

# “Education is Definitely Key”: An Interpretive Description of Nursing Students’ Experiences with Pediatric Oral Health Nursing Education

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### **Cover Page Footnote**

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Oral disease, primarily dental caries, is the most prevalent chronic pediatric disease in North America (Canadian Dental Association, 2017; Centre for Disease Control, 2019). Dental caries affect 60%–90% of school children and can lead to physical and psychological disabilities, as well as significant morbidity in adulthood (Canadian Dental Association, 2017). Poor oral health in childhood has been linked to an inhibition of cognitive and social development, sleep deprivation, failure to thrive, malnourishment, and poor learning (Centre for Disease Control, 2019). Thus, the oral health of children and adolescents can be a reliable and expedient indicator of general health (Peres et al., 2019). In particular, the mouth can serve as an early warning system for immune system diseases, nutritional deficiencies, general infection, some cancers, and stress (National Children’s Oral Health Foundation, 2020).

Prevention of dental disease is possible through education, counselling, and anticipatory guidance. While dental professionals are often considered responsible for oral health care, there is an undersupply of dental providers worldwide (Health Canada and the Public Health Agency of Canada, 2017). Interventions targeting the oral health education of primary health care practitioners have been suggested as a means to overcome the paucity of dental professionals (Haber & Hartnett, 2019; Hartnett et al., 2019). Nurses are positioned to play a significant role in oral health promotion and disease prevention across the life cycle (Spurr et al., 2017). Specifically, nurses who work in areas such as public health, well-baby clinics, pediatricians’ offices, and obstetric departments are likely to have early contact with children and their caregivers and can lead efforts in understanding risk factors, consequences, and prevention approaches associated with dental disease or early childhood caries (American Academy of Pediatric Dentistry, 2004).

Although oral care is considered an essential component of quality nursing care, it appears to be given low priority in nursing practice (Morley & Lotto, 2019; Spurr et al., 2015). Additionally, the education of nurses in basic oral health and oral-systemic health is often inadequate (Grønkjær et al., 2017; Morley & Lotto, 2019; Pai et al., 2016). As a result, nurses may overlook or fail to respond to the oral health needs of children and adolescents (Spurr et al., 2015; Spurr et al., 2017). Recognizing the scope of these issues is essential to increase the role of nurses in the evaluation and promotion of oral health in children and adolescents (Percy, 2008; Peres et al., 2019). Qualitative studies examining the perspectives of undergraduate nursing students on oral health education are rare. A firm understanding of oral health is needed to provide comprehensive and holistic nursing care, making it important to consider the perspectives of nursing students. Gaining insight into nursing students’ experiences and knowledge levels can reveal gaps in the undergraduate nursing curriculum and health care system with respect to oral health care, and inform the development of oral health care content that can be easily provided in both theory and clinical courses.

The overall purpose of this research was to explore nursing students’ perceptions of their education and practical experiences with respect to child and adolescent oral health. The specific objectives included obtaining information regarding nursing students’ oral care beliefs, knowledge level, and practices; determining sources of information; and exploring barriers and facilitators to the provision of oral health care in one pediatric acute care clinical setting.

## **Methods**

### **Study Design**

To develop an understanding of nursing students’ perceptions of pediatric oral health nursing education, an interpretive description (ID) approach (Thorne, 2016) was used. ID is a non-

categorical, grounded, qualitative research method that can be used to address complex experiential questions relevant to applied health disciplines. The ID methodology was used to identify themes and patterns in the data while also considering potential individual variation (Thorne, 2016). With an enhanced understanding of nursing students' perceptions of their pediatric oral health education, the ID approach supported qualitative inquiry aimed at moving beyond description and achieving higher levels of abstraction and, thus, interpretation. As Thorne (2016) stated, ID is a particularly useful method for focusing on what registered nurses can do to make a difference. Thus, these findings have the potential to inform revisions to the oral health component within the third-year undergraduate pediatric course.

