

Critical Issues in Dental Hygiene Education

Career Paths and Satisfaction of Dental Hygienists Holding Master's and Doctoral Degrees

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Abstract

Purpose: There is an increased need for dental hygienists with advanced degrees to meet the demands of a complex health care system in addition to advancing the dental hygiene profession. The purpose of this study was to explore the career paths and satisfaction of dental hygienists with master's and doctoral degrees.

Methods: A qualitative descriptive phenomenological research design was used with a purposive sample of dental hygienists (n=20) who had master's and doctoral degrees. A virtual web-based videoconferencing platform was used to conduct focus groups and utilize a national sample. Focus groups were audio recorded and transcribed. Data was analyzed for themes manually and with qualitative analysis software.

Results: The results showed a wide range of career paths such as: administrator, lawyer, entrepreneur, dental therapist, dentist, nurse, educator, researcher, public speaker, consultant, editor, state oral health program coordinator, and marketing. The results also indicated that participants were satisfied and valued the pursuit of their advanced education. The six themes that emerged included: expanded opportunities; personal growth; professional growth; credibility; it's an investment; and just do it, don't overanalyze or second guess yourself.

Conclusion: Findings suggest satisfaction with advanced education as well as a wide variety of career paths. Participants also endorsed more dental hygienists being educated at the master's and doctoral level to advance the profession of dental hygiene.

Keywords: career paths, job satisfaction, postgraduate education, dental hygienists, dental hygiene profession

This manuscript supports the NDHRA priority area, **Professional development: Education** (Educational models).

Submitted for publication: 8/20/20; accepted: 2/22/21

Introduction

The number of people entering the dental hygiene profession is growing at a rapid pace.¹ However, the majority of graduates (7,300 annually) are from associate and baccalaureate degree dental hygiene programs and are primarily prepared for entry-level clinical practice.¹ Although the number of dental hygienists for entry level practice is growing, there is also a growing need for dental hygienists who are academically prepared at the postgraduate level.² A shortage of master's and doctorally prepared dental hygienists has contributed to slow advancement of the profession in regard to increasing access to care; professional autonomy (including self-governance and self-regulation); and the breadth and depth of discipline-specific research.²⁻⁹ This deficit has also left the profession with an unmet need for dental hygienists with graduate degrees for career paths in education, dental therapy (or mid-level oral health practitioner/advanced dental hygiene practitioner),

research, the public health sector, management, administration, and entrepreneurship.⁷⁻¹¹ Higher academically prepared dental hygienists are also better positioned to meet the demand for oral health care in an increasingly complex environment.^{2,4,6,10}

One such way to meet the increased demand for oral health care is a mid-level oral health care provider or dental therapist. Although a master's degree is not required by the Commission on Dental Accreditation (CODA) standards for dental therapy education programs, mid-level provider models in some states (e.g. Minnesota and Massachusetts) are based on a dental hygiene foundation with further education at the master's level.¹² This mid-level oral health care provider model along with the existing direct access dental hygienists could help close the gap for access to oral health care in underserved populations.¹⁰ The United States (US) Health Resource and Services Administration (HRSA)

supports education of advanced dental hygienists to increase access to care.¹¹ The existing dental hygiene workforce has the foundational educational infrastructure in place to pursue advanced education and ultimately serve in a variety of roles, including mid-level oral health care providers.^{10,11}

Previous studies have shown that dental hygienists are interested in pursuing advanced education degrees.^{5,10,13-16} However, finances, time management, and fear of engaging in scholarship/research are the top barriers preventing dental hygienists from pursuing graduate or doctoral education.^{13,17} Conversely, the primary motivations for pursuing a graduate degree have been cited as increased career options, benefits, and salary.^{13,15} Currently, there are no doctoral program in dental hygiene in the US. However, dental hygienists are pursuing doctoral degrees in other areas of study such as education, health science, public health, and organizational leadership.¹⁵ Even though dental hygienists are pursuing doctoral education in other disciplines, this could also be detrimental to the development of the profession as the focus of research may not be directly related to oral health or dental hygiene theory development.⁹

Benefits of pursuing advanced degrees are not limited to personal growth; postgraduate study also benefits the growth of the dental hygiene discipline as well as access to oral health care for the public.^{6,8,13,18,19} Nursing is several steps ahead of dental hygiene in terms of advancing their education to the doctoral level, self-regulation, and autonomy.²⁰ Unfortunately, these remain ongoing challenges for the dental hygiene profession. There is limited research on the career paths of dental hygienists who have pursued postgraduate education. The purpose of this study was to explore the career paths and satisfaction of dental hygienists with master's and doctoral degrees.

