life's work to make sure you have what you need to accomplish your dreams.

And finally, my parents for the unconditional love and support no matter how crazy my new goal may seem. For the many hours of babysitting, constant listening ears, and forever encouragement. Without the both of you, I would not be able to become who I am today. You provided me a great childhood, loving home, the motivation, the drive, and work ethic that will continue to push me for years to come. Yes, this is a personal accomplishment for me, but also a testament to you both as parents. And for you I am eternally grateful.

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CHAPTER ONE

INTRODUCTION

Dental hygienists are adult learners who are mandated to demonstrate a level of clinical, critical thinking, and professional skills (Cantrell, 2012). The focus of this phenomenological study is to evaluate the lived experiences of recent dental hygiene graduates regarding their preparedness to practice as clinicians. Their experiences with feeling prepared to practice was evaluated with a sample from the 2016-2018 graduates after they entered their first clinical position as a dental hygienist. There is minimal published literature on this topic, invoking a need for further inquiry. Identifying trends amongst this selected population can be useful for other program leaders and strengthen similar programs' curriculum. Nationally, there are over 300 dental hygiene programs. This steady growth can be attributed to the federal push to increase access to dental care in such documents as the Surgeon General Report on Oral Health, and Healthy People 2020.

A dental hygienist is defined by the American Dental Hygienists' Association (ADHA) as a "licensed oral health professional who focuses on preventing and treating oral diseases both to protect teeth and gums, [as well as] patients' total health" (American Dental Hygienists' Association [ADHA], 2018a). The purpose of a curriculum is to ensure "that students receive integrated, coherent learning experiences that contribute towards their personal, academic, and professional learning and development" (Flinders University, 2019, para. 1). Arena, Kruger, Holley, Millar, and Tennant (2007) stated that "the role of dental curriculum is not only to develop competence but also confidence and the other attributes of a health-care professional" (p. 1220). Graduates of dental hygiene programs entering the workforce are expected to have gained the skills and knowledge required to be a novice clinician. This health science-based

program seeks to introduce, develop, and cultivate the essential skills clinicians must have to be competent oral health care providers. Reflecting elements of Bloom's Taxonomy theory (1973) of cognitive, affective, and psychomotor skills, the dental hygiene curriculum focuses on patient assessment, instrumentation, a collaborative-team approach, critical thinking, problem solving, communication skills, and professionalism within a competency-based curriculum.

Statement of the Problem

The experiences recent dental hygiene graduates have with feeling prepared to enter their first clinical position is a minimally addressed topic of research (Cantrell, 2012). Little is known about how recent graduates perceive their preparation in transitioning to the workforce (Cantrell, 2012) and their levels of confidence with their skills. Furthermore, educators may struggle to identify and decipher students' lack of clinical confidence or theoretical knowledge. By interviewing recent graduates, this study revealed themes reflecting how this sample characterized their preparation. The results of this phenomenological study yielded valuable information to educators, administrators, and governing bodies who seek to improve the efficacy of their curriculum and maximize students' confidence with attaining clinical skills.

Similar to other healthcare curricula, dental hygiene programs consist of competency-based education which "employs a unique component in that it measures the learner's ability to perform professional tasks, similar to real-life work situations" (Navickis et al., p. 298). Although the scope of practice does vary by state, generally students must demonstrate competency with the following clinical skills: patient assessment, exposing and developing dental radiographs, removing calculus and plaque (hard and soft deposits) from all of the teeth surfaces, applying preventative services to the teeth (for example, sealants and fluoride treatments), educating patients on strategies to maintain oral health, providing nutritional

counseling, making impressions of patients' teeth, and performing appropriate documentation and office management activities (American Dental Association [ADA], 2018).

There is a constant need for assessment of curriculum efficacy to ensure that students achieve a baseline of skills. Prior to entering the workforce, a dental hygienist must have graduated from an accredited school; been successful on the written National Board Dental Hygiene Examination (NBDHE), and the clinical Commission on Dental Competency Assessment (CDCA) Examination; passed an ethics and jurisprudence state exam; and received licensure to practice as a dental hygienist. While being successful on these exams is imperative for licensure, the exams do not deeply assess their professional development, including their experience in feeling prepared to enter the workforce or their critical thinking and professionalism skills. Factors affecting the quality of student experiences include: the level of motivation and commitment students have to learning in the program, the amount of their preferred teaching methodology to which they are exposed, their level of emotional intelligence, and the degree of experience their instructors have in identifying weaknesses and educating students both clinically and theoretically (McGuiness, 2015; van Dinther, 2010).

With first year medical doctors for example, "there are indications that the lack of confidence is not global but is concentrated on some of the skills needed to fulfill the duties" (Miles, Kellet, & Leinster, p. 17). Final year nursing students have also been vocal in their lack of confidence in their preparedness in transitioning to practice (Carlson, Kotzé & van Rooyen, 2005). The results of this study found that "although the program is comprehensive and in-depth," the students "have no confidence" in their decision-making skills to transition to practice (Carlson, Kotzé & van Rooyen, 2005, p. 71). Themes found in this study echo the findings of several others, including a lack of positive nursing staff role models, a lack of positive feedback,

and a need for guided reflection to enhance their becoming nurses. Similarly, Heslop, McIntyre & Ives (2001) surveyed 105 third year nursing students enrolled in a bachelor's of science in nursing program on their perception of preparedness for their graduate year role, and concluded a sense of apprehension due to their "perceived lack of clinical skills" (p. 627). The results of the study have contributed to the "future planning and policy directions of undergraduate curricula, graduate year programs, and nurse retention" (McIntyre & Ives, p. 628). This study revealed comparable findings to the abovementioned studies with similarities being the focus on health care related education programs, acquiring a student-centered perspective, and identifying university to workplace trends. This information could be used to help build future students' confidence by possibly modifying the teaching strategies, methodologies, and or the frequency of those best confidence promoting practices in clinical education.

Purpose of the Study

The purpose of this study is to evaluate how recent graduates' experiences during their dental hygiene program prepared them to enter their first clinical position. This phenomenological study identified trends from the perspective of recent dental hygiene graduates on how their curriculum impacted their feeling of preparedness to enter the workforce, and confidence with their skills. This is determined via a phenomenological study that identifies trends of the lived experiences from the perspective of recent graduates.

Research Questions

The research question guiding this study was as follows: What were the experiences of dental hygienists regarding their clinical preparedness as they first entered the workforce? Related research questions are the following:

1. What are newly graduated dental hygienists' experiences with learning and adapting clinical skills utilized in dental hygiene practice?

2. What are newly graduated dental hygienists' experiences with utilizing critical thinking skills in dental hygiene practice?

3. What are newly graduated dental hygienists' experiences with developing professionalism skills in dental hygiene practice?

4. What are the newly graduated dental hygienists' experiences with growing in confidence as they transition from the role of student to practicing hygienist?

Conceptual Framework

Utilizing a conceptual framework contributes to the significance of this study, Cobban, Edgington, and Clovis (2008) stated that the use of a framework would help to guide and increase the meaningfulness of dental hygiene studies, which have historically been a-theoretical (p. 21). Furthermore, the perspective of the newly licensed and practicing dental hygienist is also lacking in the literature. An extension of Bandura's (1997) social learning theory is his social-cognitive theory or SCT (1986). The SCT identified four sources of self-efficacy, also referred to as confidence, as the following: performance accomplishment (performing the behavior), vicarious experience (observing another's performance), verbal persuasion (feedback), and emotional arousal (physiological and affective states). Self-efficacy is the belief in one's own ability to be successful in completing a task (Bandura, 1994). This theory suggests that students will only attempt something if they feel that they will be successful at it (Bandura, 1994). This demonstrates the significance of how the perception of confidence can affect student success.

These four sources of self-efficacy are commonly found in the dental hygiene curricula. Prior research entitled "Dental Hygienists' Perceptions of Preparedness for Clinical Practice: A Phenomenological Study" (Cantrell, 2012) introduced the Dreyfus Model of Skill Acquisition (1980) to the field of dental hygiene. The selection of Bandura's self-efficacy theory was based on the alignment that the four sources of self-efficacy have towards the educational strategies that yield the most confidence (Lundberg, 2008). Interpretation of the data from this research was enriched by applying Bandura's self-efficacy model as the conceptual framework for this study.

Assumptions, Limitations & Scope

It is assumed that due to the recent occurrence of graduation, the participants were able to accurately and honestly recall their experiences upon first entering the workforce. Participants had different levels of workforce-related experience. This study assumed that those differences did not affect participants' abilities to accurately recall their experiences of preparedness as they entered clinical practice. It is also assumed that there is an essence to the shared experiences of the phenomena of graduating from a dental hygiene program (Moustakas, 1994). Finally, there is an assumption that the potential participants have Facebook and use the Messenger application so they would be able to receive a recruitment letter.

The focus of this study is limited to the 2016 - 2018 graduates of the associate in applied sciences dental hygiene program at a Northeastern state college. Using one site limits the conclusions and the results of this study cannot be generalized for the dental hygiene profession overall. Secondly, the findings may not be the general feelings of these three classes, totaling ten students overall. Requirements to participate in this study included: being a recent graduate of the associate's level program during the years 2016-2018 at a Northeastern state college, having

a license to practice dental hygiene, and clinical work experience. A specific amount of clinical experience in private practice was not required, nor was the practice type a factor.

Significance of the Study

Currently, there are 330 accredited dental hygiene programs in the United States, and 56 in the Northeast region (CODA, 2018). Many have their own statewide educators' association that holds annual meetings and conferences to share experiences and information with one another for the sake of contributing to the profession. There is a constant need for assessment in the efficacy of these programs to ensure that they are meeting educational standards put forth by the Commission on Dental Accreditation, adhering to the state specific scope of practice for the dental hygienist, and ensuring that the graduates are qualified to address the evolving needs of the general population. Since the publication of the *Surgeon General's Report on Oral Health* (U.S. HHS, 2000b), *Healthy People 2020* (U.S. ODPHP, 2018), and a *National Call to Action to Promote Oral Health* (U.S. HHS, 2003), educational systems have been pressured to reform "in order to address the oral health disparities within the U.S. society" (Cantrell, 2012, p. 10). Whilst recognizing the correlation oral health has on overall health and wellbeing, there have been ongoing revisions to the dental hygiene scope of practice nationwide to improve access to care for all (U.S. HHS 2000b). The growth of the profession demands a high quality product in the new graduates to meet the evolving, and growing needs of our citizens.

Definition of Terms

Affective process – Bandura (1994) defined as "processes regulating emotional states, and elicitations of emotional reaction" (p. 73).

American Dental Association – Established in 1859 the ADA is, "the professional association of dentists dedicated to serve both the public and the profession of dentistry.

The ADA promotes the public's health through, commitment of member dentists to provide quality oral health care accessible to everyone" (ADA, 2018, para. 4).

American Dental Education Association (ADEA) – The professional organization for dental and allied dental educators (ADEA, 2019, para. 1 & 2).

American Dental Hygienists' Association (ADHA) – Its mission is to "advance the art and science of dental hygiene by ensuring access to quality oral health care; increasing awareness of the cost-effective benefits of prevention, promoting the highest standards of dental hygiene education, licensure, practice, and research" (ADHA, Policy Manual, 2018, p. 2).

Applied learning – For the purpose of this research study applied learning includes a practicum experience, clinical rotation, internship, on campus clinic session, and laboratory courses such as radiology, or dental materials (The State University of New York, SUNY, Common Definitions of Applied Learning, para. 1 & 2).

Bandura self-efficacy theory – Defined by Bandura as the "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1977, p. 3).

Clinical skills – dental hygienists' clinical skills encompass patient assessments such as: obtaining a thorough medical history, exposing and interpreting dental radiographs, and completing restorative and periodontal charting. Communication and patient education is imperative for patient home-care and compliance. Furthermore, hygienists are expected to collaborate with a dentist (in the state of NY) with treatment planning and performing dental cleanings (prophylaxis) and deeper cleanings (scaling and root planing) (ADA, 2019, para. 2).

Cognitive processes – Bandura (1994) defined as "thinking processes involved in the acquisition, organization, and use of information (p. 74).

Commission on Dental Accreditation (CODA) - Is recognized by the United States Department of Education (USDE), as "the sole agency to accredit dental and dental related education programs conducted at the post-secondary level" (ADA, 2019, para. 2). CODA, "serves the public and profession by developing and implementing accreditation standards that promote and monitor the continuous quality and improvement of dental education" (ADA, 2019, Mission and Values, para. 2).

Communication Skills – Involves "transmission of verbal and non-verbal messages" (Munodawafa, 2008, para. 1). Related to health care communication "seeks to increase knowledge...and requires full understanding of behaviors associated with the sender and receiver and the likely barriers that are likely to exists" (Munodawafa, 2008, para. 2 & 3.

Competencies – Are many written statements set in place by the Commission on Dental Accreditation (CODA) describing the level of knowledge, skills, and values expected by program graduates (ADEA, 2003, para. 1).

Critical Thinking Skills - According to CODA (2011), The components of critical thinking are: the application of logic and accepted intellectual standards to reasoning; the ability to access and evaluate evidence; the application of knowledge in clinical reasoning; and a disposition in inquiry that includes openness, self-assessment, curiosity, skepticism, and dialogue (p. 10).

Dental hygienist – A healthcare provider responsible for "…assessing, diagnosing, planning, implementing, evaluating, and documenting treatment for prevention, intervention and control of oral disease" (ADHA, 2018, para. 14).

Perceived Self-efficacy – People's beliefs about their capabilities to produce effects

(Bandura, 1994, para. 2).