### **Setting**

The research took place in the College of Nursing at a Western Canadian University. The College of Nursing is in midwestern Canada, enrolls approximately 345 nursing students annually, and comprises a Bachelor of Science (BSN) and a Post-degree Bachelor of Science (PDBSN) program. Students who participated in this research were enrolled in the four-year BSN program, which includes interprofessional learning experiences with students from the Colleges of Medicine, Dentistry, Pharmacy and Nutrition, Kinesiology, Physical Therapy, Clinical Psychology, and Veterinary Medicine and is anchored in theory and clinical teaching and learning (College of Nursing, University of Saskatchewan, 2021). The course from which the students were recruited for this study includes pediatric theory (26 hours) and acute care pediatric clinical practice (78 hours) components.

### **Sample**

Prior to recruitment and data collection, ethics approval was obtained from the Behavioural Research Ethics Board at the University. Participants were purposefully recruited by either the first or second author through an announcement and invitation extended during a third-year undergraduate pediatric nursing course. Because nursing students could be perceived to be in a vulnerable position, every effort was made to maintain confidentiality and to ensure that potential participants did not feel coerced. Therefore, the faculty member responsible for recruitment was not teaching in the related pediatric courses. Participants had already completed two nursing courses involving theory and clinical practice in their third year of nursing education, wherein 38% of their time was committed to classroom theory, 52% to small group clinical practice, and 10% to labs and seminars. Although there were male participants ( $N = 4$ ), the sample included a majority of female nursing students ( $N = 21$ ).

### **Data Collection**

Data for this research were derived from audiotape recorded, face-to-face focus group interviews with third-year nursing students. In-depth, semi-structured focus group interviews were completed by one of the authors experienced in facilitating group interviews. The focus groups took place in the College of Nursing, in a room that was mutually agreed upon to be comfortable, quiet, and private. Each focus group lasted between 45 and 60 minutes. A semi-structured interview guide was used and refined throughout the data collection process based on developing analytical observations (Thorne, 2016). The focus group interviews remained open-ended to allow full exploration of nursing students' perceptions and experiences. After informed consent was obtained, the facilitator began with prompts such as "What does oral health mean to you?" to elicit discussion with as little prompting as possible. Concurrently, field notes were documented during and after each focus group interview. Following the eighth focus group, similar responses were

being discussed and, therefore, given exposure to those participants who had been interviewed, the authors deemed limited new data were being reported, a deep understanding of the data had occurred, and recruitment was halted.

### **Data Analysis**

Audio-taped recordings from each focus group interview were transcribed verbatim by experienced transcriptionists, and the data were organized and stored using the qualitative software program, QSR NVivo 11©. Using Thorne's (2016) process of analysis, the authors began by focusing on the whole data and asking questions such as "what is happening here?" and "What am I learning from these data?" which directed a coherent analytical process of reading and rereading each transcript closely before coding. Coding of the data was then conducted to identify and make connections within the data and to explore connections and relationships among the data. Throughout the process of data analysis, constant comparative analysis was undertaken (Thorne, 2016). Analytical notes were documented by each author to ensure that coherence of participant discussions and perceptions was maintained throughout data analysis.

As analysis progressed, interpretation moved beyond coding, sorting, and categorizing. For example, some of the early findings were shared with subsequent focus group participants to obtain additional responses, which in turn supported the advancement and refinement of the developing analysis. Additionally, although each author analyzed the data separately, the authors met throughout the research process to discuss the emerging codes, categories, and patterns and confirm interpretation of the analysis. Once the codes were developed into themes, the themes were placed into patterns and larger themes. The findings represent a constructed thematic analysis of all participant responses.

### **Scientific Credibility**

This study adhered to Thorne's (2016) evaluation criteria to enhance the credibility and rigour of the research. Epistemological integrity was sought through dense description of the data and clear description of the sample and the study context. Representative credibility was developed through prolonged involvement with the participants over a six-month period and by using both data from focus groups and field notes. Thorne's (2016) criteria of analytic logic was sought through careful and full documentation and disclosure of the research process. Additionally, interpretive authority was reached by checking some of the preliminary findings with subsequent participants, confirming interpretation of findings with other team members, acknowledging biases, and ensuring reflexive research practice by consistently participating in critical reflection of the research process.

