

A Conceptual Model Using CliftonStrengths® to Support Dental Hygiene Students' Professional Development

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ABSTRACT

Purpose Professional development is instrumental in the ongoing success of healthcare professionals and students. The purpose of the second year of this two-year study was to continue to apply the results from the CliftonStrengths® assessment to support entry-level dental hygiene students' professional development and to create a conceptual model for professional development in dental hygiene education.

Methods CliftonStrengths® were incorporated in didactic and community learning experiences throughout year two of the dental hygiene curriculum. At the end of year two, focus group interviews assessed student perceptions of professional strengths based on these learning experiences. Co-investigators used a qualitative analysis software program to identify codes and themes. Investigator triangulation and member checks were used to validate responses.

Results All second-year dental hygiene students (n=32) participated in year two of the study. Two themes were identified: relevance of CliftonStrengths® and professional development. Within the theme of relevance, the subthemes of adaptability, making connections, and teamwork emerged. The theme professional development yielded three subthemes: appreciation, personal and professional identity, and insight.

Conclusion This study demonstrated CliftonStrengths® can be used to promote professional development among dental hygiene students. As a result, a conceptual model was developed for professional development in dental hygiene education. This model can be used as a framework for teaching and to improve student learning experiences.

Keywords professional identity, qualitative research, focus groups, dental hygiene, strengths-based education, professional development

NDHRA priority area, **Professional Development: Education** (educational models)

Submitted for publication: 4/30/2023; accepted after revision: 9/7/2023

INTRODUCTION

Professional development is instrumental in the ongoing success of healthcare professionals. It encompasses formal and informal learning and education designed to improve professional performance as it relates to the competencies of professional practice including research, teaching, and patient care.¹ Professional development aims to improve patient safety and the quality of care delivered. Continuing professional development is designed to increase individual competence and organizational effectiveness.²

As a profession, dental hygiene has no developed protocols or guidance documents that promote professional development. Concepts such as continued competence or models that address expanding knowledge and skills other than continuing education for licensure renewal have not been created. Other professions have professional development concepts and models that might be considered as the profession continues to evolve.

For example, within the profession of pharmacy, continuing professional development is a concept that is supported and defined as “the responsibility for systematic maintenance, development and broadening of knowledge, skills and attitudes, to ensure continuing competence as a professional, throughout their careers.”³ Pharmacy views professional development as significantly different from continuing education, and integral to reinforce the value of ongoing professional growth and to the establishment of a professional identity.³ A guidance document was created for continuing professional development using a model that includes: reflect, plan, act (implementation), evaluate and record (portfolio) that provides flexibility to engage in learning that is most beneficial to a particular pharmacology practice. The goal is to encourage the thoughtful completion of professional development plans using state-of-the-art technology that can be implemented by both practicing pharmacists and students throughout their professional lives.³

Likewise, nursing offers another model of professional development through their standards of practice and performance for professional nurses. The American Nurses Association (ANA) recognizes that lifelong learning and competency are significant components of nursing practice.⁴ Nursing professional development (NPD) was defined as a specialty to improve nursing professional practice and role competence through ongoing learning, change, and growth to improve population health. Scope and standards of practice for NPD were created that included six key areas of responsibility: orientation and onboarding, competency management, education, role development, collaborative partnerships, and inquiry. Additional standards parallel the nursing process framework to the NPD practice of assessment, diagnosis, outcomes identification, planning, implementation, and evaluation.⁵ Within the dental hygiene profession, the Standards for Clinical Dental Hygiene Practice represent a similar framework guiding dental hygiene practice.⁶ However, a formal dental hygiene professional development model similar to NPD does not exist.

While there is recognition for maintaining professional development upon graduation, the concept of learning professional development begins as a foundational skill within dental hygiene education programs. Nevertheless, there is a lack of literature supporting teaching professional development skills while students are enrolled in dental hygiene education programs. An examination of current accreditation standards indicates there are no overt statements focused on professional development. Standards 2-20 and 2-21 indirectly suggest a reference to lifelong learning by stating “Graduates must be competent in applying legal and regulatory concepts to the provision and/or support of oral health care services” and “Graduates must be competent in the application of self-assessment skills to prepare them for lifelong learning.”⁷ If there is limited to no emphasis on professional development, one might question how the profession expects students to acquire a professional

identity or a sense of commitment to lifelong growth and professional development.