Preparedness - For the purpose of this research preparedness refers to the state of having

acquired enough knowledge, competence, and experience to safely practice as a dental

hygienist is a clinical situation (Cantrell, 2012, p. 14).

Professionalism skills - For the purpose of this research components of professionalism

skills include; infection control adherence and work conditions, ethical behavior,

professional appearance, attire and personal hygiene, team approach, positive

verbal/nonverbal communication and attentive to feedback, time management and

preparedness, protocol adherence, and thorough and complete documentation (Sullivan,

2005).

Psychomotor skills- Defined by de Andres et al. (2004) as "those that require the (student) to

have the capacity to coordinate sensorial information and muscular response in order to

perform a determined task" (p. 26).

Student – For the sake of this project, a student will be a recent graduate (within the years

2016-2018) from a dental hygiene program.

Conclusion

The profession of dental hygiene can benefit from this qualitative phenomenological

study by assessing the lived experiences of dental hygienists new to the profession regarding

their perceptions of confidence in their newly acquired skills. The results of this study can be

shared at a statewide meeting with other department chairs to potentially be the catalyst in

curriculum revision for these programs. Furthermore, this study will be eligible for publication

and available through Dune (Digital University of New England) the centralized online repository, which would expand its reach to a national and international level.

Included in chapter one is an emphasis of the statement of problem, purpose of study, and significance this research will have to dental hygiene programs. The research questions listed above will guide the focus of this study and be elaborated on in subsequent chapters. Chapter two will provide a concise review of the literature, followed by the research methodology in chapter three. Chapter four will present and interpret the acquired data, answering the research question as it relates to the purpose of study and problem statement. Finally, chapter five will provide a conclusion of the study overall and look towards future research in this area.

CHAPTER TWO

LITERATURE REVIEW

This literature review includes both theoretical works as well as empirical studies. It is presented addressing the following areas: The history and evolution of the profession of dental hygiene in the United States, the bodies that govern dental hygienists and their educational programs, state-wide variations to dental hygienists' scope of practice, best practices for student competence and confidence, findings of similar studies, and the conceptual framework of this study.

The databases searched to locate appropriate literature on this topic were from the University of New England's Library Services online database, which included PubMed and ProQuest. To ensure credibility, all of the selected articles were reviewed and selected based on their being peer-reviewed, scholarly journals, and books relevant to the topic. Several keywords and phrases were used separately and in combination to search for articles related to the topic and research question. Keywords and phrases included (a) perception of preparedness, (b) perception of confidence, (c) perceived self-efficacy in clinical skills, (d) dental hygiene, (e) clinical teaching methodologies, (f) critical thinking education, (g) problem-based learning, and (h) Bandura's social-cognitive theory.

Upon reviewing the literature, research gaps were revealed in the following categories: findings specific to recent dental hygiene graduates in the United States, findings that can influence curriculum reform within dental hygiene programs, dental preparation curriculum and assessment literature using Bandura's social cognitive theory as a framework, and finally findings that reflect the perspectives of the recent graduate.

The Conception of Dental Hygiene

During the 19th century, dentists were faced with a copious amount of tooth decay, and many teeth required extraction (Motley, 1986, p. 25). By the early 20th century knowledge of dental health and disease prevention became mainstream and dentists were also performing preventative treatments such as dental cleanings, or its professional term, *prophylaxis*. With a steadily increasing demand for dental services, the need for a professional to assist the dentist with "tedious, repetitious services" (McCarthy, 1939, p. 1), as well as providing preventative education, was introduced by Dr. Albert C. Fones in 1911 (Cantrell, 2012). Capitalizing on this need, Dr. Fones trained his cousin, Irene Newman, as the first dental "auxiliary" (Motley, 1986, p. 17). Together, Dr. Fones and his cousin developed the first dental hygiene program in Bridgeport, Connecticut in 1913. Fones's vision of the dental hygienist being a public practitioner for education and disease prevention created the profession as it is known today.

Governing Bodies

Dr. Fones had the insight and desire to standardize dental hygiene education nationally along with local, state, and national organizations. Although influenced by the individual State Boards of Dentistry, and Boards of Dental Examiners, it is the individual state dental practice acts that maintain control of the duties of dental hygienists. Their recommendations resulted in a wide range of dental hygiene responsibilities, clinical licensure exams, and restricted mobility of dental hygienists from state to state (Cantrell 2012, ADHA, 2011a). The profession of nursing, for example, has no mobility restrictions, as nurses can practice in another state without taking a state specific board exam.

Together, the Council on Dental Education and the American Dental Hygienists

Association (ADHA) developed the "Requirements for the Accreditation of a School of Dental Hygiene" (Motley, 1986, p. 43). In 1947 the American Dental Association (ADA) approved this document which formalized the minimum educational standards, and length of study to become a dental hygienist (Motley, 1986). In 1975 the Commission on Dental Accreditation (CODA) was developed as an accrediting authority within the United States Department of Education (CODA, 2011). CODA was established to serve "the public and profession by developing and implementing accreditation standards that promote and monitor the continuous quality and improvement of dental education programs" (CODA, Mission and Values, para. 1). It is not mandated that a dental hygiene program seek CODA accreditation. However, the ADHA stated that the completion of an accredited program is a minimum requirement to enter into the profession of dental hygiene (ADHA, 2010a). Furthermore, CODA stated that graduates from a non-accredited program "may be ineligible for certification/licensure examinations" (CODA, 2011, p. 28).

CODA Standards for Dental Education. Over the last century, dental hygiene programs in the United States have grown at an accelerated rate to 330 (CODA, 2018). In order to achieve and maintain accreditation, these dental hygiene programs must prove that they are abiding by the standards set in place by CODA. The CODA standards consist of written statements known as competencies describing the level of knowledge, skills, and values expected by program graduates (ADEA, 2009).

The Commission on Dental Accreditation (CODA) adopted Standard 2.9 in 2010 which states that "Graduates must be competent in the use of critical thinking, and problem solving including their use in the comprehensive care of patients, scientific inquiry, and research methodology" (CODA, Accreditation Standards for Dental Education Programs, 2013). Once

this standard was enacted, it was strongly encouraged for faculty to be trained in how to teach and promote critical thinking to their students (Saeed, 2017). Furthermore, CODA requires documentation for each course that incorporates critical thinking, detailing how those skills are gained within that course (CODA, 2013). This documentation allows for the assessment and validation of critical thinking skills.

The original Standard 2.9 has been expanded and revised to what is currently Standards 2-21, 2-22, and 2-23 (CODA, 2019). CODA's critical thinking standard 2-21 requires students be "competent in the application of self-assessment skills to prepare them for life-long learning" (CODA, 2019). Standard 2-22 requires students to "be competent in the evaluation of current scientific literature" (CODA, 2019). Finally, standard 2-23 requires graduates to be "competent in problem solving strategies related to comprehensive patient care, and management of patients" (CODA, 2019).

CODA's dental hygiene education standards also include ethics and professionalism as standards 2-19 and 2-20 (CODA, 2019. Standard 2-19 maintains that graduates "must be competent in the application of the principles of ethical reasoning, ethical decision making, and professional responsibility as they pertain to the academic environment, research, patient care, and practice management (CODA, 2019). Furthermore, standard 2-20 states that graduates must be "competent in applying legal and regulatory concepts to the provision and/or support or oral health care services" (CODA, 2019). To maintain their accreditation status, institutions must maintain and provide documentation proof to CODA, as well as deemed compliant on site visits. Institutions, colleges, and universities are up for accreditation renewal every seven years.

Statewide Variations of the Scope of Practice. There are Federal-level efforts to increase access to oral health care, especially for the underserved and vulnerable populations, via such documents as *Healthy People 2020, the Surgeon General's Report on Oral Health,* and a *National Call to Action to Promote Oral Health*. The National Academy of Medicine, formerly the Institute of Medicine (IOM), advised that state practice laws be evaluated and amended to positively improve access to oral health care. States enact their own laws that determine the services hygienists can perform, in what setting they can practice, and under what level of supervision from a dentist they can practice (ADHA, 2018).

The nationwide requirements to practice as a dental hygienist include: graduating from an accredited dental hygiene program, be successful in a national written examination, be successful in a clinical examination administered by the state or designated board, and be successful in a jurisprudence examination (Cantrell, 2012). Other requirements may include "criminal background checks, interviews, evidence of continuing education, letters of reference, reviews of patient case reports, or a specific…number of practice hours within an immediate time frame may also be required, depending on the individual state" (Cantrell, 2012, p. 32). Currently, dental hygienists are the only allied dental professional who must graduate from an accredited program and are licensed (Okwuje, Anderson, & Hanlon, 2010).

As of May 2018, state-wide variation in clinical practice included conducting some treatments without a dentist being physically present (ADHA, Practice Act Overview, 2019). Variation in the nationwide scope of practice include; (a) a dental hygiene diagnosis, (b) if a hygienist is allowed to administer local anesthesia, (c) under what kind of supervision are they allowed to administer local anesthesia, (d) if they are allowed to supervise dental assistants when performing tasks within the dental hygiene scope of practice, (e) the eligibility of direct

Medicaid reimbursement, (f) the ability to assess oral conditions and develop a treatment plan, (f) provision of sealants without prior examination, and finally (g) direct access to patients without prior examination by a dentist (ADHA, Practice Act Overview, 2019). These variations are directly related to the federal government as well as other organizations working to increase access to care for all U.S. citizens.

Best Practices in Promoting Student Confidence

Confidence is a term that can be used interchangeably with self-efficacy. A literature review was conducted to assess what teaching behaviors and strategies are most beneficial in "Promoting Self Confidence in Clinical Nursing Students" (Lundberg, 2008). Utilizing Bandura's self-efficacy theory as a framework, Lundberg (2008) discussed varying teaching behaviors and strategies to promote self-confidence, including the use of simulators, journaling, peer-modeling, and story-telling. Acknowledging that clinical instructors are given the task of deciphering which students lack clinical confidence versus clinical knowledge, emphasis was placed on early assessment of clinical confidence to allow for changes in the schedule to better fit the students' needs, allowing them more practice time to further develop certain skills. Lundberg's review of the literature revealed a positive correlation between students who engaged with human patient simulators (HPS), and their clinical confidence levels related to specific clinical tasks (Lundberg, 2008). Throughout the study, encouragement in the form of verbal persuasion and positive feedback is noted, as are opportunities for students to be successful to repeat those successes.

The site for the Cantrell (2012) phenomenological study was a rural town community college, where eight recent graduates were interviewed. It concluded overall positive

perceptions of preparedness to enter into clinical practice. However, negative perceptions of preparedness were found when it came to critical thinking and communication skills.

Bandura's first source of self-efficacy is performance accomplishment. Carrying out the skill is reported to increase confidence to perform the skill again. This theory is supported by many studies, including a study by Porter, Morphet, Missen, and Raymond (2013), which concluded that "clinical skill performance is reported to be the most influential source of self-confidence" (p. 83). Furthermore, Lundberg (2008) noted that confidence is an important motivating factor in a student's ability or desire even to be successful in learning a new skill. She found that, "unless students believe that they can be successful in a task, they will not attempt the task in the first place" (p. 86). The literature identified how this goal of not only competence, but confidence, can be achieved in a variety of ways including (a) peer-modeling, (b) self-reflection, (c) positive verbal reinforcement and (d) hands-on applied learning scenarios (Alrahlah, 2016; Anderson & Kigen Lundberg, 2008; Carlson, Kotzé, & van Rooyen, 2005, Kotze, and Van Rooyen, 2005; Kassim, McGowan, McGee and Whitford, 2016; Lennon, Brook & Robinson, 2006; Miles, Kellet, & Leinster, 2017; Moore, 2007; Simonian, Brame, Huny & Wilder, 2015).

Applied Learning. The State University of New York (SUNY) defines applied learning as an

> Educational approach whereby students learn by engaging in direct application of skills, theories, and models [to which they] apply knowledge and skills gained from traditional classrooms to hands-on and/or real-world settings, creative projects or independent or direct research, and in turn apply what is gained from the applied experience to academic learning. (SUNY, 2019 para. 2)

For the purpose of this research study, applied learning includes: an out-clinic rotation, on campus clinic sessions, and laboratory courses such as radiology and dental materials. Applied learning is directly related to Bandura's first source of self-efficacy entitled mastery experiences, where having successful experiences carrying out a new skill promotes confidence in having future successes with this task. Bandura (1994) emphasized the importance of positive learning experiences. Governed by CODA, accredited dental hygiene programs are obligated to provide their students with a specific number of weekly clinic hours. Table 2.1, entitled CODA Standard 2-10 Clinic Hours, displays the minimum allotted weekly hours for clinical practice in a dental hygiene program. Furthermore, Standard 2-11 states that programs must have an established system to ensure a sufficient number of patient experiences to afford all students the opportunity to achieve stated competencies (CODA, 2013).

Table 2.1

CODA Standard 2-10 Clinic Hours

Semester	Number of Clinic Hours per Week
Pre-clinic	6
First year- begin treating patients	8-12
Second year	12-16

Commission on Dental Accreditation: Accreditation Standards for Dental Hygiene Education Programs.

Several studies support the claim that applied learning experiences are beneficial to students' perception of competence in his or her field of study. Miles, Kellet, and Leinster (2017) concluded that resident doctors benefitted from the applied learning methodology of patient–based learning (PBL). They felt better prepared for tasks associated with communication, team working, and paperwork. The Simonian, Brame, Huny, and Wilder study

(2015) concluded that there was "an overall positive gain in clinical self-confidence" upon the completion of a three-week practicum (p. 152). These practices contribute to applied learning experiences, the perception of preparedness, and the promotion of critical thinking skills.