### **Findings**

A total of eight focus groups, with three to five participants per group, were held with 25 third-year nursing students enrolled in an undergraduate pediatric nursing theory and clinical course. Three themes and related subthemes arose from the focus group interviews: Nursing Education Is Key: Recognition and Insight Into the Value of Oral Health Care (Learning the Knowledge and Practice of Oral Health Care, and Learning the Interprofessional Role of Nursing in Providing Oral Health Care); Fading Away: Barriers to Education and Practice (Brushing off Oral Health, and Recognizing Gaps in Education); and Spreading the Culture: Improving Nursing Education and Practice (Supporting a Top-Down/Bottom-up Culture, and Making Oral Health a Priority). These themes and subthemes provide insight into nursing students' perceptions of and

experiences with oral health related to teaching and learning in one nursing program, and critical strategies that can be used to improve oral health education in nursing theory and clinical courses.

### **Nursing Education Is Key: Recognition and Insight Into the Value of Oral Health Care**

Nursing students realized the importance of learning about oral health and holistic and evidence-based oral health care provision in their nursing education. As one student stated, “If we didn’t have that one lecture about this we would have had almost no education, so nursing education of new staff and new nursing students is definitely key.” Another nursing student suggested that “it all comes down to education. If we’re educated and we’re told that oral health is important and it needs to be a priority, that’s going to carry forward into our practice and it’s going to become a priority for us.” While the students in the focus group interviews recognized the importance of nursing education, they were explicit in their descriptions of learning needs beyond simply looking in the mouth and the importance of interprofessional education (IPE) and practice. The following subthemes describe these experiences.

#### ***Learning the Knowledge and Practice of Oral Health Care***

Nursing students discussed the learning they experienced from the lecture provided by the pediatric dentist and its impact on their provision of oral health care in clinical practice. Generally, nursing students did not connect the mouth to the rest of the body before the lecture and were surprised to learn that dental caries could lead to systemic changes in health such as diabetes, cardiovascular disease, and diminished cognitive functioning. Every student shared the importance of learning about oral health and how it can be seen as the window to general health. As one student stated, “I definitely have a deeper understanding of oral health and how it connects to everything” while another said:

Now I realize oral health is a main way of seeing overall health in a quick glance, right? So at a glance you can see if somebody’s taking care of themselves and when I think of oral health I think immediate signs if there’s something else going on, right? Is there a nutrition problem? Is there an issue with teaching at home? Is there a knowledge deficit? Is something else going on?

Nursing students also articulated that the lecture helped them understand that oral health care was part of holistic nursing care. For example, one student said, “After that lecture I went to my last rotation and I was, like, oh, my God, we never ask about brushing teeth in the morning. And right away I went to my girl and I made sure she brushed her teeth that morning because it needs to be like hooking up your IV’s and, like, checking how they are.” Other students expressed that understanding the connections between oral health and other components that contribute to health status, such as nutrition, helped them recognize that evaluating oral health is necessary for performing comprehensive assessments in clinical practice.

#### ***Learning the Interprofessional Role of Nursing in Providing Oral Health Care***

Receiving a lecture from a pediatric dentist allowed nursing students to learn from an expert, understand the role of the dentist, and think about their own role in supporting oral health in clinical practice. The value of learning from a dental expert was demonstrated through the following statement:

I think if you would’ve had a nurse we wouldn’t have been able to see the dentist’s side of it. I do feel like I’d be more comfortable now knowing that the dentists are almost pleading

for the nurses, ‘You need to care about this,’ and so now it’s like you have that bridge made already.

Learning from the expert about oral health was important to the students, but it was clear that having nurses impart knowledge was also critical. For example, one student offered, “To see it from a nurse’s perspective is important, as well, and hear that nurses think it’s important too—that it’s something that we need to pay attention to and we need to be referring, that would be also helpful.”

