

Research

Direct Access Dental Hygienists' Perceptions Concerning Geriatric Curriculum in Entry-Level Dental Hygiene Programs

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Abstract

Purpose: The growing geriatric population has unique and often complex oral health care needs. The purpose of this study was to explore the perceptions regarding direct access dental hygienists (DH) regarding the geriatric curriculum needed in dental hygiene education programs to prepare DHs to provide direct access care for geriatric populations.

Methods: Purposive and network sampling strategies were used to recruit eligible direct access DHs from across the United States for this qualitative study. Semi-structured telephone interviews were conducted until saturation was met. Demographic data were analyzed using descriptive statistics. Open coding techniques were used to identify themes.

Results: Ten direct access DHs agreed to participate. Nine themes emerged from the data analysis: combining didactic and hands-on experience, how direct access differs from traditional practice, importance of a standardized course in entry-level programs, need for a specialty course in geriatrics, understanding the geriatric patient, understanding direct access settings, modifications to treatment modalities, process of care, and interprofessional knowledge. Participants indicated that entry-level dental hygiene students should be exposed to hands-on clinical rotations, have a standardized aging and geriatrics course, and potentially incorporate geriatrics as a specialty tract within dental hygiene programs.

Conclusion: Geriatrics may not be covered in sufficient depth to prepare entry-level dental hygiene students for work with these populations in direct access settings. Findings from this study may be used to support improvements in geriatric curriculum for entry-level dental hygiene programs. Future research is needed to determine necessary focus and most effective way to disseminate this curricular content.

Key Words: geriatric oral health, geriatrics, dental hygiene education, dental hygiene students, direct access dental hygienists, direct access oral care, dental hygiene workforce models

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Introduction

The scope of practice for dental hygienists (DH) has gradually expanded throughout the United States (US) over the past forty years in an effort to increase access to care.^{1,2} Dental practice acts in 42 states now allow for specially licensed DHs to treat patients in a variety of direct access settings and capacities.³ Direct access allows for a DH to determine, initiate, and maintain treatment with a patient without the specific authorization and presence of a dentist.² The direct access DH utilizes assessments and determines the best course of dental hygiene care for patients.³ The dental hygiene scope of practice is determined by individual state licensing boards and varies widely, as does the degree of supervision required

by a dentist.^{2,3} While the scope of practice varies, in general, all states are moving towards broadening the DH scope of practice in order to benefit underserved populations.²⁻⁴

Many populations suffer from oral health disparities; however, the growing geriatric population is of particular interest. Challenges among this population may include an increased number of medical and dental issues resulting in multifactorial and often complex medical and dental concerns.⁵ The ability to maintain good oral health can have psychological, medical, and social impact, directly affecting an individual's quality of life.^{5,6} Research has shown a correlation between oral health related quality of life and

community dwelling elders' ability to be mobile and a desire to socialize within their communities.⁶ The list of barriers to attaining oral health is extensive for the geriatric population living in long-term care (LTC) facilities.⁶ Geriatric individuals frequently contend with: transportation difficulties; dexterity complications; loss of autonomy; low oral health literacy; and limited or no resources to pay for dental care.⁶⁻⁸ Additionally, many in the geriatric population have complex medical issues, are frail, and deal with chronic pain, so oral health is not a priority.⁶⁻⁸ Poor oral health can negatively impact adequate nutrition, cognitive function, cardiovascular health, and respiratory health. Controlling diabetes and aspiration pneumonia are substantial concerns when oral health is poorly controlled in the elderly.⁶⁻⁸