Methods

A qualitative descriptive phenomenological design was used to explore career paths and satisfaction of dental hygienists who have master's or doctoral degrees. This particular design was chosen to better understand this topic from the lived experience of the participants.²¹⁻²² In addition, this approach provides information about how meaning is experienced.²² A phenomenological design requires the investigator to be aware of their own assumptions, beliefs, and bias to bracket them and be open and sensitive to the experience of the participants.²¹⁻²²

A non-probability purposive sample of (n=20) dental hygienists who held a master's and/or doctoral degree agreed to participate. Focus groups were used for data collection. Focus groups allow for the interaction of a group of participants

with common characteristics or interests to engage around a topic. What emerges from a focus group is discussion of perspectives or experiences of the participants that captures the viewpoints of the majority of the group.²³ Given the focus groups were held virtually, best practices for this approach were followed in planning the procedure.²⁴⁻²⁶

The MCPHS University's Institutional Review Board (IRB) approved the study with the status "exempt" and assigned it protocol number IRB091919B.

Participants

The inclusion criteria were dental hygienists who have graduated from a master's or doctoral degree program and graduated from an accredited entry-level dental hygiene program; dental hygienists with entry-level degrees were excluded from the study. Participants were recruited via dental hygiene forums on social media (Facebook and LinkedIn). Additionally, snowball sampling allowed participants to assist in recruitment of others who met the inclusion criteria.

Instruments

A short demographic survey was developed to gather descriptive information. The demographic survey inquired about age; gender; race; number of dependents while completing the advanced degree; current occupation; type of entry-level dental hygiene degree held and year of graduation; type of advanced degree held and discipline; and number of years in clinical practice prior to deciding to pursue advanced education.

The focus group interview questions were semi-structured and explored the career paths and satisfaction of the study participants. Questions were developed based on similar nursing literature and were pilot tested with a small group (n=3) of dental hygiene graduate students. The questions included:

1. What motivated you to pursue a master's or doctoral degree?
2. Tell me how you feel your advanced education has increased opportunities and how it has impacted you personally and professionally.
3. Tell me about other avenues you would like to pursue or expand upon either related to your current career path or possibly a new direction?
4. Was pursuing a master's or doctoral degree worth it to you and why?
5. How do you feel your advanced degree has helped you contribute to advancing the profession of dental hygiene?

6. What words of wisdom would you offer to a dental hygienist thinking of pursuing a master's or doctoral degree?

Minor word edits to improve clarity were suggested by the pilot testers. In addition to the focus group questions, a pilot session of the entire focus group procedure was conducted prior to recruitment of participants.

Procedure

Following IRB approval, the invitation to participate was posted on the social media sites. Interested parties received an email containing information about the study as well as an informed consent form for review. Focus groups were scheduled for participants based on availability. The focus group sessions took place through an online video conferencing platform (Zoom; San Jose, CA, USA). This platform was chosen because of its ease of use, cost-effectiveness, features, and convenience. In addition, the virtual setting increased access to a national sample of participants and synchronous communication is less complex allowing participants to see and hear each other more easily.^{15,16} Participants logged in from their personal computers or cell phones and followed the link to the focus group session. Participants who preferred to remain anonymous, directions to change the username were provided.

A total of five focus groups were conducted with the number of participants ranging from three to six. Each session began with a review of informed consent and ground rules for the focus group. The principal investigator (PI) led each session by reviewing instructions, following the interview guide with the semi-structured questions with prompts as needed, and encouraging each participant to respond to each question fully. The interview guide ensured each participant was asked the same questions and the PI guided participants back to the question when necessary. Responses were kept to approximately two minutes to allow each participant time to respond. Each focus group session lasted 40-60 minutes.