Following the lecture and their pediatric clinical practice, nursing students also realized the importance and need for oral health to be prioritized by health care professionals from many backgrounds, with professions such as nursing, dentistry, pharmacy, medicine, and speech language pathology being mentioned. As one student said, “Nurses can do something and we need to work as a team because dental professionals, they can’t do it themselves and we can’t do it ourselves. So, it’s that collaborative coming together that we need to achieve.” There was a call for IPE with students from other professions to enhance nursing students’ learning; as one student suggested, “Even just working side-by-side with a med student doing an assessment, you get a different perspective based on the way they’re trained. You can play off of each other and really hit things that you might otherwise overlook.” Additionally, another nursing student stated, “Dental students would be great to interact with on the unit... Just getting a glimpse of how they assess would be helpful for us.”

### **Fading Away: Barriers to Education and Practice**

While nursing education was touted as being key, nursing students communicated concerns with the culture surrounding oral health in the pediatric practice area and how it impacts their learning. When discussing oral health care provision, one student stated, “But as we get out into clinical practice, it’s a culture. I mean, if nobody else is doing it, it may fade away, unless you get really dedicated, strong, new grads who don’t really care what other people think, which is tough.” The nursing students explained that many practising nurses and other healthcare professionals tended to “brush off oral health,” leaving them unsure and lacking confidence about their newfound knowledge.

### ***Brushing off Oral Health***

Students expressed concern about the limited teaching and learning they experienced about oral health in their nursing education and felt that what they did know could be easily forgotten. Furthermore, one student commented, “So there’s a culture in nursing that doesn’t necessarily feel knowledge about, and providing good oral health is important, but there’s also a culture in other professions that don’t think it’s important.” In agreement, another nursing student said, “Yeah, the thing, right, it seemed like it’s not our job, and I was sort of made to feel like that’s what dentists are for.”

From the focus group discussions, it appeared that there was limited role modelling from the nurses, clinical instructors, and other health care professionals. As one student shared, “I’ve never been told by a clinical instructor, except peds, actually, to check their mouth and no one’s really prompted me to clean their teeth or anything because there’s other things I should be doing. And it’s just missed.” Students went on to agree that oral health assessments, referrals, and knowledge did not seem to be the norm, and there was nothing in the chart or daily care plan that prompted such care. As one student said, “there isn’t any written reminder, there isn’t anything

you could be, like, ‘oh, why did the nurse leave this blank, why did I leave this blank, I should go back and assess, check about brushing the teeth.’” Thus, without role modelling, reinforcement, support, and reminders, students felt that their knowledge was easily forgotten, their newfound practice was “sloughed off,” and patients did not always receive holistic nursing care. The following nursing student’s comment captured the concerns expressed by each of the students in the focus group interviews:

I hope that I will be able to integrate it into practice because it is so important. But for me it has been so long since I have done it, and no one has asked me to do it before. It is not habit and I am worried it will be hard to make that switch and integrate it into practice. So I know I need to, but am I going to remember to do that? Like checking the mouth, and checking for caries, sores and other things. I am going to do it, but am I really? Especially since no one seems to expect me to. All that knowledge is going to fade away.

### ***Recognizing Gaps in Education***

While students appreciated their new learning regarding oral health concepts and practice, it was clear that gaps in their education were noted. Students discussed the existing gaps in education and skill acquisition in the clinical practice setting, leaving much to be learned about oral health care. For example, students felt that there were limited and inconsistent teaching and learning opportunities related to oral health throughout their education. This fact was clear given the following statement: “It is interesting that we don’t touch on it in assessment. Last year we didn’t touch base on it at all. Why couldn’t we open the mouth? Count the teeth?” Another student reflected on the content that had been provided, realizing the limited nature of the teaching and learning that took place, stating, “We learn about hygiene. Simply the hygiene and how uncomfortable it would be for a patient to go days without brushing her teeth. But not about the potential systemic effects, the patho, we don’t learn about the health benefits of good oral health.”