One strategy for professional development is teaching students how to identify and integrate individual strengths throughout educational and professional experiences.^{8,9} This approach may help increase preparedness for leadership roles and promote confidence as oral health providers in a variety of settings as a member of the healthcare team. A recent study of undergraduate entry-level dental hygiene students incorporated strengths assessment and professional strengths-based learning experiences to support professional development.⁹ Preliminary findings of year one of a two-year study indicated that this approach contributed to a positive learning environment with improved flexibility and empowerment of students.⁹

The discipline of dental hygiene is based on science and knowledge advanced through the creation and study of conceptual models and theoretical frameworks. To date, there are seven theoretical models that contribute to knowledge specialization in dental hygiene.¹⁰⁻¹⁷ Research regarding conceptual models to guide professional development within the dental hygiene curriculum is lacking. There are currently no conceptual models specific to utilizing strengths for professional development in dental hygiene students. Individualized professional development may be minimally addressed in dental hygiene education due to the lack of a framework for teaching and learning. The purpose of the second year of this two-year study was to continue to apply the results from the CliftonStrengths® assessment to support entry-level dental hygiene students' professional development and to create a conceptual model for professional development in dental hygiene education.

For the purpose of this study, the term strengths were used and operationally defined through the online assessment instrument, CliftonStrengths®, an assessment that identifies four domains of strengths with corresponding lists of behavior traits. The four domains of strengths include strategic thinking, executing, influencing and relationship

building. In year one of the study, dental hygiene students completed the assessment, identified their strengths, and utilized them with faculty guidance.⁹ Although CliftonStrengths® was used in all learning environments (clinic, laboratory, didactic), in year one, emphasis was placed on clinical learning experiences.⁹ In year two of the study, greater emphasis was placed on didactic and community related experiences as it pertains to the second-year or senior level curriculum. In addition, for this study professional development was defined as the process of identifying strengths and skills to grow and succeed in a professional environment.⁹ The following research questions guided the study during the second year:

1. What are dental hygiene students' perceptions of using CliftonStrengths® in their didactic and community experiences?
2. How does utilizing individual strengths throughout a dental hygiene program affect professional development?

METHODS

This study represents year two of a longitudinal qualitative exploratory study designed to assess the professional development of entry-level dental hygiene students using CliftonStrengths®. The study received IRB exempt status approval from the Idaho State University Human Subjects Committee (IRB-FY2019-182). Year one of the study involved an exploratory design in which a convenience sample of entry-level first year dental hygiene students completed the CliftonStrengths® assessment instrument that identified their top five strengths in order of occurrence. All dental hygiene faculty completed the same assessment and were provided training workshops to provide supportive instruction in using CliftonStrengths® with students in clinic, laboratory, and classroom settings. At the completion of year one, focus group sessions were held with both entry-level first year dental hygiene students and faculty using an established questioning route. Analysis of CliftonStrengths® and themes for year one is provided in a separate manuscript.⁹

During year two of the study, faculty were provided training workshops to emphasize the use of CliftonStrengths® in classroom and community learning experiences as the focus during year one had been primarily on clinical instruction with less emphasis on classroom instruction. In addition, the same cohort of students, who were now second year dental hygiene students, were provided a workshop to remind them of their top five CliftonStrengths® and encouraged to use their individual strengths in the classroom and clinical settings throughout the academic year.

In year two of the study, emphasis was placed on didactic and community experiences as these areas are integral to the senior level curriculum and the focus was on the professional development of the students to prepare them for career entry. During year two, the impact of COVID-19 required a transition from traditional face to face instruction to a virtual classroom. This created an opportunity to apply CliftonStrengths® to a constantly changing learning environment. Students engaged a variety of activities including journaling to identify strengths used in community and interprofessional course experiences, group work in virtual break out sessions, assignments related to preparation for career entry, leadership and legislative activities, and CliftonStrengths® application in reflection papers.

At the end of the spring semester of year two, focus group sessions were held over Zoom with the second-year dental hygiene students. Students were randomly assigned to focus group sessions, each consisting of 5-6 students. Sessions were scheduled based on convenience for participants. All participants selected pseudonyms to ensure confidentiality and anonymity.