Similar to the Simonian et al. (2015) study, the results of the Anderson and Kigen (2008) study validated the benefits of nursing students undergoing a practicum experience, and the authors acknowledged the UK as a catalyst in this practice, changing how other programs are developed. It was through interviews with students in these practicum experiences that a student proclaimed, "I felt like a real nurse" (p. 444). The Anderson and Kigen study supports a positive correlation between a practicum experience and students' confidence in their new clinical role. Furthermore, the study also depicted how research conducted in one organization can have a positive effect on others in regard to curriculum reform.

Moreover, the findings of Lennon, Brook & Robinson (2006) strengthened the claim that applied learning experiences are imperative to boosting the healthcare professionals' confidence in their technical skills (p. 566). The study examined the effects of dental students' clinical confidence after being placed in different outreach programs. It concluded that a practicum experience in a primary care setting was beneficial to dental students' learning experience, versus dental school alone. Due to the CODA standards, students are given ample opportunities to have successful patient experiences that can positively affect their clinical confidence level.

Mentorship. Another confidence promoting trend found in the literature was the benefit of students having a positive role-model. Role models came in varying forms, including a peer-model, an assigned professor, and being paired with a designated clinical partner. Medical residents in their first year of residency claimed the lack of support in their new position was affecting their ability to work (Miles, Kellet & Leinster, 2017). Lacking an able person to guide

them through their new endeavor inhibited them not only from performing their job to the fullest capacity, but being fully engaged to learn during this experience. Kassim, McGowan, McGee and Whitford (2016) claimed that "helpful medical school career guidance had a strong association with perceptions of preparedness of medical graduates for hospital practice" (p. 16). This is a theme amongst many medical and professional career paths, that students have a more successful career, and a higher perception of preparedness, with the guidance of someone from their field.

The Carlson, Kotzé, & van Rooyen (2005), study described the effects of not having a positive role model. The participants of this South African study claimed that there was a lack of positive role models for them to mirror regarding acceptable behavior as a new nurse. According to the study, these students were not provided a positive example of appropriate behavior of nursing personnel. This hindered their education and experience in their clinical rotation. In alignment with Bandura's third and fourth Source of Self-efficacy, verbal persuasion and emotional arousal, having someone emotionally invested in one's success, and verbally encouraging a person, has a positive effect on academic performance and confidence (Bandura, 1994). Future research could expand on the value of mentorship has on new clinicians.

Peer-modeling. Peer modeling is a teaching strategy that has been used for decades amongst varying age groups, and was likely the foundation for problem-based learning (PBL) today (Savery, 2006). Lundberg (2008) referred to peer-modeling as a means to boost a less confident student's skills and self-assessment. Lundberg suggested the strategic pairing of students as a means to replicate a desired behavior. The less confident student identifies with his/her partner, becoming less intimidated to ask questions and engage in the subject matter.

This provides the intended results of a higher confidence level in the newly acquired skills for both parties (p. 88).

The more competent students' skills are reinforced by teaching the less competent student, as to teach is to learn twice (Whitman, 1998). Furthermore, the Kassim et al. (2014) study examined the use of pairing students as a teaching strategy to promote soft skills amongst clinical dental students. It was concluded that the practice was beneficial to the majority with regard to communication, and team work specifically. This finding aligns with Bandura's second source of self-efficacy, vicarious experiences, where students have the opportunity to watch instructors and peers demonstrate how to perform a variety of assessment skills and demonstrate instrumentation, which aids in increasing a sense of self-efficacy (Bandura, 1994).

Problem-Based Learning. Problem based learning, or PBL, is defined widely as students working collaboratively to solve complex problems that help to develop knowledge, as well as reasoning, communication, self-assessment skills, and critical thinking skills. The Stanford University Newsletter on Teaching (2001) noted that presenting problems in this format aids in maintaining student interest in material, as they realize that it is imperative to their success in this field. The Moore (2007) study promoted the use of PBL by concluding "positive outcomes in the intended areas of problem solving and critical thinking, team skills, and personal growth" (p. 1058). The Alrahlah (2016) study also found "evidence clearly supports the effectiveness of PBL in dental education…students learn to become associates in the teaching and learning process, they take responsibility for their learning …this approach has improved the effectiveness of teaching in dental education" (p. 158). Placing the responsibility on students for their learning, to be active in acquiring data, utilize their critical thinking skills, and hone their reasoning skills to determine their conclusions. These vital critical thinking skills will be useful

throughout their careers, as they will need to be fluent thinkers upon graduating. Closely applicable is the Carlson, Kotzé, & van Rooyen (2005) study of a medical program in which a finding showing great improvement on post-test scores led to acceptance of PBL over conventional learning. Furthermore, PBL promoted students' understanding, interests, and self-directed learning.

In applying the concepts for PBL, many clinical programs are utilizing human simulators, and have been for over 50 years. Their long-contended benefits of being used in conjunction with traditional teaching methods have had a positive effect on student learning. These simulators aid in increasing student knowledge by allowing them to practice specific skills in a safe environment and decreasing their anxiety by providing an opportunity to practice prior to a "real-life" scenario. This is also the scenario for first semester dental hygiene students and those who first practice on a dental manikin prior to working on their designated partner. This practice allows them to obtain a foundation for basic instrumentation skills, such as grasp, adaptation, fulcrum, and stroke, prior to working on a live human.

Self-reflection & Journaling. The concept of self-reflection in education was popularized by the works in Dewey's "*How we think*" (1991). He described reflection as "active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions for which it tends" (p. 9). His theory is the foundation to what educators consider critical thinking today. Although the definition varies throughout the literature, the concept remains. The Lew and Schmidt's (2011) study, "Self-reflection and academic performance: Is there a relationship?" conducted school year assessments on learning which concluded that self-reflection on how and what students have learned does lead to improvements in academic performance.

Another reflective methodology is journaling, which Lundberg (2008) encouraged not as a means of simply reporting the day's activities, but as a reflection on one's feelings on how they "did something right" (p. 174). This creates an opportunity for the instructor to insert positive reinforcement and feedback. As Carlson, Kotzé, & van Rooyen (2005) claimed, reflection of one's personal experiences and practices draws on many forms of knowledge. Reflection relates to Bandura's fourth source of self-efficacy, emotional arousal, where reflecting on experiences can trigger an emotional arousal, deepening the impact the experience has on the individual, and solidifying a memory or learned experience (Bandura, 1994, p. 71).

Dreyfus Model of Skill Acquisition

Frequently found in professional healthcare literature is the five stages of skill acquisition known as the Dreyfus Model. The five stages of this skill acquisition model include; novice, competent, proficient, expert, and finally master (Dreyfus & Dreyfus, 1980). This model aligns with dental hygiene curriculum as students progress through stages of learning and skill development throughout the program. This theory claims that "skill in its minimal form is produced by following abstract rules, but that only experiences with concrete cases can account for high levels of performance" (Dreyfus & Dreyfus, p. 5). Instructors must be able to assess students' skill level to determine appropriate feedback, type of instruction, and assignments to facilitate their learning advancement (Cantrell, 2012; Honken, 2013).

Conceptual Framework

This literature review highlights many of the best practices in promoting student self-confidence in their newly acquired clinical skills, all in which align to one of Bandura's four sources of self-efficacy. Through the applied learning experiences within the curriculum, students engage in "mastery experiences" (Bandura, 1994, p. 71), Bandura's first source of self-

efficacy. Vicarious experiences, Bandura's second source, occur during clinical practice hours, and laboratory courses where students have the opportunity to witness their instructors and peers experience success, which in return strengthens their "beliefs that they too possess the capabilities to master comparable activities required to succeed" (Bandura, 1994, p. 72). Students may also experience verbal persuasion, Bandura's third source of self-efficacy, from their clinical instructors, didactic professors, and even peers encouraging them to persevere and succeed. When students are verbally persuaded it encourages them to try hard enough to succeed, promotes skill development, and a sense of personal efficacy (Bandura, 1994, p. 72). Finally, the fourth source of self-efficacy, emotional and physiological states, refers to how one perceives, interprets, and reacts to stress, and how that reaction can positively or negatively affect their sense of self-efficacy, "positive mood enhances perceived self-efficacy, despondent mood diminishes it" (Bandura, 1994, p. 72).

Conclusion

Identifying what promotes students' sense of self-confidence in this literature review acts as a foundation of this study. No studies were located that addressed the research question driving this study. The majority of the literature coincided with several themes including; the benefit applied learning has on student confidence, the direct relationship peer-modeling and mentorship has on student confidence, and how varying teaching methodologies and behaviors positively affect student learning. The literature was not specific to the field of dental hygiene. It did however, concern other health care related programs. The above review of the literature supports the need for this study to contribute to dental hygiene, dental hygiene education, and the development of future dental hygiene students.

The information obtained through this literature review may benefit stakeholders, including the program directors and the institutions that house them. Results of this study will also inform students, teachers, administrators, and communities these dental hygienists will serve. The results may contribute to a transformative approach to the curriculum that better supports student needs and leads graduates to have an increased sense of confidence.

CHAPTER THREE

METHODOLOGY

The purpose of this qualitative study was to develop a description of the experiences recent dental hygiene graduates have with feeling prepared to practice as a novice hygienist. This chapter provides a restatement of the problem, the research questions, and the instrumentation. Background information about the setting, procedures for data analysis, the establishment of validity, ethical considerations, and limitations of the study are also provided.

The identified problem is the lack of research from the perspective of recent dental hygiene graduates relative to their experiences with clinical preparedness. This research evaluated dental hygiene graduates' experiences regarding their ability to apply their newly acquired clinical, critical thinking, and professionalism skills upon entering their first clinical position. Little research exists on recent dental hygiene graduates' experiences concerning those skills, so study results can inform educators with invaluable information to promote students' confidence in their clinical, professional, and critical thinking skills.

Research Questions

The main research question guiding this study is: What were the experiences of dental hygienists regarding their clinical preparedness as they first entered the workforce? Related research questions include:

1. What are newly graduated dental hygienists' experiences with learning and adapting clinical skills utilized in dental hygiene practice?

2. What are newly graduated dental hygienists' experiences with utilizing critical thinking skills in dental hygiene practice?

3. What are newly graduated dental hygienists' experiences with developing professionalism skills in dental hygiene practice?

4. What are the newly graduated dental hygienists' experiences with developing confidence as they transition from the role of student to novice clinician?

Design of the Study

The principal investigator has witnessed students struggle to acquire clinical skills, critical thinking skills, and maintain a professional demeanor in recent years. This in turn has been the catalyst for this research study. Much of what we learn is derived from our lived experiences (Guile & Griffiths, 2010). Creswell (2013) stated "The reality of an object is only perceived within the meaning of the experience of an individual" (p. 78). Therefore, assessing life experiences from the recent graduate is an appropriate research approach in revealing the phenomenon of becoming a confident hygienist.

The qualitative methodology of a one-on-one interview was used until saturation of the data was achieved. Saturation of the data was determined when interviews yield no new themes, and no new data (Fusch, 2015). Using this methodology, combined with Bandura's self-efficacy theory, allowed the researcher to describe the lived experiences of the newly graduated dental hygienists in becoming competent clinicians. It was stated in Merriam (2009) that, "from the philosophy of phenomenology comes a focus on the experience itself and how experiencing something is transformed into consciousness" (p. 24). Schram (2003) defined phenomenology as a "study of people's conscious experience of their life-world, that is, their everyday life and social action" (p. 71). Furthermore, Donalek (2004) defined phenomenological studies as "human experiences through descriptions provided by the people involved" (p. 355). The aforementioned emphasizes the alignment of the research questions to the study type.

Phenomenological interviews revealed the lived experiences of ten recent dental hygiene graduates, with a focus on their experience in how prepared they felt to practice in regards to their clinical, professional, and critical thinking skills. Revealing the "essences (or core meanings) mutually understood through a phenomenon commonly experienced…(where) the experiences of different people are bracketed, analyzed, and compared to identify the essence of the phenomenon" (Merriam, 2009, p. 25). This essence consists of what they experienced and how they experienced it (Moustakas, 1994). Although the researcher reflected on her own lived experiences in regard to her education, she strived to maintain a phenomenological approach and "suspend all judgements about what is real--the 'natural attitude' [this suspension is called] 'epoche' by Husserl" (Creswell, 2013, p. 77). Those prejudices or assumptions are then bracketed, or temporarily set aside, to allow a conscious examination (Merriam, 2009, pp. 25-26).

To gather data, ten one-on-one interviews were conducted to determine the essence, or common meaning of the lived experiences participants have with the phenomenon of applying their newly acquired skills (Merriam, 2009, p. 25). To ensure privacy to the participants, interviews were conducted either in person, at a convenient location for both parties depending on schedule availability, or by telephone. Interview questions were reviewed by a panel of health care and educational professionals for clarity and relevancy. The questions focused on providing descriptions for each of the research questions. Interview questions were developed to further explore participants' experiences relevant to each research question.

The interviews provided data in the personal stories of recent graduates related to their coursework, when they transitioned to practice, and their early practice. The participants'

recollection of their experiences are used to identify methods or strategies of instruction that enhanced or hindered student learning (Creswell, 2013).

Setting

The site for this research is an East Coast, four-year public college with approximately 10,000 undergraduate students enrolled in one of their four schools of Arts & Sciences, Business, Engineering Technology, and Health Sciences. It is home to an associate of an applied science degree in dental hygiene program, which prepares students for licensure and entry to the dental hygiene profession, as well as certification in the administration of local infiltration anesthesia/nitrous oxide analgesia. This program is accredited by the Commission on Dental Accreditation (CODA). This site was chosen as it was one of the researcher's places of employment. Participants may or may not have encountered the researcher as a clinical instructor during their time in the dental hygiene program. This college and program has been the recipient of many national accolades and awards. The college maintains its dedication to its students by providing exceptional academic and applied learning experiences, and maintaining post-graduate job placement within six months. As the demand for oral care grows in the United States, so does the variety of opportunities available to new graduates (Institution's Website, 2019). Currently, there are six potential roles for the graduate dental hygienist including; educator, researcher, administrator, change agent, consumer advocate, and of course, the clinical hygienist (Institution's Website, 2019).