Students also noted that with limited knowledge and practice, it was difficult to know how to determine what was normal and abnormal when conducting an oral health assessment, demonstrated through statements such as, “I just found it really frustrating when I was trying to do it. When I was looking in the mouth I had no idea what I was looking for, because I have nothing to compare it to. So I’m like, okay, is this a lot of saliva or not a lot?” Another student noted that while some education was helpful, it was not nearly enough: “I think it’s hard, too, because how can a two-hour lecture make you professional? Yeah, I could look in someone’s mouth but do I know what I’m really seeing? What am I going to write?”

### **Spreading the Culture: Improving Nursing Education and Practice**

After reflecting on the identified concerns regarding their knowledge and practice “fading away” and gaps in their education, the nursing students had many supportive ideas for improving oral health education in both classroom and clinical settings.

### ***Supporting a Top-Down/Bottom-up Culture***

Students felt that both a top-down and bottom-up approach were needed to support a culture of improved oral health care, lending ultimately to enhanced holistic and comprehensive care of pediatric patients. First, nursing students acknowledged the need for a change in culture in the pediatric clinical practice area to support evidence-based practice and continued growth. One of the nursing students stated:

When you are a new grad, you just want to do whatever the other senior nurses are doing; otherwise, they will blame you for something that you didn't do. So, if they see other people not doing and giving it a focus and they seem like it's not really an important issue it, kind of, like, changes your perspective. It has to become a culture in order to bring a change.

For the culture to change, nursing students referred to a top-down approach in which nursing management would be responsible for providing continuing nursing education about pediatric oral health. The importance of a top-down approach was recognized by the majority of the students as a critical step. For example, one nursing student stated:

I think it needs to come from the top-down. And if managers care about it and then they spread that to their staff, by, like in-services and presentations and other training, I think then that spreads the culture to the rest of the ward, too.

There was also recognition of the importance and ability of nursing students and nurses to stimulate a bottom-up shift to achieve a supportive culture for developing oral health care knowledge and skills. As one student stated, "There needs to be a bottom-up approach which will be important and has to do with nursing students... new grads thinking this is important, 'I'm going to do this.'"

### ***Making Oral Health a Priority***

Along with advancing a practice culture that is supportive and encouraging, the nursing students discussed strategies to prioritize oral health education and clinical practice. To begin, the students spoke about how teaching about oral health should start early in the nursing program and be offered consistently throughout each year. Students emphasized the importance of engaging in theoretical content based on pathophysiology so that they learn the why and not just how to *do* oral health care. As one student stated, "I don't think the importance was emphasized. Well, it was, but not the *why*. Like they told us to do it, but there was no why behind it. Now that I know, it made a lot of sense to me why it is important." The students also felt that the knowledge they acquired in relation to insurance and referrals was essential, as demonstrated by the student who shared, "It was so useful to know how oral health care, like, how you have to pay for it. Before you refer your patients for things. Do they get it for free or does the government pay for it? And to whom can you refer for service and for what aspects of care? That was really useful, I was much more confident in providing my nursing care." Emphasizing nursing's role within the interprofessional team was also reportedly key; as one student said, "Maybe we can't do a lot. But we need to know that we can assess, screen, and we can say 'we have some issues here.' Let's do some referrals. That is the extent of our care and our scope. And we can help them floss and brush." A strategy that nursing students proposed for teaching such information was placing a slide on oral health into lectures in all classes including their medical-surgical, mental health, and introductory assessment courses.

Students also discussed strategies related to their clinical practice including the opportunity to assess their pediatric patients using specific techniques, starting with general health questions and moving to an inter- and intra-oral assessment, use of the PUFA Index (pulp, ulceration, fistula, and abscess), screens for risk, and methods of documentation. Additionally, nursing students determined that to strategically prioritize oral health care, a document such as "tools for teeth" could be implemented which could be a sheet in the patients care plan or chart that includes formal assessment strategies, referral pathways, enhanced mobilization of IPE and collaboration, and documentation. Overall, the nursing students felt that strategies such as these would make oral

health care a priority and allow it to become a natural and formalized aspect of holistic and comprehensive pediatric and public health nursing care.