With the number of geriatric people requiring complex care on the rise, the US health care system must be prepared for this growth with a trained and capable health care workforce.^{9-11, 30} Institutions responsible for educating the health care providers have recognized this need and have increased the amount of geriatric curriculum offered in these programs.^{9-11, 30} However, there is a paucity in current literature to identify recent trends in geriatric curricula among dental hygiene programs in North America. Twenty years ago, Tilliss et al. surveyed dental hygiene programs in the US and Canada and found that 89% of respondents had a didactic component and 54% reported a clinical requirement.¹² More can be found in the literature regarding the geriatric curricular content in dental education.^{13-16, 21, 22, 24} Dental programs have introduced and expanded their geriatric dentistry curriculum in response to the essential demands of this growing population.¹³⁻¹⁶

According to the Commission on Dental Accreditation (CODA) Standard 2-12 (patient care competencies) graduates must be competent in providing dental hygiene care to a geriatric patient and assessing the treatment needs of a patient with special needs.¹⁷ However, CODA has no specifications for any standardized courses on aging and geriatrics and no specific curricular content guidelines related to direct access dental hygiene care for the geriatric population. Given the lack of guidelines regarding the necessary content and the essential needs of the geriatric population, direct access DHs may be a valuable resource. Direct access DHs working with the geriatric population may have valuable insight on what curricular content would best prepare the dental hygiene student for treating this population. The aim of this study was to understand direct access DHs perceptions regarding the pertinent curriculum content needed for dental hygiene students in entry level programs to care for geriatric patients with access to care limitations.

Methods

This qualitative case study design utilized in-depth, semi-structured interview questions to assess direct access DHs perceptions of the geriatric curriculum content requirements in entry-level dental hygiene education programs. The following research questions were utilized to guide the investigation: 1) What are the perceptions of direct access dental hygienists working with the geriatric population concerning the geriatric curricular content and guidelines within an entry-level dental hygiene program? 2) Do direct access dental hygienists perceive a need for a standardized course in aging and geriatric oral health? 3) What information do direct access dental hygienists perceive as most valuable to teach entry-level dental hygiene students concerning working with the geriatric population in a direct access capacity? Data were analyzed using an open coding technique in order to identify themes related to curricular content and educational methodologies. This study received expedited approval from the Institutional Review Boards of the University of Idaho and Pacific University.

Participants were recruited through purposive or network sampling strategies.^{18,19} Direct access DHs currently working with the geriatric population were contacted by email and asked to recommend potential participants. A recruitment guide was used to explain the study and identify interested parties. Direct access DHs then referred other potential participants who were screened as possible participants.

Direct access DHs currently working with the geriatric population a minimum of 8 hours per month for a minimum of 6 months were eligible to participate. Sampling diversity was based on years of treating the geriatric population, less than 5 years or more than 5 years, and the state of licensure and practice. Practice setting variables included working in a nursing home, adult foster care home, hospital, assisted living facility, senior center, community center, memory care facility, or any other facility with geriatric residents. New graduates, inactive and retired DHs, and DHs employed in dental hygiene education were ineligible. The sample was determined by meeting a saturation point in the interview process.^{18,19}

Selected participants were emailed an informed consent form that was returned to the principal investigator (PI). Questions were emailed to participants to review prior to the interview session (Table I). Participant chose a pseudonym that was used throughout the study. Interviews were conducted by the PI over the phone and audio recorded and transcribed by a professional transcription company. Data collection and analysis were performed simultaneously, with each interview leading to new insights and hypothesis testing in the following interview.^{18,19}