Participants

The researcher intended to recruit participants via a Facebook [TM] posting. The first recruitment effort was not successful. As a result, a second effort took place that included the researcher privately messaging members of the sites dental hygiene Facebook [TM] page see if they

were interested in participating in a study, and met the requirement specifications. Participants

in this study were chosen in a deliberate manner known as purposive sampling (Speziale &

Carpenter, 2007). To be eligible to participate in this study, all participants had to have

graduated from the associate in applied sciences dental hygiene program at the specified

Northeastern state college, during the years 2016 through 2018. Since this research is based on

recollection, memories, and opinions, this three-year range was deemed most appropriate

(Cantrell, 2012). Through the affiliated Messenger application, the researcher was able to

"reach" twenty-eight graduates and invite them to participate. Out of the twenty-eight who

received a recruitment letter via messenger, nine did not respond to the invitation, eight did not

qualify as they graduated outside of the 2016-2018 allotment, and two showed interest in

participating but did not go forward. This resulted in nine graduates going forward in

participating in the study, and the final participant was referred by one of her classmates to

participate.

Considering the Dreyfus Model of Skill Acquisition where experience enhances skill

development and learning, it is impossible to ensure each student has the same quality of

learning experiences throughout the program, and therefore differences in terms of clinical skills

were expected to provide a diversified perspective, yielding rich data (Dreyfus & Dreyfus, 1980).

Variations in terms of prior dental experience was anticipated (Bell 2010; Yin, 2010).

The criteria for participant eligibility included: (a) graduation from the A.A.S in dental

hygiene program at the selected site, (b) having worked or be currently working as a licensed

dental hygienist, (c) willingness to participate in an interview with open-ended questions,

(d) agreeing to an interview that was recorded, and (e) willingness to allow the data generated to

be used in a doctoral dissertation and publication (Moustakas, 1994). Upon receiving IRB

approval, access to approximately 120 graduates was obtained via the college's dental hygiene Facebook ™ page. Recent graduates were sought out via the direct messenger feature where the request to participate was posed by the researcher.

The initial correspondence included a recruitment letter describing the doctoral dissertation study, provided background information on the lead investigator and stated what was expected of participants. Those who were interested in participating received the interview questions in advance to review and assist in the reflection process of recalling their experiences, along with a consent form to review. Once a graduate agreed to participate, informed consent was obtained by the lead researcher with them acknowledging their rights by signing the consent form. If an in-person interview was not possible, a phone interview was used to conduct the interview. To obtain consent for this mode, the researcher forwarded the informed consent form to the participant via e-mail, who provided either a virtual signature, or printed, signed, scanned, and returned the consent form. If that option was not possible, verbal consent was obtained. (Appendix B)

Instrumentation

With the methodology of one-on-one interviews, the lead researcher can "reduce individual experiences with a phenomenon to a description of a universal essence" (Creswell, 2009, p. 76). This description consists of "what" and "how" they experienced (Moustakas, 1994) their dental hygiene education. A similar study was conducted by Cantrell in 2012. Permission was obtained from the author to use and modify the interview questions from that study (See Appendix D). Prior to the individual interviews, a panel of experts consisting of research committee members reviewed the interview questions for clarity and relevance to the research questions.

An informal, interactive process with open-ended questions was used to maintain a dialogue (Moustakas, 1994). Weiss (2006) defined a stakeholder as an entity that possesses "…some stake in the quality of outcomes" of transformation (p. 474). Potential stakeholders for this investigation include CODA, as revealing a trend in efficacy of the curriculum, or lack thereof, can potentially influence the accreditation standards. Additional stakeholders include the communities these graduates will serve. Dental hygienists are exclusively on the front lines of their patients' oral health. In addition, there is an abundance of research that supports a direct correlation between oral health and systemic health overall (Hakeem, Abdul, Hussain, & Razvi, 2019; Kane, 2017; Nagpal, Yamashiro, & Izumi, 2015), further necessitating competent clinicians in dental practices. The department chairs, administrators, and faculty can also influence their future curriculum, as they may be encouraged to modify their current teaching methodologies and strategies.

Data Collection

Lived experiences of these recent graduates was obtained through a semi-structured interview to gain knowledge of how the phenomenon of transitioning from master student to novice clinician occurs. Data was obtained by conducting individual interviews consisting of seventeen open-ended questions regarding the students' experience relative to their clinical education, and sense of preparedness as they transitioned into the workforce. Follow up questions were asked for clarification and confirmation of responses.

Once a graduate agreed to participate, they contacted the researcher either by telephone or email acknowledging their willingness to volunteer. Thereafter, an informed consent form (See Appendix B) was obtained acknowledging that the interview would be voice-recorded and they were provided with a list of the interview questions to allow them time to reflect on their

experiences prior to the actual interview. Consent forms, researcher's notes, as well as any material consisting of any personally identifying information, including email addresses, is stored in a locked file box in the researcher's home to which she alone has access for five years. Whereafter, they will be destroyed. To maintain confidentiality during the interview, no personally identifying information was used, and each participant was assigned a pseudonym such as "P1". Participants were assigned a number so the lead investigator could associate the individuals with their interviews. Interviews ranging between 30 - 60 minutes were recorded and transcribed via the dictation software Temi ™. Should a participant mention the name of the college, or any personally identifying information, it was withheld from the transcription document.

Data Analysis

The researcher has experienced the phenomena of transitioning from a master student to a novice clinician. Therefore, to achieve a state of "purified consciousness" (Moustakas, 1994, p. 85), the researcher had to consciously and subconsciously suppress any attitudes or life experiences related to the subject matter. Moustakas (1994) referred to this action as "bracketing" (p. 85), or separating one's own attitudes and feelings with the subject matter to be open to the lived experiences of others. Assuming the researcher was able to maintain neutrality, or "epoche" as it is also referred to (Moustakas p. 85), the researcher was open to receive new information (Moustakas, 1994). The process is necessary for a phenomenological approach.

Data analysis began with organization of the data. Once transcription was completed the investigator manually interpreted and coded the data in identifying themes in the participants' responses (Creswell, 2013). Parse, Coyne, and Smith (1985) stated that analyzing this type of data requires the researcher to "dwell with the subjects' descriptions in quiet contemplation"

(p. 5). Following Moustakas's "steps of phenomenological reduction" (Moustakas, p. 97), the researcher "bracketed" (p. 85) her thoughts and emotions with her experiences related to the phenomena of transitioning to a novice clinician. Once the data was obtained, "horizontalization" (p.97) was used to give every statement equal value prior to being grouped into identifying themes. Themes were developed based on pattern coding, frequency coding related to frequency in the phrases, and common words/phrases used in participant narratives.

Participants' Rights

In an effort to safeguard participants' identity, potentially identifying information was removed from the transcripts, and numbers were used to identify which interview was being referenced for the researcher. Participants were de-identified and their right to privacy was respected throughout each stage. Informed consent was obtained for each participant prior to the interview. The consent form articulates that all measures will be taken by the lead investigator to ensure the participants' data remains confidential, and that no repercussions will be incurred by the respondents regardless of their response to prompts. The Institutional Review Board (IRB) of The University of New England, as well as the research site, reviewed the proposal for this study and determined it was eligible for exemption from full review. Furthermore, a university-established dissertation committee has overseen this entire dissertation process.

Prior to conducting the study, participants were informed of the goals of this study and how information obtained will be used. Additionally, they were notified by means of informed consent of the time required of them, and that the interviews will be voice recorded either using the application Temi ™ for in person, or telephone interviews (Appendix B). The investigator is the only individual who had access to the interview recordings. Participants were notified about their rights when volunteering to participate, their right not to answer a question during the

interview, and the right to withdraw from this study at any time. By reading the form and providing a signature or verbal response to the informed consent, the participants acknowledge awareness of their rights and the purpose of the study.

Assumptions and Limitations

It is assumed that there is an essence of the shared experiences the participants have with the phenomena of transitioning from a master student to novice clinician (Dreyfus & Dreyfus, 1980). It is also assumed that the participants are able to accurately recall the experiences they encountered while in the program and in their first positions as a hygienist. Because this researcher may have had prior encounters with the participants as she is a clinical instructor in this program, it is assumed that the lead investigator was able to apply the phenomenological method of bracketing and conduct the research in an unbiased manner (Moustakas, p. 85). Another assumption is that the potential participants are not only using Facebook ™ for social media and following the college's dental hygiene page, but that they also have the messenger feature affiliated with Facebook ™ in order to receive the direct recruitment message from the researcher.

This study is limited to registered dental hygienists who completed an associate in applied science degree at the study site within the years 2016 – 2018. The perceptions of this specific population may differ from those from an accelerated program, as well as those in differing geographical areas. Because the requirement to participate required only that the participant graduated from the associate level program from the research site within the last three years, another potential limitation is that there is no specific amount of clinical experience required by each participant. No distinction is made for those who are practicing full-time or part-time, and no specificity as far as the type of dental practice that employs them. Another

limitation to this study is that those who agreed to participate may be those students who felt more clinically prepared, and therefore more confident to participate. A final limitation of the study is that the lead researcher may have instructed the participants during their time of enrollment, which may affect the validity of their responses.

Conclusion

Chapter three details the qualitative phenomenological investigation, the setting, participants, data collection and analysis process as well as the participants' rights in participating in this study. Finally, the potential limitations were considered. This qualitative study documented the perspectives of new dental hygienists in the Northeast region on how their experience as a dental hygiene student prepared them in becoming a confident licensed hygienist. Chapters four will address the results and chapter five will address conclusions and recommendations of this study.

CHAPTER FOUR

RESULTS

The purpose of this qualitative study was to document the perspective of recent dental

hygiene graduates' experience with feeling prepared to enter the workforce specific to their

clinical skills, professionalism skills, and critical thinking skills. The initial analysis and

interpretation produced themes that expanded upon the research questions, providing findings

that may be valuable for future decisions related to this program. Findings that came from the

narrative data may assist dental hygiene educators by informing future decisions that may

transform their educational practices. Findings address student preparedness regarding teaching

methodologies and strategies that benefit future students and the communities they will serve.

This chapter is divided up into the following sections: participants, analysis method, presentation

of results, thematic patterns derived from interviews, interpretation and conclusion. Verbatim

interviews were manually coded and ten categories emerged. Categories were then grouped into

five themes and eleven subthemes. Each were linked to theories and concepts in the review of

the literature.

Recruitment of Participants

The original recruitment design intended to have the institution's Alumni Association e-

mail a recruitment letter inviting the 2016-2018 graduates from the Associate in Applied Science

of Dental Hygiene to participate in this study. This approach would have allowed access to a

higher number of potential participants. When the researcher was ready to send the recruitment

letter to the recent graduates, she was unable to use this strategy for recruitment. A second

approach was planned and enacted as it was determined that the participants would be obtained

through the college's dental hygiene Facebook^{tm} page. The IRB application was revised and resubmitted, and a second approach was put in place.

Data Recording

Permission to audiotape the individual interviews was obtained prior to the interview where each participant had the opportunity to read and review the informed consent prior to signing. The recording and transcription software TEMI ^{TM} was used to record and transcribe each interview. For quality assurance, an additional external audio recording device was also used simultaneously. These recordings were transcribed and that text provided data for the researcher to reflect on responses and analyze the language used. The recording devices also allowed the researcher to make field notes during the interview which assured the participants that their responses had value (Creswell, 2009). As emphasized by Speziale & Carpenter (2007), all field notes and memos were maintained by the researcher as they are significant in data analysis.

Individual Interviews

As a matter of convenience for the participants, all ten interviews were conducted over the phone. After consent was granted, an external recording device and the TEMI software were initiated. The initial questions were designed to obtain demographic information and put the participant in a comfortable state. This comfort level helped the researcher gain insight on the experiences the participants had with feeling prepared as a novice hygienist. The participants were aware of their option to not answer or discontinue the interview at any time. Participants were given the option to review their transcribed interview for clarity in their responses, and to alter their responses if they felt they were inaccurate. All participants declined this option.

Analysis Method

Interviews were recorded and transcribed using the software TEMI ™, as well as on an additional external recording device to promote quality assurance. Notes were taken during the interview to capture meaningful details, highlight key points, and manage any potential bias. Once individual interview transcriptions were completed by TEMI ™, they were reviewed along with the audio recordings and corrected by the researcher to ensure verbatim transcription. The audio recordings and transcriptions served as the data source for this study. Frequently used phrases, concepts, and ideas were highlighted by the researcher revealing commonality amongst interviews. After reviewing each transcribed interview several times, a thorough reflection occurred. This prepared the researcher to proceed with coding and analysis which allowed for an interpretation of each individual's perspective on the subject matter.

Transcribed data was manually coded. Coded data were organized into major and minor themes, and then synthesized to eliminate redundancy and overlap. This process of "sifting through the data" (Potter, 2003. p. 83), made analyzing a more direct process. The researcher used index cards to document important phrases, thoughts, and experiences which led to the development of themes and sub-themes.