### **Discussion**

The findings of this study represent three main themes including Nursing Education Is Key: Recognition and Insight into the Value of Oral Health Care; Fading Away: Barriers to Education and Practice; and Spreading the Culture: Improving Nursing Education and Practice. The findings of this study emphasize that oral health care is an important topic in nursing education and that interprofessional involvement is beneficial for learning about this topic. Additionally, the findings highlight gaps in nursing education and practice for oral health care and present ideas for improvement. These themes offer new and unique insight into the experiences of third-year nursing students, and, perhaps most importantly, the findings present strategies to build on nursing education to enhance students' knowledge and skills related to oral health in pediatric and public health nursing.

An increasing number of quantitative studies are examining nursing students' knowledge, abilities and attitudes surrounding oral health care (Bhattaria et al., 2016; Deogade & Suresan, 2020; Grønkjær et al., 2017; Haresaku et al., 2018; Pai et al., 2016; Yavagal et al., 2020). However, there are very few qualitative studies exploring this area (Morley & Lotto, 2019). Morley and Lotto (2019) examined nursing students' views of oral health care in the hospital setting. In comparison, our study focused on the educational experiences of nursing students related to oral health care in both the classroom and clinical practice settings. This study provides additional support for the results found by Morley and Lotto (2019) and offers novel insight, including unique strategies for enhancing knowledge and skill acquisition surrounding oral health care.

#### **Nursing Education Is Key: Recognition and Insight into the Value of Oral Health Care**

In this study, we found that nursing students believed that oral health care is an important component of nursing education. The nursing students' argued that oral health care is a necessary topic to include in nursing education, demonstrated by statements such as "nursing education of new staff and nursing students is definitely key" and "it all comes down to education." To our knowledge, this proud acknowledgement made by the nursing students is not otherwise discussed in the literature. Alongside nursing students' understanding that oral health is an important component of nursing care (Grønkjær et al., 2017; Yavagal et al., 2020), this finding encourages additional focus on oral health care in nursing education.

Along with recognizing the value of oral health care being included in nursing education, nursing students in this study emphasized the need for interprofessional involvement. IPE is established as an effective way to increase nursing students' knowledge and skills surrounding oral health (Czarnecki et al., 2014; Dsouza et al., 2019; Farokhi et al., 2018; Higgins et al., 2020; Spurr et al., 2017). Additionally, IPE has been found to assist nursing students in understanding their role in oral health care provision among the greater health care team (Bhagat et al., 2020; Coan et al., 2019; Czarnecki et al., 2014; Nierenberg et al., 2018). Our study provides additional support for incorporating IPE into teaching related to oral health care as the nursing students commented on the importance of interacting with multiple professions, including medicine, dentistry, pharmacy, and speech-language pathology in a "collaborative coming together" to provide holistic oral health care.

### **Fading Away: Barriers to Education and Practice**

Many of the barriers to implementing oral health care in clinical practice identified in this study compliment those found by Morley and Lotto (2019). In this current study, nursing students felt that health care professionals, including nurses, would “brush off oral health” in clinical practice settings. The current study’s findings echo those of Morley and Lotto (2019), who discovered oral health care was often overlooked or perceived as low priority and, thus, not demonstrated by nurses in practice, particularly in the pediatric setting. Participants in our study commented on the lack of visible prompts encouraging oral health care in clinical practice; as one nursing student stated, “There isn’t any written reminder.” Morley and Lotto (2019) also found a lack of tools and outcome measures for oral health assessments in the acute care setting. Our study adds to this discussion by expanding on the challenges nursing students face implementing oral health care in clinical practice without role modelling or visible prompts because “if nobody else is doing it, it may fade away.” These findings illuminate the need for additional support for nursing students to implement oral health care in clinical practice.