Table I. Interview guide

Introductory questions
<ol style="list-style-type: none"> 1. Tell me about your experiences working with the geriatric population. How long have you been working with the geriatric population and in what setting(s)? 2. What drew you to working with this population? 3. What are your greatest challenges and rewards working with this population?
Geriatric curricular content questions
<ol style="list-style-type: none"> 1. What education did you have in dental hygiene school to that prepared you to work with the geriatric population? 2. What types of educational experiences do you believe dental hygiene students in entry-level programs should possess upon graduation? 3. What are your thoughts on the number of hours and number of geriatric patients a student should be required to work with in a clinical setting while in school? 4. What settings would be most beneficial to prepare a dental hygiene student for providing comprehensive care and treatment for the geriatric population?
Standardized geriatric coursework questions
<ol style="list-style-type: none"> 1. What are your thoughts on dental hygiene students having a separate, specific (or standardized) course on aging and geriatric oral health or should topics be blended in other dental hygiene courses? What would a course on aging and geriatric oral and systemic health look like? 2. Would an interprofessional course on aging and geriatrics be more beneficial? Why or why not? 3. What specific topics could be covered in a geriatrics course for dental hygiene students?
Most valuable entry-level geriatric learning experiences for direct access care questions
<ol style="list-style-type: none"> 1. What are your thoughts on specific treatment modalities a dental hygiene student should be comfortable performing in order to be prepared to treat the geriatric population? 2. What are your thoughts on working in alternative setting? What specific information do you feel a dental hygiene student needs to become aware of in working in these settings? How would this information best be presented? 3. Do you feel dental hygienists need an advanced practitioner degree to work with geriatric patients given the complexities of their oral and systemic health? Why or why not?
Closing question
<ol style="list-style-type: none"> 1. Is there anything else that comes to mind, that you want to share related to this topic?

An open coding system was used to organize the data utilizing Nvivo (QSR International, AU). The PI reviewed the open coding words and phrases and performed the analytical coding.¹⁹ The analytical coding from the first interview was compared to the second interview for overlapping patterns. In addition, the second interview was coded for any new ideas. This process was followed for all of the interviews and was used to establish a way to compare and discover new themes throughout the interview process.^{18,19}

Member checks were performed by the PI to establish trustworthiness. Each participant reviewed their interview and transcription for accuracy via a password protected email. If the participant felt they had been misrepresented or their words misconstrued, they were given the opportunity to correct the meaning or intentions. Validity and reliability were established by conducting a pilot interview and peer examination. The pilot interview was conducted with a direct access DH who met the inclusion criteria. The interview was monitored by an experienced qualitative researcher and opportunities to make adjustments to the interview questions and process were provided. The co-investigators reviewed the collected data and subsequent coding to determine the coding accuracy of the PI.

Results

Ten direct access DHs from across the US were interviewed for this qualitative study. All participants were female, between the ages of 32-60 years of age, with an average age of 46 years. Years in practice ranged from 2 to 29 years, with an average of 15.8 years. Years of direct access experience with the geriatric population ranged from 1 to 14 years with an average of 4.8 years. Demographic data is shown in Table II.

Nine themes emerged as the data was analyzed. Themes and related research questions are shown in Table III. A description of each theme follows.

Combining Didactic and Hands-on Experience

When asked how best to prepare entry-level dental hygiene students for direct access practice with the geriatric population, the importance of combining didactic and hands-on experience was a recurring theme. Lyn said, "If students can do a rotation in the nursing home environment, then they can get some great experience and education." Sasha Lee remarked on the importance of experiencing hands-on training, "I had a geriatric component to my [didactic] studies, and I still had no clue." Lou spoke about the importance of hands-on experience because the substantial differences as compared to traditional clinical practice. She said, "I'll see people in their bedroom, in their recliner, in the living room of the adult

Table II. Participant demographics (n=10)

Demographics	n	%
Age		
20-35	2	20%
36-50	4	40%
51-65	4	40%
Years in practice		
1-10	3	30%
11-20	3	30%
21-30	4	40%
Years as a direct access DH		
1-5 year	7	70%
6-10	3	30%
Dental hygiene degree		
B.S	7	70%
A.S	2	20%
A.A	1	10%
States of direct access licensure		
California	1	10%
Oregon	1	10%
South Dakota	1	10%
Texas	1	10%
Utah	2	20%
Virginia	1	10%
Washington	2	20%
Wisconsin	1	10%

family home, and in their wheelchair. Sometimes they're just unable to transfer to a dental chair and it's safest if they just stay where they're at, in a recliner or in a wheelchair."