The focus groups were designed based on a set of interview questions, similar to the questions used in year one, which had been validated by two focus group experts. The interview guide reflected a semi-structured format in a conversational style and was composed of an opening question, an introductory question, a transition question, key questions, and a final closing question asking if participants would like

the researchers to know about this topic.¹⁸ Participants were encouraged to provide more information if their response is brief by asking, “Could you please tell me more about that?”

The opening question in the interview was designed to be easy to answer by asking participants to share their chosen pseudonym. The introduction question helped participants start reflecting on their experiences in the dental hygiene program. The transition questions moved the conversation to CliftonStrengths® and the influence of those strengths throughout the program. Participants were asked how knowing about their top five strengths influenced them. The key questions encouraged participants to analyze the use of CliftonStrengths® for learning experiences in the classroom and in the community rotations and how they were different from when they started the program. The ending question allowed participants to reflect on their prior responses and provide any additional information that was not previously shared.¹⁸

Focus groups lasted approximately forty-five minutes. The moderator for the focus groups was a member of the research team who had no previous contact with the entry-level students thereby reducing the likelihood of bias by association. This co-investigator had experience conducting qualitative research and focus group interviews, and followed the interview protocol closely to ensure biases were not introduced to enhance methodological rigor. In addition, the Principal Investigator (PI) evaluated each focus group transcript to denote that key concepts were represented and that the process allowed participants to restate main ideas to establish non-bias.¹⁹

Each focus group session was audio-recorded and saved through an encrypted account on the conference platform (Zoom; San Jose, CA, USA). Access to the recording was limited to the PI and focus group moderator, sent to a professional transcriptionist, and transcribed. The focus group moderator reviewed each transcription to verify for accuracy; each participant verified the accuracy of their answers to the focus group questions.

A qualitative analysis software program (Dedoose; Los Angeles, CA, USA) was used to sort and analyze participants' responses to identify themes by using parent and child codes.²⁰ The co-investigators then systematically reviewed the codes and key quotes to identify themes. Validity was established through investigator triangulation.¹⁸ Respondent validation and member checks were also used to allow participants the opportunity to verify the qualitative data obtained and that the researchers' interpretation of data was accurate.¹⁸

RESULTS

All second-year dental hygiene students completed year two of the study (n=32). The majority (93.75%, n=30) were female and 2 (6.25%) were male and all participated in the focus group sessions. Quotes for the student focus groups were condensed into four parent codes and fifteen child codes. Two themes were identified: Relevance of CliftonStrengths® and Professional Development.

Relevance of CliftonStrengths®

Students were asked how they used CliftonStrengths® within classroom and community experiences. The responses included student perceptions of individual and team application of CliftonStrengths® for improved outcomes. Three subthemes emerged: adaptability, making connections, and teamwork.

Adaptability

Students recognized COVID-19 had a significant impact on how classroom and community experiences were structured. All class sessions had to be modified from in-person sessions to virtual learning environments, and planned community rotations at various sites kept changing due to COVID-19 restrictions. Therefore, flexibility was important for managing the ever-changing environment. Students recognized that being able to adapt to new situations was a valuable lesson. For example, Frankie explained,

"I tried to focus throughout the program, especially with COVID and everything happening. What can I take away from this day? What can I take away from this chapter? What can I take

away from this assignment and collect it for my use further down the road in my career?"

Elizabeth noted,

"I was able to use [CliftonStrengths®] a lot in community because you have to be really flexible and capable of solving problems, and just adapting to different environments. I was able to find the quickest and best solutions possible at the time."

Making Connections

Students valued their professional strengths in establishing relationships and building rapport with the individuals they met during community service experiences. They appreciated the importance of making connections with community partners and the special needs patients that needed access to care. Daisy noted, "you have to build relationships with these people prior to working with them as well as with our community partners to be able to communicate well and work as a team." Frankie explained, "my CliftonStrengths® really helped me connect with the people in those rotations more. It was easier for me to collect and memorize information that I knew would help anyone I came upon." Jenny further illustrated this theme by stating,

"We had a couple of rotations where we performed sealants on children and some of them were having a really difficult time. They did not want to be there; they were afraid. And, so being able to use that top strength to reassure them and comfort them, really explain what we were doing, was very helpful."