A key barrier discussed in this study was the existing gap in nursing education for knowledge and skill acquisition related to oral health care. Nursing students have previously commented on having the necessary theoretical background from their education, but lacking the knowledge to perform oral health care, particularly because it is not demonstrated in practice (Morley & Lotto, 2019). Other studies have also identified the need to improve nursing education related to oral health care (Bhagat et al., 2020; GrønkJær et al., 2017; Morley & Lotto, 2019; Pai et al., 2016). Participants in this study shared that limited and inconsistent learning opportunities surrounding oral health in their nursing education impeded their ability to confidently perform oral health care. Learning about oral health care must be made consistent in nursing education for students to gain sufficient knowledge, and for such knowledge to translate into clinical practice settings, especially as it has been found that sufficient knowledge of oral health care allows nurses to feel empowered in care provision (Morley & Lotto, 2019).

### **Spreading the Culture: Improving Nursing Education and Practice**

A particularly unique contribution of this study is the exploration of nursing students’ ideas for improving oral health education in both classroom and clinical practice settings. Nursing students identified a need for oral health to be a topic that is taught early, thoroughly (pathophysiology, skills, information regarding insurance and referrals), and consistently in nursing education. Additionally, nursing students felt that a shift in culture was needed for oral health care to change in clinical practice, stating, “It has to become a culture in order to bring a change.” Nursing students commented on the need for both top-down and bottom-up support for this shift in culture to happen wherein “Managers care about it,” along with “new grads thinking this is important.” To our knowledge, this is the first study to explore nursing students’ perspectives of how nursing education and practice surrounding oral health could be improved.

### **Limitations**

The sample was recruited from one university in midwestern Canada and, as such, the experiences of the participants are specific to the nursing program in which they were enrolled. In addition, while participation in this research was offered to every student enrolled in the pediatric course, the sample was somewhat homogenous, largely representing younger, single, White females. Additionally, it may be that those who chose to participate in this study were more or less interested in pediatric oral health than those who chose not to participate. While these factors may

limit the generalizability of the findings, the experiences and implications reported herein may be transferable and meaningful to other students and health educators. Another limitation relates to the use of focus groups for data collection. Focus group interviews can yield fruitful discussion and, therefore, rich data. However, participants may be influenced or biased by the input from the others in the interview group, or reluctant to express their true thoughts and experiences. To reduce the possibility of discomfort sharing within the group and respondent bias, each focus group was facilitated by a registered nurse who was experienced in focus group interviews and effective communication.

### **Implications for Practice and Research**

Attending to nursing students' learning needs in a focused and deliberate manner can help educators improve the undergraduate curriculum and lead to holistic and comprehensive nursing care in pediatric and public health settings. Effective student-driven strategies to improve nursing education for oral health care include early integration of oral health concepts such as defining caries, discussing incidence, exploring related pathophysiological processes, and engaging students in the examination of the systemic effects of unaddressed oral health challenges. Additionally, demonstration and hands-on experiences of oral health care practices and assessment, and interprofessional oral health education in both the classroom and clinical settings are needed. Students expressed that early and consistent exposure to oral health concepts and related care are essential to minimize or mitigate the 'fading away' of their knowledge and skills. These strategies will support enhanced pediatric and public health nursing education and, ultimately, improved preparation of registered nurses for clinical practice that includes attention to oral health. The findings from this study may be used as a foundation for future research including exploratory qualitative research with more diverse samples and multiple educational settings, needs assessment research with pediatric health care providers to determine the best ways to support student teaching in clinical settings, and formal development and testing of an IPE oral health intervention.

### **Conclusions**

Oral caries are the most common chronic illness in the pediatric population globally. Furthermore, oral caries can negatively impact systemic health with progression over time. Thus, it is critical for nursing students to understand not only the prevalence of caries, but also important related oral health concepts. Nurse educators in classroom, clinical, and lab settings are well positioned to include oral health content and support nursing students in developing the knowledge, attitudes, and skills required to provide comprehensive, holistic, and evidence-informed pediatric nursing care. Additional research is required to develop appropriate oral health content and an IPE oral health intervention to support nurse educators and nursing students alike.

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