Differences between direct access and traditional practice settings

The study participants remarked on the distinct differences between traditional dental practice and direct access practice settings. A theme emerged regarding the need for students to be taught and exposed to the varying environments while in still in school in order to be prepared to join the direct access work model. Bri commented, "Just knowing it's okay if you're not doing everything in the exact order and timely manner that they're trying to teach you in school, [or] for a private practice. Students should learn "that it's okay to do things differently, as long as you're safe, and the patient is safe, and you're still practicing aseptic techniques, and universal precautions. The patients don't show up at 9:00 or show up at 10:00 like in a regular dentist office. You have to be more flexible."

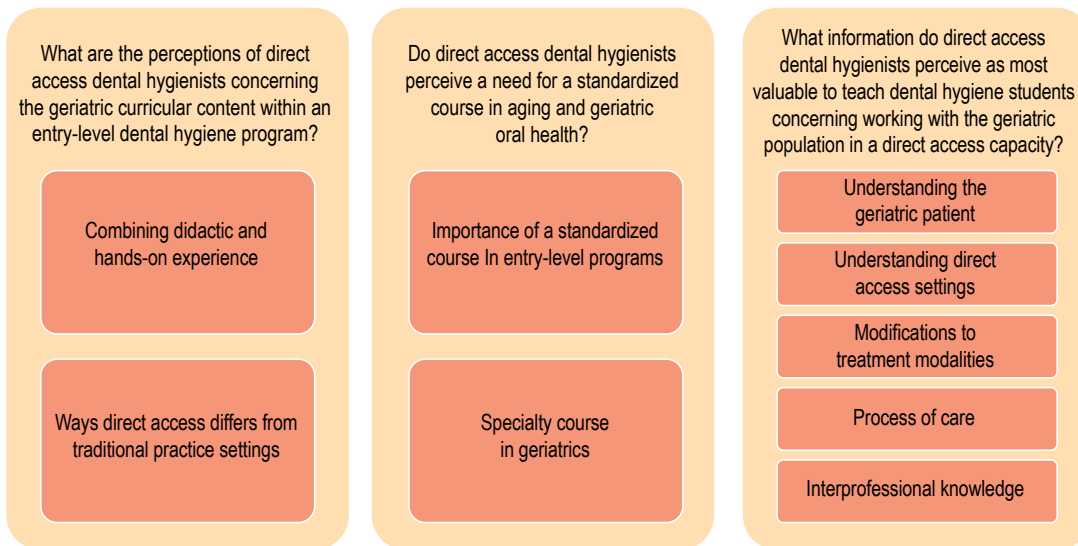
Ruby provided insight into the varying body positions a direct access DH my need to utilize when treating a patient. She said, "I clean teeth standing up. I clean teeth kneeling. I clean teeth sitting on a very adjustable stool. I do it from the left. I do it from the right. I do it from behind the patient. I'm dancing around the patient when I'm providing care because you can't access the mouth and provide care the way we do in traditional clinics."

Importance of a standardized geriatrics course in entry-level programs

The third theme that emerged from the data was whether or not a standardized course was needed to prepare dental hygiene

students to prepare to care for geriatric patients. Many dental hygiene education programs combine geriatric curriculum into another standing course such as special needs patients or public health. Sandra remarked, "I do think it would be beneficial to have a whole course on its own for geriatric patients, I absolutely think it would be beneficial." Ruth stated, "I do agree that there should be a standardized course. The length of the course I'm not sure about".

Table III. Research questions and corresponding themes



Cecelia spoke about the need for a longer, more in-depth course on aging and geriatrics and stated, “How cool would it be if we had a geriatric course that all dental professionals went to with the other [healthcare] professionals that are learning about [geriatric care] as well?”