Participant Demographics

Participants were selected for this study via purposeful and convenience sampling (Creswell, 2013). As of January 6, 2020, ten graduates of the Northeastern state college's Associate in Applied Science degree in dental hygiene, who were members of their program's Facebook ™ page, agreed to an interview. Table 4.1 provides the results of the initial demographic questions posed to participants by the researcher to establish comfort, and document their dental experience prior to enrolling in the dental hygiene program. Of the sample

respondents (n=10), all were currently practicing clinical dental hygiene, and all were female. The ethnic breakdown of the participants was; six White/Caucasian, three Hispanic/Latino, and one Asian/Indian. Participants varied in age with two being within the 20 - 25 age range, five in the 26 – 30 age range, and three in the 31- 35 age range, making them all of the millennial generation. One of the participants obtained her dental hygiene license in 2016, three in 2017, and the remaining six in 2018. All participants are currently employed, six exclusively at a general dentistry practice, one at a prosthodontist, with the remaining three dividing their weekly hours between pediatrics, orthodontics, and general. Weekly hours varied as follows; one participant in the 5-10 hours a week range, two in the 16-20, one in the 21-25, one in the 26-30, two in the 31-35, and three in the 35 and above category (Table 4.1).

Four out of the ten participants (40%), claimed to have prior dental experience, either working as an assistant or in an administrative capacity within a dental setting. All participants with prior dental experience found those experiences beneficial to them while enrolled and after the dental hygiene program. Results were split in regards to those participants (3, 8, & 10) that felt disadvantaged by their lack of prior dental experiences, and those who felt that it was advantageous (Participants 4 & 9) to go in "with a clean slate" (Participant 9). Participant 6 felt that her lack of prior dental experience was both beneficial and a disadvantage. She stated "In some ways with instrumentation-I would forget names. But in other ways I think it was better to have a clean slate-I think it made it easier" (Participant 6).

When questioned if they intended to continue their education after completing their associate degree, the majority of 70% stated they would, or are currently enrolled in another program. Participant 7 stated that she may seek a career change after having ethically disappointing experiences in private practice, while Participants 4 & 10 are currently enrolled in

a Bachelor of Science in Dental Hygiene program. The remaining 3 (30%) are content with their

career choice and have no plans to pursue any other degrees at this time (Table 4.1).

Table 4.1. Demographic Information of Interview Participants

Participant	Age	5+ Years in Dental	Prior Dental Experience	Found Prior Experience Beneficial	Lack of Prior Experience a Disadvantage	Cont. Ed.
1	27	Y	Y	Y	N	Y
2	28	N	Y	Y	N	Y
3	33	N	N	n/a	Y	Y
4	24	N	N	n/a	N	Y
5	29	Y	Y	Y	n/a	N
6	25	N	N	n/a	*	N
7	32	Y	Y	Y	n/a	Y
8	33	N	N	n/a	Y	Y
9	32	N	N	n/a	N	N
10	27	N	N	n/a	Y	Y

Notes: Prior dental experience = experience prior to hygiene school,
Asterisk = Participant 6 felt she benefited and was disadvantaged by lacking prior dental
experience.

Analysis of Participants' Dental Hygiene School Experience

After a series of demographic questions were answered, the researcher posed the question

"Tell me about your dental hygiene school experience" to each of the participants. As some

participants had interactions with the researcher during their time in the program, a level of trust

was already established. This prompt was intended to provide insight on their overall experience

in the program. When reflecting on their overall dental hygiene school experience the majority

of participants found it to be difficult but emerged well prepared from it. Responses ranged

from, "Overall very educational, very thorough . . . I was very prepared for the real world"
(Participant 1). To the following:

> I'm glad it's over. It wasn't easy. . . I'd say the most challenging part of it was having to
> find my own patients. You do your best-and then if your patient doesn't show up your
> screwed-even though it's not your fault, like how do you get around that? You can be the
> best clinician but if you don't have a patient you can fail clinic. (Participant 3)

While others provided insight as to what they felt they lacked from the program, Participant 7
stated "I think I was very well prepared when it comes to the clinical part, doing my job, and
doing the right thing-but not in the business side of dentistry" (Participant 7). Many of the
participants acknowledged the stress of such a rigorous curriculum, but continued their
explanation by stating that completing the program is doable when one applied herself.
Participant 10 echoed the feelings of her peers in stating;

> The experience was stressful. It's hard to find patients and enough people who are
> willing to sit in your chair for five hours multiple times. The workload was very heavy-
> It's a lot at once so can be overwhelming. You have to put A LOT (emphasis added) of
> time into it. You'll never see your friends only your hygiene classmates 24/7.
> (Participant 10)

Special circumstances were also revealed by Participant 5 as she stated,

> I failed clinic the first semester, so I wasn't planning on continuing, but then I got talked
> into it, which I'm glad I did because obviously I finished it and passed and love it. The
> clinic part was harder . . . getting all your own patients and meeting all the requirements,
> but I managed. (Participant 5)

> These narratives served as the foundation of this study.

Presentation of Results

This study's findings are presented in accordance with the appropriate research question. Specific interview questions followed each research question. Results of this study were based on the frequency of found themes in the participant's narratives. Pattern coding was also used in developing the categories that would become themes.

After analyzing the individual interview data, similar codes were grouped into categories and themes arose from that coding process. Pattern coding was used to developed categories of the data, along with frequency coding in the terms and phrases used in their narratives. Having multiple perceptions, or "sources of data" (Merriam, 2009, p. 215) from the ten participants provided clarity and meaning to their collective responses. Commonalities expressed amongst participants' narratives were identified and strengthened the validity of their claims. Member checking was another strategy implemented to validate the findings whereby the researcher summarized participant responses to them for their confirmation or denial (Creswell, 2014, Merriam, 2009).

Below, Table 4.2 depicts the themes and sub-themes and how they relate to the literature review topics. The themes were identified in the following order due to the frequency that they appeared in the transcripts.

Table 4.2. Summary of Emergent Themes

Theme	Emergent Theme	Link to Literature Review Theme	Aligns with Research Questions	Participant
1	**Increased confidence since graduation**	Applied Learning, PBL, Bandura's Four Sources of SE	1-4	1-10
1a	Increase in experience = increase in confidence	Applied Learning, PBL, Bandura, Dreyfus	1-4	1-3, 5, 7-9
1b	Applied Learning Promotes Preparedness	Applied Learning, Dreyfus Model, Bandura	1-4	
2	**Foundational knowledge from program**	Applied Learning, Bandura	1-4	1, 5-7, 9, 10
2a	Experience with feeling prepared to enter private practice upon graduating	Applied Learning	1-4	1,3,4,6,8,10
2b	Instructor feedback increases preparedness/confidence	Applied learning, Mentorship		
3	**Critical Thinking**	Best practices to promote confidence	4	
3a	Increase experiences = increase confidence	Applied learning, Peer modeling, Bandura	1-4	
3b	Patient tailored approach	Applied learning, Peer-modeling, Bandura	1-4	
4	**Confidence**	Applied learning, Peer-Modeling, Bandura	1-4	
4a	With instrumentation	Applied Learning, PBL, Peer-Modeling, Bandura	1-4	
4b	With radiographs	Best practices to promote confidence, Bandura		1, 2, 4-10
4c	Successful on Clinical Board Exam	Best practices to promote		1-5, 7-10

		confidence, Bandura		
4d	Successful on Written Board Exam	Applied learning, Bandura		
5	**Adapting to Private Practice**	Dreyfus, Bandura	1-4	1-4, 6-8, 10
5a	Wish they experienced in school			

The coding process was beneficial in identifying similarities and variation in preparation experiences and subsequent professional experiences. For example, all participants acknowledged an increase in confidence since graduating from the associate degree level program. The majority also found that working as a novice clinician exposed them to a variety of patients, directly crediting that exposure to a higher confidence level in their clinical skills, as well as their critical thinking skills (Participants 1-3, 5, 7-9). Many of the participants stated that they felt "prepared to enter private practice" (Participants 1, 5, 6, 7, 9, 10). Several claimed to have received their "foundational knowledge from the program" (Participants 1, 3, 4, 6, 8, 10).

Thematic Patterns Derived from the Interviews

After analyzing the interview data, the following themes and sub-themes were found:

1. Increased Confidence Since Graduation

    a. Increased experiences equals an increase in confidence in clinical skills

    b. Applied learning promotes preparedness

2. Foundational Knowledge from the program

    a. Experience with feeling prepared to enter private practice upon graduating

    b. Instructor feedback increased clinical preparedness

3. Critical Thinking

    a. Increase in patient variety equals an increase confidence in clinical skills

   b. Patient tailored approach

4. Confidence

   a. With instrumentation

   b. Radiographs

   c. Successful on clinical Board Exam

   d. Successful on written Board Exam

5. Adapting to Private Practice: Adjustments & Compromises

Thematic topic 1: Increased confidence since graduation

   All participants claimed to be more confident at the time of their interview, versus at graduation. Learning from their patients and applying knowledge acquired from their dental hygiene program are the major contributing factors to this boost in confidence. The following quotes emphasized their growth as clinicians:

- I'm definitely confident. I do mostly SRP's. Sometimes I don't even have to take x-rays after I do a scaling--I'll use my 11/12 explorer. I feel pretty confident in my clinical skills (Participant 1).

- I'm much more confident since graduation. I first started off being scared to scale a tooth to now being able to scale the most tenacious piece of calculus (Participant 4).

- Now that I've been doing it for over a year, I have gotten a lot more confident, especially because I have the same patients, I'm developing a relationship with them (Participant 5).

- I'm definitely more confident in my skills now. I'm comfortable being alone with the patient, I'm quicker, I'm more confident when answering my patients' questions versus the first couple of weeks it was weird and I had to get used to it (Participant 6).

- I was very shy in clinic at school-not very talkative, I just did what I had to do. Now it's different because I have to have that communication with the patient. I have to be more lively. I had to gain more experience with speaking to patients. So I did some courses on communicating like what [topics] to avoid (Participant 10).

Sub-theme 1a: An increase of experiences equals increased confidence. When participants reflected on feeling more confident since graduation, the consensus was related to an increase in professional clinical experiences. Participants acknowledged having to adapt to whatever they were presented with effectively and efficiently. This process of having to quickly recall lessons from dental hygiene school, and apply knowledge gained from previous experiences, positively contributed to their sense of confidence in their clinical, professionalism, and critical thinking skills. The following participant responses support the theme that an increased variety of experiences resulted in an increased sense of confidence:

- We learned Eaglesoft in school and in private practice I now use Dentrix and Practice Works. I'm glad to be proficient in many dental softwares (Participant 4).

- Every day that I go to work I get better. As opposed to working on one patient for four hours, you're working on ten a day, and each patient is different. And I think coming across different people I learned better techniques. . . and also co-workers' input has helped me to get better. . . I have a lot of patients who need scaling and root planings which I didn't come across a lot in school. Which obviously helps my skills because they're difficult (Participant 5).

- Just by seeing different types of patients. I work in a practice where it's not just a certain age group, everybody is so different (Participant 6).

- On one of our clinical rotations I got to assist in orthodontics which really boosted my confidence especially now that I am working as an ortho-assistant (Participant 8).

- Now I feel like I can just look at someone's gums and know if the need an SRP or prophy (Participant 9).

- In private practice you're not just seeing your friends. You see things that you would never see or treat in school. Now the dentist is in your practice so you have to work with it. With seeing all these different cases I did get faster. In school everything is super slow because you are trying to do everything right and not get points taken off. There's also the confidence because you now do this all day everyday--so more confidence and faster (Participant 10).

    Sub-theme 1b: Applied Learning Promotes Confidence. When reflecting on how they learned their newly acquired skills many participants acknowledged their hands-on sessions to be the most beneficial in gaining their clinical, professional, and critical thinking skills (Participants 2, 3, 5, 8-10).

- In reference to learning clinical skills: "Through repetition in clinic and in radiology lab" (Participant 2).

- I would say I learned my clinical skills more hands-on over in lecture. In clinic is where we really applied our communication skills (Participant 3).

- Combination of instructor feedback and working on Dexter and our partners is really how I learned my clinical skills (Participant 5).

Thematic topic 2: Obtained foundational knowledge in program

Many participants (6 of 10) discussed exiting the program having foundational knowledge to apply to real-life scenarios (Participants 1, 3, 4, 6, 8, 10). That baseline knowledge

combined with new experiences as a novice hygienist led to an increased sense of confidence overall. The following responses emphasized each participant's sense of having gained foundational knowledge:

- You can only learn so much in school, but when you're in practical life that's when you learn other things. But that's to be expected, and you learn it as you go along (Participant 3).

- Like with the intra- and extraoral exam for example, I know if I need to look a little closer at something, I got that from my time in clinic in the program (Participant 8).

Sub-theme 2a: Experience with feeling prepared to enter private practice upon graduating. Overall, participants were content with the knowledge and experience they gained from this two-year program. Many acknowledge that the intensity of learning so much in so little time was stressful and overwhelming at times. The following are participant excerpts that support this sub-theme:

- I definitely was over-prepared for the real world. I thought it was going to be a lot harder to transition from schools to like real adult life working as a hygienist, but I was actually so over prepared where I just felt overly ready (Participant 1).

- I think the program really did a good job in preparing us for the real work as far as professionalism goes. I notice a lot more in offices like things that would not fly in school. I'm definitely more on top of things than others. . . At first I wasn't too prepared, but I think once I started in office I actually realized how prepared we were from school. I think our program definitely went way more in depth than other programs. When we were in lectures I would wish for more clinical practice, then you realize how much it all ties in together (Participant 6).

- Definitely prepared to enter into the professional world and start working immediately. I think I was well prepared in the clinical aspects, but not in the business side of dentistry and how unethical it can be. I felt very well prepared in patient education and telling them about their health (Participant 7).