The focus groups sessions were recorded, and the audio recordings allowed for facilitation of accurate transcription. Upon completion of each focus group session, the audio recording was uploaded for professional transcription. The PI also listened to the audio recordings and confirmed accuracy of all transcripts verbatim. To aid in trustworthiness (validity) of the data, member checking was conducted with two participants from different focus groups who reviewed their transcript for accuracy.

Analysis

Two investigators independently analyzed the data, one coded data manually and one used qualitative data analysis software (MaxQDA; Berlin, DE). The qualitative design and research process was guided by Creswell.²⁷ The data was read to identify tones, meaning units, themes, and ideas. The data showing recurring themes, tones, and ideas were grouped together and labeled. The coding process was used to generate a description of the data, and coding was used for recurring themes found in the data. The narratives and quotations from the participants illustrated the themes and strengthened the findings. The Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist is a 32-item checklist that aids in accurate reporting of a qualitative study and the investigators addressed each item.²⁸ Validity (trustworthiness) included continuing recruitment until data saturation was reached, through member checking, the use of two investigators to independently code data to identify themes, and by using thick, rich descriptions from the participants to illustrate findings.²⁷

Results

The participants (n=20) were all female, predominately White, and from 13 states, representing most regions in the US (Table I). Seventeen participants held master's degrees (n=17) and three held doctoral degrees (n=3). Most participants had graduated from an entry-level program with an associate degree, and most continued on to complete their advanced education within five years from the time of graduation. After completing advanced education, the participants reported pursuing the following career paths: administrator, provost, lawyer, entrepreneur, leadership/executive coach, dental therapist, dentist, nurse, educator, public speaker, consultant, editor-in-chief, state oral health program coordinator, and director of operations for a Dental Support Organization (DSO). Participant career pathways are shown in Table II.

Themes

Six major themes emerged from the data: *expanded opportunities, personal growth, professional growth, credibility, it's an investment, and just do it, don't overanalyze it or second guess yourself*. Regarding the theme of *expanded opportunities*, examples of statements included the following: "It opened doors for me...that I would have never gotten had I not earned my masters;" "I could kind of pick and choose which way I wanted to go;" "as a clinical hygienist it's really hard to wrap your head around just how powerful the degree is and how far it can really take you;" and "every time I went back to school and added more letters after my name, my pay went up!"

Table I. Participant demographics (n=20)

	n	(%)
Age		
25-34	3	(15)
35-44	5	(25)
45-54	2	(10)
55-64	6	(30)
65-74	4	(20)
Race		
Asian/Asian American	1	(5)
Black/African America	1	(5)
Hispanic/Latino	1	(5)
White	17	(85)
Gender		
Female	20	(100)
US Regions		
West (Montana)	1	(5)
Midwest (Michigan, Minnesota, Illinois)	6	(30)
South (District of Columbia, Florida, North Carolina, Oklahoma, Texas, Virginia)	8	(40)
Northeast (Massachusetts, New Jersey)	5	(25)
Dependents while pursuing advanced degree		
None	11	(55)
1	2	(10)
2	5	(25)
3	2	(10)
Entry-Level Degree		
Associate of Science	12	(60)
Bachelor of Science	8	(40)
Year entry-level degree completed		
1971-1980	4	(20)
1981-1990	3	(15)
1991-2000	7	(35)
2001-2010	4	(20)
2011-2020	2	(10)
Number of years in practice prior to advanced degree		
0-5	9	(45)
6-10	3	(15)
11-15	2	(10)
16-20	3	(15)
21-25	2	(10)
26-30	1	(5)

Table II. Career paths and degrees (n=20)

Employment Setting	Degree Type	n	%
Business Owner	MSDH focus on management	1	5
Consultant	M.S. Health Administration	1	5
Corporate	MBA	4	20
Corporate	M.S. Adult Education		
Corporate	MSDH (emphasis on Public Health)		
Corporate	MBA		
Corporate, education, private practice	M.S. Health Services Administration	1	5
Education	MBA	4	20
Education	MSDH		
Education	M.S. Education		
Education administration	MPH, JD (Juris Doctor)		
Education/business owner	MSDH education/ public health dual concentration	1	5
Entrepreneur, educator, private practice	MSDH	1	5
Entrepreneur	PhD Organizational Leadership	1	5
Nurse, Doctoral Nursing Student	M.S. in Nursing, Clinical Nurse Specialist	1	5
Private Practice (dentist)	D.M.D.	3	15
Private Practice (dental therapy)	M.S. Advanced Dental Therapy		
Private Practice (dental hygiene)	MSDH		
Public Health (state oral health director)	MSDH	1	5
Speaker, writer, editor, researcher	MPH	1	5