Specialty course in geriatrics

Participants in this study commented on the importance of including a standardized course in geriatrics in entry-level dental hygiene programs. However, some participants felt a stand-alone course was unrealistic given the challenges of a crowded curriculum. With this consideration another theme emerged on designing a specific specialty course that could be delivered as an elective or a post-graduate course. Cecelia commented, “The students that are interested in geriatrics, they do a geriatric residency, after they graduate. Maybe that’s an additional semester.” Ruth suggested “making geriatrics a specialty within dental hygiene, it could be an online certificate that you earn [post-graduation].” Karen stated, “there’s just not enough time, I think, in a regular hygiene curriculum to hit everything. [Geriatric care] is more of a specialty.”

Understanding the geriatric patient

A theme emerged regarding the wide range of special needs within this population that DH students need to understand along with some of the valuable information that should be included in the curriculum. Cecelia remarked, “We need to understand who these people are. We need to understand where they’ve been in their lives. We need to understand that they’re typically dealing with the three plagues of old age; loneliness, helplessness, and boredom.”

Donna commented on geriatric patient’s impaired physical capacities, and how they may be unable to “turn or move their head, or they have neck problems, or have all kinds of atrophy, or they’re in pain.” Ruby mentioned the variances between a geriatric patient and a younger patient and said, “Your brain is different. Your kidneys are different. Your liver is different. All those things metabolize drugs differently. Polypharmacy is different in an older person than it is in a younger person. There’s just so many topics. There’s at least a dozen different types of dementia, and they all express themselves differently.”

Understanding direct access settings

Participants remarked on the many differences between private practice and direct access settings. A theme emerged on the importance of understanding the settings, who the stakeholders are, which professionals one interacts with, and how a DH may operate within a direct access setting. Bri

explained, “It takes a lot of education and a lot of legwork to get a facility on board with you and some facilities are better than others.” Lou commented, “Sometimes it’s very hard to [gain access into] a facility to even see the residents because [the administrative staff/nurses] are not educated enough on the importance of oral health.” Karen remarked on the importance of understanding and “identifying the key people who are involved in [the geriatric residents] daily care.”

Modifications to treatment modalities

Modification to treatment modalities emerged as a theme, including newer oral care products geared to geriatric populations, techniques simplifying active disease treatment, and routine protocols that facilitate maintaining oral health. Sandra discussed how she “uses the cavitron on maybe half the patients if they can tolerate the water, [and] if they can lean back enough. A lot of times we end up just hand scaling and brushing.” Sasha Lee gave an example of a treatment protocol after hand scaling or ultrasonic use, “if I’m able to floss, I do, but I have to watch them because of biting. I’ll go back through and brush again with chlorhexidine. Then I do my silver diamine, and fluoride varnish on top.”

Process of care

When treating residents of long-term care (LTC) facilities, participants referred to several important aspects necessary to teach students. When speaking about the patients/residents, Karen remarked, “you’re looking at their capabilities? Are they able to do anything on their own? Do they rely solely on somebody to care for them? Are they in a wheelchair? Hospital bed?” Donna said, “Pharmacology is huge for this job. Knowing what all the different meds are and knowing all the oral complications. I see patients who are on aspirin and Eliquis, and they will be bleeding like crazy.”

Interprofessional knowledge

The final theme that emerged from the data was interprofessional knowledge. Lyn said, “Dental hygiene students should have a general understanding of all the health professionals and employees you can encounter in the nursing home setting and other alternate practice settings.” She went on to say, “in long term care settings you’ll see administrators, social workers, resident advocates, activities directors, directors of nursing, nurses, CNAs, dietary services, maintenance, housekeeping, beauticians, and physical therapists.” Participants discussed the various interactions with nursing staff, caregivers, and the many specialists who work with the residents and emphasized the importance of interprofessional education and collaboration.