- I was most prepared for cleaning teeth, my instrumentation skills. The first few days you're fumbling, it's so scary. Like all of a sudden you forget how to talk to people. . . I think the clinical rotations helped me a lot in practice. Even when I talk to other doctors or hygienists that went to a different program they didn't have those experiences, and their impressed that I did (Participant 8).

- I was definitely prepared when I graduated. The office I worked at had only experienced hygienists for years--I was the first one fresh out of school, but they treated me like someone who has been doing this for years--which was a confidence booster. Then patients were starting to request me for their friends and family, so it made me feel good and competent (Participant 10).

Sub-theme 2b: Instructor Feedback Promotes Confidence. Interview questions examined how clinical, professionalism, and critical thinking skills were learned and honed. For many the responses were "through instructor guidance and feedback." Below are direct participant responses depicting the influence instructors had on them while in the program.

- After going through what we went through in clinic, having the instructors guiding us--I was confident going in (Participant 3).

- I felt like my instructors were amazing, and I learned so much in school. It really took me time to apply all the information that I learn in the real world (Participant 4).

- I think the professors did a really good job at working with everybody and making sure we were really prepared for it (the board exams). . . When you're in the program you think the professors are being too hard on you, but they're really doing a great job preparing you for your boards, and beyond that (Participant 5).

Thematic topic 3: Critical Thinking

A growing and consistent topic in education programs, the importance of teaching critical thinking has gained recognition, so much so that CODA includes it in their standards for dental education programs (CODA, 2019). Some examples CODA provides as evidence to demonstrate compliance include:

Explicit discussion of the meaning, importance, and application…Use of questions by instructors that require students to analyze problem etiology, compare and evaluate alternative approaches, provide rationale for plans of action, and predict outcomes (CODA, 2019, p. 14, para 1)

Sub-theme 3a: Increase experiences, increase confidence. Many participants claimed that their experience with feeling prepared or confident came from an increase in their experiences. Direct experiences with their patients, with their co-workers, and just being in the dental setting led to greater confidence. Novice clinician graduates were no longer just treating friends and family, but accessing the general public. With that came varying attitudes towards healthcare providers, and willingness to be in the patient chair. Participants acknowledged this awareness in the following excerpts:

- You can only learn so much in school. . . in practical life that's when you learn other things. . . you learn as you go along (Participant 3).

- You really learn more hands-on at your first job while applying all the information that was taught to you (Participant 4).

Sub-theme 3b: Patient Tailored Approach. When prompted about their critical thinking skills attainment, many participants stated that these skills are honed when developing a patient-tailored approach. They assess their patient's individual needs and develop an action plan to help meet those needs whilst being cognizant of time, insurance, and patient motivation.

- I think with experience you gain the speed. I mean you're not dealing with one patient for three weeks right? You're dealing with ten a day. So it's just with experience (Participant 3).

- Having that baseline knowledge from the program helped me with patient assessment now, like right a way I can put the pieces of the puzzle together (Participant 6).

Thematic topic 4: Confidence

The participants recognize confidence in their instrumentation, professionalism, critical thinking, and patient-education skills as novice clinicians amongst other factors. Although an adjustment period was required to adapt to the real world speed of private practice, the majority were confident in being there.

Sub-theme 4a: With Instrumentation. When the question "What did you feel most confident with as a novice clinician?" was posed, the majority of participants responded "To clean teeth." Confidence was noted in their instrumentation skills in them "actually performing the prophy" (Participant 5).

Sub-theme 4b: Radiographs. A major fundamental task of the dental hygienist is the ability to expose, develop, and read dental images. While the majority (9 of 10 of participants) experienced feeling confident using their skills, Participant 3 continues to struggle with exposing

dental radiographs to this day. The following quotes depict participants' experiences with feeling confident with radiographs.

- I don't take radiographs. I struggled with x-rays a lot in school. A lot of students had prior dental experience, they came in already knowing--which I did not. I found it to be very difficult--I just could never get it. . . I still don't take radiographs because all of the offices I work at have assisted hygiene--but it's a fear of mine, like if I temp or join another practice. It freaks me out. . . it makes me feel stupid because it should be a pretty easy task (Participant 3).

- I was most confident with taking radiographs when I first entered private practice. I was already taking them as an assistant, so I was comfortable taking and reading them (Participant 5).

- Radiology--I felt like I had a great grasp on it. I've been told in practice that I take amazing x-rays, which I didn't think at the time I did. But for radiology super-prepared for (Participant 6).

- I was most prepared for taking x-rays. Every FMS I take is perfect (Participant 9).

Sub-theme 4c: In passing the Clinical Board Exam. Nine out of the ten (90%) of participants experienced feeling confident in their ability to be successful on their clinical board exam, including Participants 4 and 7 who stated "I was very confident to sit for the exam" (Participant 4 & 7). Participants 5 and 8 failed their mock board exam, where they both cited that experience with failure diminished their confidence to be successful on their clinical board exam. While some shared other concerns regarding the exam including; anxiety over if their patient met all of the requirements to sit for the exam, and anxiety associated with test taking. Furthermore, Participant 9 was the sole participant to lack confidence in her clinical skills.

Sub-theme 4d: In passing the Written Board Exam. One of the interview questions asked the participant if they felt confident that they would be successful on their written board examination. The results of this question aligned with that of the clinical board question, where Participant 6 lacked confidence due to the amount of information she was responsible for knowing. Although other participants acknowledged test-taker's anxiety, the majority felt well prepared to be successful for this exam. The following are participant statements that acknowledge their experience with feeling prepared.

- I was over-educated (Participant 1).

- I had butterflies especially because I finished last, but I was very confident to sit for this exam (Participant 4).

- I wasn't confident I don't think anyone was. . . There was so much information--and some things we didn't have answers to, like the review book said one thing but we learned something else (Participant 6).

- I was very confident (Participant 7).

Thematic topic 5: Adapting to Private Practice: Adjustments & Compromises

Adapting to private practice was a struggle for some participants. While some claimed the allotted appointment time per patient was to blame, others deviated from what they learned in school to be more efficient, and the majority stated that they just need to "get the job done," or "do the best they can." The following are participant quotes on how they adapted what they learned during their time in the program to private practice as novice clinicians:

- I probably use more finger motion than my wrist. When I'm doing SRP's I scale with my wrist, and I'm fulcruming-but a light prophy-It's just quick and easy, and get the job

done…I thought it was going to be a lot harder to transition from school to real life-but I was so over-prepared (Participant 1).

- I didn't have a collimator (in private practice) which made it so hard (in school) to take images without cone-cutting (Participant 2).

- It's definitely a lot different outside of school. It's not as serious as they made it seem. It's simple you stay on task, you do what you have to do and it's great (Participant 3).

- Time management was my weakest. It was always a battle with the clock. . . I wish I had like a 'real-life' work day while still in the program (Participant 4).

- Initially I was definitely nervous, I wasn't confident especially with patient education, and because I'm younger. I was afraid patients wouldn't take me seriously (Participant 5).

- I've been slacking a lot on ergonomics. They taught us the right way, but because we worked so slow-it didn't prepare me for working efficiently and fast, but also keeping the proper positioning. I'm used to working slow and making sure I'm sitting right, but in office I'm working fast I lose track of that, and I'm sitting incorrectly (Participant 6).

- Sometimes ergonomics is out the window. Or if your office doesn't have certain instruments you just do the best you can (Participant 7).

- Because we have to work much faster a lot of things go out the window like patient operator positioning, and even note taking. Like the assistant writes it and then either myself or the dentist will sign off on it. We spent hours on it in school and in practice it's like 'Are you allergic to anything? Did you have surgery'. . . I remember feeling super intimidated because here I am I just graduated I should know things, and the dental assistant knew ten times more than I did (Participant 8).

- I stand all day now. . . I think that should have been an option in school. I hurt my back really bad from sitting. I've been standing for almost a year now and it's so much better. . . In school we were giving everyone a scaling, in my office we accept everything Medicare, Medicaid, it's a very fast paced office. Not everyone is getting that deep thorough type cleaning (Participant 9).

Sub-theme 5a: Wish they experienced in school. Some participants claimed to have encountered very production-based practices that would demand specific tasks or knowledge related to dental hygiene that they felt were lacking as a novice clinician. The following are quotes from participants who wished they would have gotten more out of the program:

- One thing that I would say (School's Name) flaw is they don't go over whitening. Like every office is production-driven. It's sad they want you to do things like sealants and whitening and all this stuff. But I feel like it should be recommended to do one bleaching. Like even just barrier wrapping the gums is an art itself. It took me 45 minutes the first time I had to barrier wrap the gums. I felt so unprepared--I'm sitting there reading the directions and youtubing-like I should not have felt like that. Or like just practice on your partner once-and set it up-there's so many steps to it. . . [I struggled with] understanding insurances, like to know when a full mouth debridement goes before scalings. I feel like as hygienists we should be more educated in the insurance field of coding. If I didn't [have prior front desk experience] that would have been a major downfall (Participant 1).

- I actually felt that I was really bad at detecting decay. I know it's not totally our field-but with so many offices being production based-I definitely felt lacking in that area. . . I

wish they taught us more about dentistry aside from just doing a prophy. . . like different procedures, like when they need a crown or a root canal like step by step (Participant 2).

- I felt the least prepared for treatment planning. Like you have to consider everything, time, insurance, patients are not cookie cutter. I second guess myself a lot and was nervous to tell the dentist what I thought they needed in case I was wrong (Participant 5).

- Sometime in clinic we got mixed advice on certain things from instructors. So it was confusing at times with instructor inconsistencies. . . . Going from four hours, to like forty-five minutes for a patient was a huge shock for me. . . I wish the last semester that they would give us like three patients per clinic session, focus on real world (Participant 6).

- I feel like in school they really didn't show us how to maneuver ourselves around all these unethical practices that are out there which is basically a lot (Participant 7).

- I wish we would have seen different software, none of my offices use Eaglesoft. . . Local anesthesia is something I fear to this day because I haven't done it since school, and I feel like we didn't do it enough. And now I feel like I can't. When I work in general I'm just praying to God that no one comes in that needs it (Participant 8).

- I wish some instructors would have been a little bit more supportive. I feel like they were more trying to find ways to fail us and it shouldn't have felt like that. Very anxiety inducing going in everyday knowing that they were going to look for something that I messed up on. There was some inconsistencies among the instructors that added to that stress, like knowing what each one expected. . . I felt the least prepared for the billing stuff. One office expected me to write the codes, and being involved with insurances and billing and I was clueless (Participant 9).

- One technique that I wish I got more out of school is the air polisher. My patient

  demographic has a lot of beetle nut stain, at first it was very overwhelming. I'm more

  confident in using it now. . . Something else I struggled with was time management, and

  finishing my patients on time (Participant 10).

Conclusion

This chapter reviewed how data were obtained, coded, and analyzed to produce the findings of the study. Found themes included (1) An increase in confidence since graduation due to an increase of a variety of experiences and applied learning, (2) Foundational knowledge gained from the program, experience with feeling prepared as a novice clinician, a positive impact on instructor feedback, (3) Critical thinking as a novice clinician, how more experience impacts confidence and having a patient tailored approach, (4) Confidence as a novice clinician: with instrumentation, radiographs, in being successful for the clinical and written board examination, and finally, (5) Adapting to private practice. Overall the participants shared positive experiences during their time in the program, and as a novice clinician. Many of the participants were forthcoming in acknowledging that it is a rigorous program that requires commitment. Chapter five offers a comprehensive description of the results presented, implications of the study, recommendations for further research, and articulates a conclusion of the significance of this study.

CHAPTER 5

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This researcher documented the lived experiences recent dental hygiene graduates had with feeling prepared as they transitioned from a master student to novice clinician. The researcher's intention is to share the results with dental hygiene educators, administrators, governing bodies, and current students.

The review of the literature revealed that, although this topic had been addressed in other health care professions, no studies were found that were specific to dental hygiene. Over the last decade the profession of dental hygiene has experienced tremendous growth nationwide. With the American Dental Hygienists' Association (ADHA) advocating for the profession, occupational growth includes: the implementation and expansion of the dental therapist role in some U.S. states, and an upgrade in occupational classification on a federal level. The U.S. federal government now classifies dental hygienists as, "Healthcare Diagnosing or Treating Practitioners" (Standard Occupational Classification, 2018, para. 4). This new classification now groups hygienists in the same category as dentists, an upgrade that changed from their 2010 civil service classification of "Health technologists and technicians" (SOC, 2018, para. 4).

The profession, therefore, is growing in many ways: first with the widened scope of practice by state, and now with federal acknowledgment of using skills more broadly. This expansion will help close the access to care gap in that now, dental hygienists will be able to reach populations they were previously prohibited from treating by their occupational classification. This evolution of the role of dental hygienists demands that the highest quality of clinicians enter into the profession. The educational leaders of these programs have a duty to the

profession to acknowledge these changes and implement transformative strategies that would address the needs of our future students.

This qualitative study relied on phone interviews to obtain data that allowed the investigator to collect and analyze data and identify conclusions to the research questions. A total of ten graduates from a Northeastern state college participated in this study. Research results are presented and interpreted in this chapter. The findings' alignment with previous research is discussed. The limitations and recommendations for future research are highlighted in this chapter. This chapter concludes by addressing the significance of this study, and illuminating the importance of its findings.

Interpretation of Findings

The administrators and faculty at this Northeastern state college do hold their students to a high standard and expect a high level of skill attainment. Their rigorous curriculum is in compliance with CODA standards, providing their students with significant experiences during their time enrolled in the program, to best prepare them for their new career. This study helps to bridge the research gap and contributes to the literature with regards to dental hygiene education and improving student experiences.

Research Question 1. What are the recent dental hygiene graduates' experiences with learning and adapting clinical skills utilized in dental hygiene practice?