Many participants remarked they felt pursuing a post graduate degree increased their *professional growth*. The following quotes illustrate this theme: “I feel that getting our degrees is so much bigger than just ourselves. It’s really advancing our profession as a whole;” “If I got my MPH I

could save the world in a different way;" "I wanted to be a dental therapist;" "I'm publishing research that's contributing to the body of knowledge in our profession;" "I had the opportunity to collaborate and revise a chapter in Esther Wilkins' textbook;" "I try to educate dentists [at continuing education presentations] when I'm lecturing to them about the value of their hygienists;" and "I was on the dental therapy board for Minnesota and that gave us a lot of opportunity to give testimonies for dental therapy."

Additionally, many of the participants felt they experienced tremendous *personal growth*. Some quotes that illustrate the personal growth theme included: "It made me look at things differently in terms of community health and the same with the law degree;" "It's been very helpful in my role as an administrator because trust me I have to make decisions;" "I was able to challenge myself. You know if you don't have a challenge you don't grow;" "What I came to understand was that some of the things that I was told like about myself in a negative way were actually my strengths;" and "It's just given me a confidence that when I do speak up, that I have every right to speak up."

Credibility was another common theme among the participants. Those who felt their education gave them credibility made comments such as these: "You definitely get looked at from a different perspective when you do have those terminal degrees;" "It does give me more credibility is what it does;" "The JD [juris doctor] really helped at least put me a little bit on par with a bunch of DDSs' and helped me move up the administrative chain;" "Politically I've been able to testify for dental therapy;" "The respect you get from yourself and other people, it's worth it;" "Having the dual hygiene dental degree as a lecturer is nice because I have credibility with hygienists and I have credibility with dentists;" and "When you're in front of a group of professionals or students you've got the credentials that match what you're trying to teach them."

Another theme that emerged around the value of advanced education was it's an investment and the dimensions ranged from the impact on pay (salary) to education being an investment in yourself. Examples included: "Every time I went back to school and added more letters after my name, my pay went up;" "Absolutely master's and PhD both hands down. It says a lot about you and us in this group and who we are and our dedication to our profession and its sustainability really;" "It's an investment in yourself but it's it's still an investment;" and "100% worth it. Education is one thing in this world that nobody can take away from you and it's an investment in yourself and it grows you as a person." One participant reported the graduate degree provided opportunities, but she felt unable to pursue them due to a possible reduction in pay upon entry into a new position that would not provide a return on her investment.

The final theme just do it, don't overanalyze or second guess yourself focused on encouraging colleagues to pursue advanced education. Some quotes that reflect the theme included: "It is a time commitment, and the time is going to pass either way;" "Go in there expecting to be challenged and know that you're going to come out far ahead if you put everything you can into it;" "Don't be afraid ever;" "Just do it. Don't overanalyze it. Don't second guess yourself. Just go for it;" "I would say that all hygienists, if they ever expect to do anything other than clinical hygiene, they need more education;" "it has to be an area of interest, and not that you're running away from something, that you're more running to something;" "don't compare yourself to the other hygienists. We are all on different paths, take it one step at a time;" and "I was exactly like you. I am just further down this path, and you just take it one step at a time and when opportunity knocks, no matter how fearful you are, if you feel it in your gut, this is a great opportunity. Embrace it." Representative quotes and themes are shown in Table III.

Discussion

Previous research has suggested career options associated with pursuing graduate studies were limited to education, public health, and research.¹⁸ In addition; research conducted with dental hygienists identified a barrier to pursuing graduate education was a lack of knowledge about potential career prospects.¹⁷ The purpose of this study was to explore the career paths and satisfaction levels of dental hygienists who pursued master's and doctoral degrees.