Discussion

The themes that emerged from this qualitative study reveal the extensive topics direct access DHs believe should be included in an entry-level dental hygiene program. Curriculum content should include both hands-on and didactic content in order to prepare new graduates to work with the geriatric population in LTC facilities and other direct access environments. The literature repeatedly mentions the importance of hands-on geriatric training for dental and dental hygiene students.^{9-16,20-26} A previous study found that half of the surveyed DHs did not have experience treating geriatric residents of LTC facilities; 88% did not perceive themselves as prepared to work with this demographic.²³ If students are not exposed to older adults in LTC at all functioning levels, from independent to frail, they will not be prepared to care for this population post-graduation.¹⁴ Dental hygiene graduates who possess an understanding of the environment they will be working in, and the population they will be treating, will have an easier transition into direct access work.^{9,15} Additionally, early exposure to direct access environments and frail older adults may result in increased numbers of new graduates seeking to work with geriatric populations.²⁰⁻²² Participants felt that hands-on exposure with geriatric rotations was vital in the preparation of dental hygiene students for direct access work in LTC facilities.

Participants stated that while they felt a standardized course on aging and geriatrics would be very valuable, they expressed concern regarding the already crowded entry-level dental hygiene curriculum. As possible solutions, geriatrics as a specialty track within dental hygiene programs, or as a post-graduate program, were suggested. Discussion concerning gerontology as a specialty in dental education programs has been frequently cited in the literature.^{13-15,25} Research relating to geriatric dentistry suggests that when an area of need is recognized as a specialty, such a program may lead to increased interest in that patient care area.^{15,25,30} Current literature addressing dental hygiene educational methodology and geriatric curriculum is limited. Previous research supports incorporating an activity that includes the design, development, and implementation of a simulated geriatric patient experience for dental hygiene students.²⁷ A more contemporary study describes dental hygiene students who experience a practicum involving geriatric patients in LTC facilities, and developed competencies that were transferable to many practice settings.²⁸

Direct access dental hygiene care varies considerably across the US. In some states entry level students are qualified to work as direct access DHs upon graduation, while in

many other states DHs must complete 500-4000 hours of supervised clinical practice prior to receiving their direct access DH designation.² Dental hygiene students interested in specializing in geriatric care could take post-graduate courses while accruing hours of clinical experience.

Themes in this study revealed the importance of inter-professional collaboration and the need for DH students to be familiar with the health professionals they will encounter in a LTC facility. Participants spoke of interactions with physicians, physical therapists, nurses, and social workers, to name a few. Graduates of dental hygiene programs must be prepared to engage with other health care professionals and present themselves as valuable, highly educated oral health care providers. Findings from one study have shown an unmet interprofessional education need in gerontology, particularly in regard to caring for LTC facility residents.²⁹ Institutionalized geriatric patient care cannot be limited to the education and training of one discipline. This population requires an interprofessional team approach focused on comprehensive care.^{25, 29,30}

Results of this study may have been limited by the small number of participants. However, interviews continued until saturation was met. Another possible limitation was that the participants did not represent all direct access DHs currently working with geriatric populations. However, the sample included direct access DHs from a number of states across the US and provided a representative sample of direct access experiences. Study participants were also not dental hygiene educators and therefore lacked knowledge regarding standardized course content and current curriculum guidelines.

Further research is needed to determine the best way to deliver geriatric didactic and practical content to DHs who may be planning to work with this population in direct access settings. There is a vast amount of content to cover on a topic that is frequently placed within a special needs course. Research is needed to determine if this placement is adequate or whether appropriate alternatives should be developed. Additional quantitative research should be conducted to examine and compare variables including amount of experience, year of graduation, scope of practice, and practice variations.

Conclusions

Geriatrics may not be covered in sufficient depth to prepare graduates of entry-level dental hygiene programs to care for geriatric patients in direct access settings. Hands-on experience in direct access practice settings is essential for future direct access DHs. Curricular content in geriatrics must be comprehensive in entry level dental hygiene programs

and consideration should be given to a stand-alone course or specialty track elective option. Dental hygiene students must have interprofessional experiences to learn how to collaborate with other health care professionals in direct access settings. Future research should include more in-depth study of the geriatric curriculum content and optimal placement in entry-level dental hygiene programs.

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