Finding 1-1. All participants claimed to have favorable experiences in learning and adapting their clinical skills as a novice hygienist. All participants felt that instrumentation, and "like actually doing a thorough prophy" (Participant 2) was what they were most prepared for when entering their first clinical position. Additionally, the positivity of the participants was conveyed through the following themes and sub-themes: (1) Increased confidence since

graduation, (2) Applied learning promotes confidence, (3) Attainment of foundational

knowledge, (4) Prepared to enter private practice, (5) Instructor feedback and guidance promotes

confidence, and (6) Confidence as a novice clinician.

Finding 1-2. Six out of ten (60%) of participants acknowledged the applied learning

experience during their clinic and laboratory sessions as being the most valuable to their

growth. Participant 2 stated; ". . . repetition in clinical and in radiology . . . more hands-on less

of the lecture," with Participant 3 in agreement stating, "Definitely more hands-on over the

lectures." Three of the participants stated that they did modify their practice of clinical skills

once they transitioned to novice hygienist. Some of the changes were their patient-operator

positioning and type of cleaning conducted for each patient.

Relationship to the framework: These findings are well aligned with Bandura's sources

of self-efficacy of: performance accomplishment, where they experienced success in their

clinical abilities, vicarious experiences, from either observing instructors or peers practice

clinical skills, verbal persuasion as guidance and feedback from instructors, and emotional

arousal as they are feeling confident in their clinical skills (Bandura, 1996).

Research Question 2. What are newly graduated dental hygienists' experiences with

utilizing critical thinking skills in dental hygiene practice?

Finding 2-1. All participants (n=10) credited their foundational knowledge gained from

the program as being the baseline for their critical thinking skills development. The participants

identified having a patient-centered approach in tailoring their treatment and language towards

patients. Participants 3, 4, and 5 claimed "problem-solving" to be the basis of their critical

thinking skills. While participants 1, 2, and 4 stated, "thinking outside the box," and being

"open-minded." Participant 3 also emphasized value on the use of case-studies in learning critical thinking skills during her time in the program.

Relationship to the framework: Bandura's theories of self-efficacy are evident is these findings: performance accomplishment and vicarious learning were experienced during their time in the program. Similarly, verbal persuasion not only from their instructors, but in their ability to educate their patients is also evident.

Research Question 3. What are newly graduated dental hygienists' experiences with developing professionalism skills in dental hygiene practice? Topics that fall under professionalism skills include but are not limited to: infection control procedures, maintaining patient confidentiality, personal and physical appearance, abiding by HIPAA and OSHA standards, language and communication when engaging with patients and other professionals, and action and reaction to different situations including medical emergencies.

Finding 3-1. Seven out of ten participants (70%) claimed to have learned their professionalism skills in the program through a combination of lectures, and clinic sessions. Although Participant 1 had prior knowledge of professionalism as she worked as an office manager and dental assistant, she stated "I've gotten better, I learned a lot in our preventative course, it's like second nature now" (Participant 1).

Finding 3-2. Four of the participants (40%) recognized instructor guidance and feedback promoted their learning of professionalism skills. During clinic session instructors would observe students and write them up should they deviate from the "very high expectations" (Participant 7), in regards to infection control, patient confidentiality, and communication. Participant 3 stated that she would know if she deviated from the program's expectations of

professionalism through ". . . instructor guidance and feedback", crediting that experience for how she gained confidence in her professionalism skills.

Finding 3-3. Although others had prior experience in healthcare, only two of the ten participants (20%) stated that their prior work experiences provided them with their professionalism knowledge. Participant 8 stated she had prior experience working in a healthcare setting as a nutrition ambassador, and stated "I don't feel like I learned anything different in hygiene school" in regards to her professionalism education in the program.

Relationship to the framework: Again, these findings align to all of Bandura's four sources of self-efficacy. Their experiences in the program allowed them to achieve success in: performance accomplishment, and the vicarious learning experiences and verbal persuasion from instructors in clinic and in lecture courses promoted their confidence in their professionalism skills. Bandura's forth source of emotional arousal was achieved by their experience with feeling confident in their learned professionalism skills.

Research Question 4. What are newly graduated dental hygienists' experiences with growing in confidence as they transition from the role of student to practicing hygienist?

Finding 4-1. All participants (n=10) acknowledge an increase in their confidence level since transitioning to novice hygienist.

Some participants admitted to deviating from their learned techniques form hygiene school as a novice clinician. Participant 9 stated that:

> I stand all day. I think that should have been made an option in school. We didn't really
>
> talk about standing. I hurt my back really bad actually from sitting and I've been
>
> standing for almost a year now and it's so much better.

Varying reasons for their deviation include; clinician comfort, in an effort to stay on schedule several participants acknowledged compromising their patient-operator positioning. Others may have cut-corners in an effort to maintain efficiency.

Finding 4-2. Participants credited their foundational knowledge, coupled with new experiences in private practice, to positively affect their confidence level.

The ability to recall information obtained in the program and apply it to a new patient base in private practice acted as a baseline of knowledge for the participants. Participant 10 stated:

Even in clinic when we would see a clinic patient--not friends and family, those patients I learned more because it was all new to me, I didn't know their history, if they had dental anxiety, you just have to deal with what you get--like trust and apply what you know to that specific patient.

Relationship to the framework: Performance accomplishment was achieved by participants attempting new techniques in their clinical practice, and experience success. Additionally, Bandura's forth source of self-efficacy emotional arousal was achieved by the participants' experiences with growing in confidence since transitioning from student to novice clinician.

Additional findings

The additional findings that did not directly relate to the research questions but may be beneficial in informing future decisions include: Providing a 'real life' working opportunity for students prior to graduating. In reflecting on their experiences as novice clinicians, several participants (2, 3, & 6), felt that they would have benefited from experiencing a 'real work day' referring to a schedule similar to a working hygienist's day, where they would see one patient

per hour. They acknowledge that change in numbers of patients per day as something that would

have helped them adjust from master student to novice clinician.

Secondly, these participants acknowledged their experience with production-based

practices and felt it would have been advantageous for them to have been exposed to more

whitening procedures. Although they were familiar with the impression to customized tray

technique, many of these practices use different technologies such as the ZOOM [tm] product

which requires them to barrier wrap the gingiva. Participant 6 stated "Even if we just practiced it

once on a classmate-that would have been a big help".

Finally, participants stated that they could have been better informed on other office

functions including: dental coding and insurance practices. Participants 2 and 3 encountered

practices that required them to be responsible for coding and submitting claims for their patients,

something that they were unfamiliar with how to do. Others claimed to have struggled with

adapting to different dental software programs as they only had experience with one or two in the

program.

Relationship to the framework: These findings reveal the participants' lack of self-

efficacy in maintaining punctuality in their daily schedule, and their confidence to perform to

their employers' expectations.

A comparison of past and current research

In alignment with the literature review, participants expressed perceptions of their

development that reflect all of Bandura's sources of self-efficacy: performance accomplishment,

vicarious experience, verbal persuasion, and emotional arousal. Respectively, half (50%) of the

participants (2, 3, 8, 9, 10) stated that their applied learning, or hands-on experiences, were the

most beneficial to their clinical preparedness. Furthermore, verbal persuasion was achieved by

instructor guidance and feedback during their time in the program promoting their performance accomplishment during their time in the program.

Lundberg's (2008) study highlights several strategies to promote clinical confidence for nursing students including: simulations and use of simulators, role playing, peer modeling, and journaling. Furthermore, the Lundberg study asserts the importance of early recognition of lack of confidence, as well as the importance of having a skills review session (Lundberg, 2008). The findings in Lundberg's (2008) study were also validated as applied learning was named in this study as promoting a perception of preparedness. The results of this study echo the findings of Lundberg's with regard to clinical preparedness, and what graduates claim contributes to their experience with feeling prepared.

Recognizing a lack of confidence in master dental hygiene students is a key finding that should be recognized by instructors throughout students' enrollment in a hygiene program. Cantrell's (2012) study found that the majority of her participants felt prepared in their technical skills to enter the workforce, and that experiences contributed to their confidence level in their skills (Cantrell 2012). Other similar findings included: experience with feeling prepared in instrumentation skills, and an increase in a variety of patient types and experiences positively affected confidence levels in clinical skills. Variation was also evident as the majority of participants in the Cantrell study had negative experiences during their educational program. Versus this study, where although participants claimed it to be "stressful but doable" (Participants 2 & 10), all had positive experiences during their time in the hygiene program.

Limitations

This research study was limited to 2016-2018 dental hygiene graduates at the specified Northeastern state college. The experiences of other dental hygiene graduates may vary in other

parts of the country, or for those in an accelerated program. There may also be a difference in the experiences of private universities versus public programs. Furthermore, two of the participants were currently enrolled in the site's Bachelor degree completion program. This may have hindered the honesty of their responses as they are still working very closely with the site, but not directly with the researcher. During the interview process, respondents would have benefited from the term 'clinical skills' being defined, as to eliminate any confusion as to what skill exactly fell under that umbrella. Furthermore, this study was also limited in the selection recruitment process of participants. Only those graduates who not only have Facebook [TM] and their messenger application, but also are members and follow the Farmingdale Dental Hygiene Page, were recruited.

Validity and Credibility

Prior to the individual interviews, the interview questions were reviewed by a panel of experts consisting of educators who hold a doctoral degree in the fields of education, nursing, dental hygiene, and biology. Modifications were made to the interview questions based on the panels feedback. The researcher implemented member checking by summarizing the participants' statements for them to confirm their accuracy. Furthermore, participants were offered the opportunity to review transcribed interviews for accuracy where alterations to their responses could be made upon request. All participants declined the opportunity to review the transcribed interviews.

The emergence of themes and sub-themes were a result of implementing triangulation, whereby the narratives are interpreted from "multiple perceptions" (Bloomberg & Volpe, 2012, p. 107). Transcripts were reviewed for repetition of words, thoughts, and similarities of the participants' perceptions. This procedure helped to reveal the essence of the phenomena of

becoming a novice clinician. Acquired data were deemed "credible" (Bloomberg & Volpe, 2012, p. 112), as the participants concurred with the researcher's summation of their experiences, and responses to the interview questions. Lastly, although the data cannot be considered generalizable amongst all recent dental hygiene graduates, they do exhibit transferability for similar programs at other institutions (Bloomberg & Volpe, 2012, p. 113).

Implications

There are three main implications from this study that align with the themes. The first is that applied learning is effective, and the dental hygiene faculty should maximize the opportunities to implement applied learning strategies to the curriculum. Many participants credit applied learning to developing and mastering their newly acquired skills. They need to experience success in assessing and treating patients within a specific allotted time prior to entering the work force, where they quickly run behind schedule in those first positions. Addressing the above-mentioned pace of practice can have a great impact on future graduates' confidence level up entering the profession.

Another noteworthy implication was the impact self-reflection played on personal growth for the participants. Participants acknowledged being able to apply, and improve upon, their critical thinking skills as they were exposed to treating a variety of patients. Clinical practice needs to include more opportunities for students to treat a variety of "real patients," not just friends and family members. These might be more veterans, children, or patients with special needs. Increasing the variety results in an expansion of experiences and therefore increased confidence as graduates are forced to think critically to be successful in treating those new and different patients. Critical thinking skills are imperative in all aspects of life and should be

encouraged and facilitated whenever at all possible, chairside in clinic, as well as in didactic courses.

The third topic is about the fit of the curriculum to this generation. Participants ranged from 24-33 years old, indicating they all are considered millennials. There has been inconsistent research whether this generation learns differently than those prior (Turner, Prohoda, English, Chismark, & Jacks, 2016). Some studies argue that millennials prefer technology to receive information in a school setting, and expect immediate feedback (Johnson, & Romanello, 2005), while others argued that the millennial generation may not be so different in the way they learn compared to other generations (Behar-Horenstein & Horvath, 2016; Dilullo, McGee, Kriebel, 2011). Alterations in teaching methodologies or strategies that specifically cater to teaching this generation may be unnecessary.

Recommendations for Action

Clinical instructors are on the front line in terms of student assessment of competence to perform tasks. As noted in Lundberg (2008), clinical instructors in nursing--much like dental hygiene--have to "discern between students who are lacking clinical confidence, versus students lacking in clinical knowledge" (p. 87). Clark et al. (2004) suggest faculty implement an assessment tool whereby students would self-assess their confidence levels towards specific clinical tasks. This tool promotes a dialogue between student and instructor, as well as documentation of growth and areas of concern. Implementing an appropriate assessment tool in clinic would help to identify areas of weakness.

Participant narratives revealed instructor guidance as being one of the most beneficial aspects of supporting their confidence, the first recommendation would be to maintain various in-services, and workshops for the entire adjunct and full-time faculty focusing on a variety of

practices that affect student success and confidence. Possible topics can include: instructor calibration seminars to ensure continuity amongst instructors, instrumentation skills and refresher courses, conflict management solutions, and staying abreast of teaching methodologies and strategies for the clinical student. Employee development would continue to be strongly encouraged and supported even outside of the college, with feedback and reflections of those experiences shared with all faculty.

As the majority of clinical instructors are adjunct faculty, another recommendation is to increase the dialogue between them and the full-time faculty. Having the adjunct faculty be more involved in the program outside of their clinical working hours would not only lighten the load of the full-time faculty, but also place more accountability on them as educators. Having them participate more in didactic-based courses as guest lecturers, or be assigned students to mentor and monitor throughout their time in the program, would promote their engagement and interaction amongst the entire faculty. It is the researcher's opinion that such collaboration would help to bridge the calibration gap as well.