Some of the findings of this study regarding the impetus for pursuing advanced education were consistent with Carpenter et al¹⁵ in regard to a lack of satisfaction with clinical dental hygiene. Many participants reported experiencing burnout from the demands of clinical practice with limited opportunities for growth. Others reported feeling disenchanted with private practice and working for a dentist. The participants had a passion for dental hygiene but desired more respect and flexible ways to utilize their skill set. As a result of taking the step to advance their education, participants in this study shared a wide range of career opportunities and choices. Career paths in academia ranged from educator to provost; paths in the clinical setting ranged from dental therapist, nurse and dentist; self-employed career paths included public speaking and consultant; corporate career paths included director of operations, editor-in-chief, and marketing; and public health positions included state oral health program director. For many of the participants, their career path coincided with the type of degree program chosen. Other participants leveraged their degree for different types of careers. Results from this

Table III. Illustrative quotes for themes

Theme	Illustrative Quotes
<i>Increased Opportunities</i>	<p>“It’s helped me to be refined, be stronger as an educator”</p> <p>“I would have never been hired without that degree”</p> <p>“I will say that there is definitely no shortage of opportunity when it comes to having more education, more multiple degrees”</p> <p>“I’ve enjoyed working for an organization that is interested in my growth as a person”</p> <p>“you’re invited to a different kind of table because you’re qualified you have your terminal degree”</p> <p>“I could give myself a little bit more of a backbone when I was applying for jobs.”</p>
<i>Professional Growth</i>	<p>“I hope to inspire my students to be the movers and shakers”</p> <p>“It’s kind of ‘us versus them’ mentality (with dentists). And I am hoping that, that I can help break down those barriers”</p> <p>“Every single time we’re choosing to get a bachelor’s degree or a master’s degree in dental hygiene, we’re elevating our profession more”</p>
<i>Personal Growth</i>	<p>“It’s impacted me personally in the sense that it was an evolution, and so I allowed my interest to kind of drive me to where I was going”</p> <p>“I definitely got more confident than I ever have had before”</p> <p>“It was just fulfilling”</p> <p>“It was a great sense of self-satisfaction and an esteem”</p> <p>“I don’t think I felt like I had the confidence to go after things the way I did once I had a broader degree”</p> <p>“I think it does give you that background to help you be more professional and aware of what’s going on and what your roles can be”</p>
<i>Credibility</i>	<p>“I have been pursued by several entities wanting me to participate on boards to give opinions”</p> <p>“It empowered me to realize I was more knowledgeable than I thought I was. I became more vocal in meetings. I had an opinion that I could put fact behind”</p> <p>“I know what I’m talking about and all these initials after my name prove it”</p> <p>“I think what we need are more educated people with doctoral and master’s degrees to keep gaining that traction”</p> <p>“My peers, were expecting my opinion more”</p>
<i>It’s an investment</i>	<p>“It was worth it. I’m on a speaker’s circuit of sorts and I bring the effects of oral biofilm on systemic health to a lot of nurses, they benefit from my knowledge”</p> <p>“The challenge of the education was great, both mentally and physically”</p> <p>“I have three children and it showed them how to work hard to achieve something”</p> <p>“It was an excellent program. It was all online. And I couldn’t believe I made it through, I survived”</p> <p>“Best decision ever”</p>
<i>Just do it, don’t overanalyze or second guess yourself</i>	<p>“I will say that there is definitely no shortage of opportunity when it comes to having more education”</p> <p>“you’re never too old to go back”</p> <p>“I say go for it. I think it’s a long life if you’re doing something every single day that you don’t love.”</p> <p>“It was definitely worth it and I wouldn’t change what I did”</p> <p>“You don’t have it all figured out to start”</p> <p>“If your goal is to get out of being ‘trapped in the OP’ you’re going to fall flat on your face. You have to have a passion for whatever it is you’re pursuing”</p>

study add to the body of knowledge regarding potential career options for dental hygienists who are uncertain about the opportunities graduate education will afford them.¹⁸