With the ever-changing landscape of dentistry: new products, treatments, and oral health aides, it can be challenging to stay abreast of all the changes. The clinical instructors are on the forefront of skill acquisition, and should be given and seek opportunities to ensure adequate skill attainment by students. Greater engagement would ensure these instructors are competent and confident in their own skills and can use that knowledge to provide students with a high-quality learning experiences.

In support of the participants' desire for increased real world experience, the exposure to a new environment, personnel, and expected skill level found on these out-clinics will contribute to their sense of preparedness as they transition to novice clinician. Furthermore, students should

be assigned a reflective essay that addresses their experiences at these out-clinics to maintain quality assurance, and accountability.

The educational leaders of these programs have a duty to the profession to acknowledge these results and implement transformative strategies that would address the needs of future students. Should they wish to maintain the caliber of their novice clinicians and reputation, incorporating the real-life demands of a dental hygienist into their curriculum would make the future graduates more desirable candidates. There are also several statements made about where improvements can be made that can have a positive impact to not only future students and the program as a whole, but to the profession and the communities these graduates will serve.

Recommendations for Further Study

The incorporation of Bandura's self-efficacy theory has contributed to the findings of this study, which can be included in the dental hygiene literature. Additionally, the application of other models and frameworks to this study can deepen its significance. Possibilities include the Dreyfus Model of Skill Acquisition (1980), and the Conscious Competence Theory of Learning a New Skill (McLeod, Meagher, Steinert, Schwirth, & McLeod, 2004).

Bandura's fourth source of self-efficacy is emotional arousal. Future research can explore this concept related to dental education in regards to: the effects mentorship has on student development, how self-reflection affects learning, and if journaling is beneficial to student growth and development. The aforementioned was a part of a compiled list of best practices in clinical education (Lundberg, 2008). Furthermore, the level of emotional intelligence in students has been minimally explored research topic. Future research can also include quantitative, or a mixed-method approaches, in detailing novice hygienists' perceptions of how they learned the many different tasks, and procedures of their profession.

Annually, new graduates complete an exit survey that assesses their perception of skill level gained from their time in the program among other factors related to their learning. The researcher did not have access to this archival data, perhaps future research can include the results of the exit surveys coupled with individual interviews, or focus group for a mixed method approach in gaining more insight on the dental hygiene school experience.

The topic of differentiation in teaching dental hygiene students can be a potential research study. Much research has addressed the types of learners: visual, auditory, kinesthetic, or reading and writing (Willingham, Hughes, & Dobolyi, (2015), but one that would examine the differentiation in teaching strategies to accommodate these learners within a dental parameter could be a topic of interest to dental educators. Furthermore, several participants refer to their experiences with production-based, corporate-owned dental practices, and how they related their educational experience as insufficient in preparing them for the business aspect of clinical dental hygiene.

Conclusion

This study examined the perceptions of preparedness recent dental hygiene graduates experienced as they transitioned from master student, to novice clinician. Overall positive experiences were shared, especially with regard to their instrumentation skills. The participants also revealed a number of components that promoted their learning, and skill acquisition, including: their applied learning experiences, and direct interaction with their instructors.

This research topic and its findings align with Bandura's self-efficacy model with regard to student learning and confidence and can easily be applied to dental hygiene curriculum. Students' sense of self-efficacy is reliant on their experience during the hygiene program. Those

direct and vicarious learning experiences, along with the encouragement and support of their

instructors and peers is what has been documented to increase graduates' sense of self-efficacy.

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APPENDIX A:

RECRUITMENT LETTER TO POTENTIAL PARTICIPANTS

April 10, 2019

Dear Recent Dental Hygiene Graduates,

I am a doctoral candidate at University of New England. I am interested in the experiences of students who have graduated the associate level dental hygiene program at Farmingdale State College within the years of 2016-2018. There is little information about how this population perceives their preparation to enter into their new clinical role as a dental hygienist. This 30-60 minute interview will provide you the opportunity to share the experiences you have had in program as well as your transition from student to novice clinician.

Participation involves approximately a 30-60 minute interview. The interview will be kept confidential and will be set up at a time and a place that is convenient for you. The interview will be audio recorded; however, your name will not be recorded. Once the recordings are digitally transcribed the audio recordings will be destroyed. Your name and identifying information will not be associated with any part of the written report of the research. All of your information and interview responses will be kept confidential. The researcher will not be maintaining a link to your personal identity. Data will be stored in a locked cabinet in the researcher's home for 7 years. You may notify the researcher at any time that you would like to stop the interview and your participation in the study. There is no penalty for discontinuing participation.

While there are no direct benefits to the participants of this study, the results of this study may assist dental hygiene programs in supporting future students in becoming a more confident clinician. There are no risks associated with participating in the study beyond what one would experience in everyday life. Findings from this study will be shared with the participants.

 I hope you will consider joining me in helping to learn more about the needs of dental hygiene students.

Sincerely,

Daniela M. Taranto, RDH, HSM
(917) 709-7577
dtaranto@une.edu

APPENDIX B:

INFORMED CONSENT FOR INTERVIEW

Project Title: Clinical Preparedness Amongst Recent Dental Hygiene Graduates: A phenomenological study

Researcher:
Daniela Taranto RDH, MS
Principal Investigator, Farmingdale State College
Doctoral Candidate University of New England
DTaranto@une.edu

Faculty Advisor:
Carey Clark Ph D., RN, AHN-BC
Adjunct Faculty
College of Graduate and Professional Studies
Doctor of Education in Educational Leadership
University of New England
CClark14@une.edu

Please read this form. You may request that this form is read to you. The purpose of this form is to provide you with information about this research study, and if you choose to participate, document that choice. You are encouraged to ask questions about this study that you may have, now, during, or after the project is complete. You can take as much time as you need to decide whether or not you want to participate. Your participation is voluntary.

Purpose of the study:
You are invited to participate in a research study that assesses the lived experiences of recent dental hygiene graduates in regards to their clinical. It is expected that data obtained through this research can be used to benefit dental hygiene academia by offering useful information that can be used for improving dental hygiene curricula.

Who will be in the study:
Approximately four to ten dental hygiene students who graduated between 2016-2018, will participate in this study.

What will be asked of me?
If you decide to participate in this research, you will be asked to participate in an interview where you will be asked about your thoughts, opinions, and experiences while a student in the dental hygiene program. Your participation should take approximately 30 – 60 minutes.

What are the possible risks or benefits?

There are no physical, emotional, or social risks associated with this research beyond what one would experience in their everyday life. While there are no direct benefits to the participants in this study, results from the study may help future dental hygiene students.

What will it cost me?
This research study will not cost you anything.

How will my privacy be protected?
The data collected will be anonymous where no personal identifying information will be audio recorded, or documented in the transcribed interviews. Pseudonyms will be used to decipher between interviews. The individuals who will have access to the data include: Daniela Taranto, the principal researcher. In addition, the principal's dissertation committee, as well as the University of New England IRB may review the data.

How will my data be kept confidential?
The information in this study will be used only for research purposes and in ways that will not reveal who you are. The confidentiality of data will be maintained by using a pseudonym when collecting and reporting the data. All data will be stored in a locked cabinet in the researcher's home for 7 years. A transcription application will be used to transcribe the interview, once audio recordings are transcribed they will be destroyed.

What are my rights as a research participant?
- Your participation is voluntary. Your decision to participate will have no impact on your current or future relations with the University.
- Your decision to participate will not affect your relationship with Daniela Taranto.
- You may skip or refuse to answer any question for any reason.
- If you choose not to participate there is no penalty to you and you will not lose any benefits that you are otherwise entitled to receive.
- You are free to withdraw from this research study at any time, for any reason.
  - If you choose to withdraw from the research there will be no penalty to you and you will not lose any benefits that you are otherwise entitled to receive.
- You will be informed of any significant findings developed during the course of the research that may affect your willingness to participate in the research.
- If you sustain an injury while participating in this study, your participation may be ended.

What other options do I have?
- You may choose not to participate.

Whom may I contact with questions?
- The researcher conducting this study is: Daniela Taranto

  - For more information regarding this study, please contact: Daniela Taranto (917) 709-7577.

- If you choose to participate in this research study and believe you may have suffered a research related injury, please contact: Daniela Taranto (917) 709-7577 or Dr. Carey Clark (707) 239-6738.

- If you have any questions or concerns about your rights as a research subject, you may call Mary Bachman DeSilva, Sc.D., \Chair of the UNE Institutional Review Board at (207) 221-4567 or irb@une.edu.

Will I receive a copy of this consent form?
- You will be given a copy of this consent form.

PARTICIPANT'S STATEMENT
I understand the above description of this research and the risks and benefits associated with my

participation as a research subject. I agree to take part in the research and do so voluntarily.
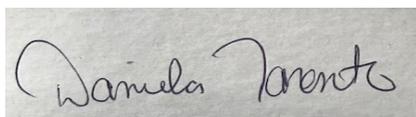

_____

Participant's signature or   Date

Legally authorized representative

_____

Printed name

<u>RESEARCHER'S STATEMENT</u>
The participant named above had sufficient time to consider the information, had an opportunity to ask questions, and voluntarily agreed to be in this study.

9/10/19

Researcher's signature   Date

Daniela M. Taranto
_____
Printed name

APPENDIX C:

DEMOGRAPHIC QUESTIONS.

1. What is your age?
2. How many years have you been in the dental field?
3. What year did you graduate from the associate level program?
4. How many hours per week do you practice as a clinical dental hygienist?
5. What type of practice do you work for?
6. Have you earned any other degrees since you've graduated?
    a. Do you plan to?

INTERVIEW QUESTIONS.

An informal, interactive process, utilizing open-ended questions was used to maintain a

dialogue (Moustakas, 1994). Guiding interview questions included the following:

1. Tell me about your dental hygiene school experience.

Clinical Skills

2. Describe how you learned clinical skills, such as instrumentation and taking

    radiographic images, while in dental hygiene school.

3. How has your practice of dental hygiene technical skills changed since

    graduation?

4. If you did change any techniques, describe how your technical skills have

    changed and identify what caused you to change your approach in practicing these

    dental hygiene procedures. Can you provide an example of this change in

    practice?

Professionalism Skills

5. Describe how you learned your professionalism skills, such as maintaining patient

    confidentiality, adhering to all infection control procedures, continuing education

efforts, and how to communicate with patients, peers, and dentists while in dental hygiene school.

6. Can you provide an example of how your professionalism skills have evolved over the first years of practice?

7. Did your professional style change over time? Can you provide an example of how your professional skills have changed over time?

   Critical Thinking Skills

8. What do you think of when you think of critical thinking skills development?

9. Describe how you learned critical thinking skills.

10. Can you provide an example of how you used your critical thinking skills in your new role as a hygienist?

11. What has helped you to hone your critical thinking skills in the practice setting?

   General Preparedness/Confidence Questions

12. Thinking back to your first position as a dental hygienist, what did you feel the most prepared for in terms of clinical skills?

13. What did you feel the least prepared for?

14. Were you confident that you would be successful on the written National Board Dental Hygiene Exam (NBDHE)?

15. Were you confident that you would you would be successful on the clinical NERB exam?

16. Did you have dental experience prior to entering this program? If so how much?

    a.   Do you feel that experience helped you in this program?

    b. Can you provide an example of how your previous experience impacted your confidence in the clinical setting?

    c. Can you please provide an example with how your confidence in your clinical skills evolved as you entered into practice?

17. Is there anything else you would like to mention related to your sense of preparedness upon graduating from this program?

Bonus Question: Are you happy you chose dental hygiene as a career path? Why or Why not?

Follow-up questions will be asked during the interview if needed to clarify, elaborate information, or to provide an example to aid in the facilitation of a rich dialogue.

Thank participants for their time.

APPENDIX D:

PERMISSION TO USE INTERVIEW QUESTIONS:

CORRESPONDENCE WITH DR. CANTRELL

From: "Cantrell, Lezlie" <Cantrell-L@mssu.edu>

Subject: Re: Same dissertation topic

Date: December 16, 2018 at 6:54:33 AM EST

To: Daniela Taranto <dtaranto@une.edu>

Resent-From: <dtaranto@une.edu>

Thank you for contacting me Daniela.

Yes, you have my permission and support.

FYI: Because my study was limited to one school, it has repeatedly been viewed as "school-specific". But I have continued my research in a university setting, and I have found that the students' perceptions of their school experiences are influenced by emotional maturity and affective behaviors.

Oh, to have time to write!

You inspire me! Wishing you all the best in your future endeavors. It is so worth it!

Lezlie M. Cantrell, RDH, PhD

Associate Professor, Dental Hygiene

Missouri Southern State University

3950 East Newman Road

Joplin, MO 64801-1595

(417) 625-9600

cantrell-l@mssu.edu

From: Daniela Taranto <dtaranto@une.edu>

Sent: Saturday, December 15, 2018 1:31:08 PM

To: Cantrell, Lezlie

Subject: Same dissertation topic

Hi Dr. Cantrell,

My name is Daniela Taranto. I am a doctoral student at The University of New England, also an

Adjunct Clinical Instructor in New York, and a dental hygienist for over ten years now.

I am writing you today because we have the same dissertation topic. I wanted to inform you

that I will definitely be citing your work in my literature review. I too will be conducting a

phenomenological study, with Bandura's self-efficacy theory as the framework.

At this point I am working on editing my proposal, and toying with some interview questions. I am not quite there as far as committing to the questions and follow ups, but would you permit me to use yours, even if it was just to influence mine?

Looking forward to hearing from you, and get your thoughts on this process.

Thank you for your time,

Daniela

This e-mail may contain information that is privileged and confidential. If you suspect that you were not the intended recipient, please delete it and notify the sender as soon as possible.

Confidentiality Notice:

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