Both personal and professional growth were significant themes among the focus group participants. Participants felt better able to bring about change by impacting access to care for those who are unserved or underserved, advocating for oral health care policy change, assume leadership roles, mentor, and empower other dental hygienists to advance their education, increase visibility of the profession, and contribute to the body of knowledge for the profession. One very representative quote to encompass this theme was “getting our degrees is so much more, bigger...than just ourselves. It’s really about advancing our profession as a whole.” Findings from this study are consistent with previous research suggesting the need for advanced education to expand the dental hygiene knowledge base and provide a workforce with enhanced educational qualifications to serve as education, administrators, and more.^{2,4,6-8} If more dental hygienists pursued advanced education, it would elevate the profession, possibly leading to self-regulation. Parallel professions to dental hygiene, such as nursing have been successful in expanding graduate education opportunities as a component of facilitating their advancement.^{19,20} In addition, nursing has made great strides with professional autonomy and self-regulation and can offer insights to dental hygiene on pathways to achieving these goals.^{19,20,29}

However, one aspect of advancing the profession remains with the development of a doctoral degree program in dental hygiene in the US. While dental hygienists interested in pursuing doctoral degrees have increased, the doctoral degrees are in other disciplines outside of dental hygiene.¹⁵ The value of developing a doctoral degree in dental hygiene includes a more in-depth development of theory and research specific to dental hygiene and oral health.^{2,8} The doctoral degree in dental hygiene remains elusive despite attempts by educational institutions and the American Dental Hygienists’ Association to make this a reality.

Another finding shared by participants in this study was the personal growth and confidence related to advancing their education. Lack of confidence is a roadblock to the advancement of the entire profession and suggests that advanced degrees may help overcome this issue.^{9,13} By advancing their education, participants expressed they learned more about themselves, felt more ready to assume leadership, and were less afraid of tackling the unknown such as new jobs, unfamiliar tasks, etc.

Credibility related to having their ‘voice’, opinion, and expertise respected by other professionals in a variety of settings was a major theme expressed by the participants. This becomes more essential as many health professions have elevated their entry-level degrees to master’s and doctoral degrees; the dental hygiene profession will need credibility amongst other health care professionals for interprofessional collaboration.^{4,6,9} Professional recognition, similar to the theme of credibility, was also reported in previous research studies.¹⁸

Findings revealed feeling pursuing an advanced degree provided a good return on investment primarily due to the immediate and increased opportunities available to them. Participants felt their time and financial commitment was worth it, with one participant remarked on financial rewards “each time I went back to school and added letters after my name.” Furthermore, by increasing the number of dental hygienists with advanced degrees it can potentially impact the educator shortage as well as increase the likelihood of creating a doctoral program for the profession.^{7,8}

Participants offered encouragement with the theme *just do it; don’t overanalyze or second guess yourself* to other dental hygienists to pursue advanced degrees to expand their career paths. The findings of Carpenter et al. suggested that encouragement was a key factor in influencing individuals to advance their education.¹⁵ Mentoring, defined as transmitting advice, support, and expertise to a less experienced individual to enhance professional development, is an essential component in advancing any profession to develop future leaders.³⁰ With increased numbers of postgraduate educated dental hygienists, there will be greater opportunities to mentor others towards profession advancement.

Further research is needed to explore the process used by similar health professions in advancing their education, scholarship, self-regulation, and professional autonomy.^{19,20,29,31} As noted in the recommendations from the *Advancing Dental Education in the 21st Century: Phase 2 Report*, it will be important to explore ways to create career ladders in graduate education to prepare graduates for the changing health care environment.³²

This study had limitations. The sample size was small and homogenous. A more diverse sample (e.g. gender and race/ethnicity) may have offered alternative perspectives. In addition, the western region of the US was minimally represented. A limitation of the focus group approach, whether virtual or face-to-face, is being with a group of participants and socially engaging which could result in someone not feeling comfortable about sharing their true thoughts on a topic. To minimize this, the participants had the option of

using a pseudonym as the username and joining with audio only. An interesting observation was the camaraderie between focus group participants with one participant referring to the focus group as a 'sisterhood'. This suggests participants felt comfortable with engaging and sharing their perspective. The PI was a master's student at the time of the study, which may have resulted in bias. However, participant quotes were used to report to minimize interpretation and possible bias.

Conclusion

This study explored the career paths and satisfaction of dental hygienists who have pursued master's and doctoral degrees. The findings suggested completion of advanced education provided access to many opportunities which led to personal growth along with professional credibility. In addition, participants felt their advanced education also supported the further development of the profession and encouraged other dental hygienists to continue to their education.

The results add to the literature about potential career paths and could inspire other dental hygienists to pursue graduate or doctoral studies.

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