Teamwork

Students expressed the importance of teamwork in classroom group assignments and during community rotations. For example, Bailey stated, "I tried to use my [CliftonStrengths®] in combination with other people's strengths to ensure that we can bring a lot to the table" while Paige described that CliftonStrengths® "gives you an increased perspective as other people are going to have strengths, but my strengths are just as important as theirs." Debbie indicated that "working

together and utilizing our strengths in different ways to be a better team is the best way that we were able to use our strengths in community.”

Additional supplemental quotes related to this theme are shown in Table I.

Professional Development

Students were asked to describe how they were different from when they started the program until now based on their CliftonStrengths®. Student responses highlighted increased levels of professional

Table I. Supporting Quotes: “How did you use CliftonStrengths® within classroom and community experiences?”

Adaptability	Making Connections	Teamwork
<p>One of my top CliftonStrengths® is restorative. I think I was able to utilize this a lot in community because you have to be really flexible and you have to be really capable of solving problems and just adapting to environments that are different. I think I was able to utilize that and just find the quickest and best solution possible at the time. <i>(Elizabeth)</i></p>	<p>So, my number four is Woo, and I feel like I use this a lot in community just trying to connect with others in the community, whether it be people we've worked a lot in community rotations. And we've done school rotations where we've placed sealants on children. Just connecting with people and being able to get to know people. <i>(Courtney)</i></p>	<p>I thought it was good to have to go to [community rotations] with other classmates. We may have similar strengths; we may have different strengths. But it was nice to see different people's strengths and brought a balance to each community rotation. <i>(Debbie)</i></p>
<p>One of my top five CliftonStrengths® is restorative, that is someone who's good at helping or dealing with problems and trying to figure out how to fix the solution. Our professor for community taught us that the number one thing that hygienists need to prioritize with community rotations is to be flexible because things can get canceled and get rescheduled especially right now with COVID. I've had a pretty crazy semester and I've had to reschedule a couple rotations and I've had them rescheduled on me. <i>(Brooklyn)</i></p>	<p>I used them when problem solving, if I needed to in any way. I loved our community rotations. I do wish we had gotten to experience more, but you know, COVID. The one I use the most, I think was definitely empathy. It makes me more patient for sure. So, when I'm out in the community or helping people and they don't understand, or they're tired. People are just human. The input strength that I had made it easier for me to collect and memorize things that I knew would help anyone I came upon in our community rotations, especially with the COVID vaccination rotation. I like to collect information. So, I'd been reading up on COVID and it helped a lot for sure. <i>(Frankie)</i></p>	<p>One of my top strengths is harmony and I think I use this in community as teamwork, because I feel like when you make programs or you do service projects, you always have to work as a team and you don't want someone to be a bully or really passive. And so I feel like I do a very good job at making the team good. <i>(Jessica)</i></p>
<p>Leadership has really helped. I've learned to become more of a leader, even though I tend to hold back a little bit. And some of these CliftonStrengths® has helped me realized that I need to be more leader like. <i>(Sonny)</i></p>	<p>My top strength is empathy and just feeling for others. I think that I connect really well with children. We had some great sealant rotations, and I had some really difficult, special needs children that we were able to just connect and get done what we needed to get done. It was a good experience. <i>(Melissa)</i></p>	<p>I thought it was good to have to go with other classmates. We may have similar strengths. We may have different [strengths]. It was nice to see different people's strengths and it brought a balance to each community rotation. Working together and utilizing our strengths in different ways to be a better team is the best way we were able to use our strengths. <i>(Debbie)</i></p>
		<p>Now when I face problems or situations, I can reflect on how these [strengths] affect my relationships with other people in a working environment, just being able to build other people's strengths by using my own strengths. <i>(Elizabeth)</i></p>

development. Three subthemes emerged from the focus group discussions: appreciation, personal and professional identity, and insight.

Appreciation

Students developed an appreciation for the strengths that they developed and the difference that occurred because of their CliftonStrengths®. Paige stated,

“I can go back to my CliftonStrengths® and realize that I’m strong in these areas and that I can contribute [to] these when I do get out into that world of private practice. I am grateful that we have been able to have these CliftonStrengths® to give us a little bit of confidence and tell us, “You are good at these things. You are strong in these areas and this is what you can contribute.”

Further, Frankie related that

“The strengths that I bring to a team, to an environment, I’m much more comfortable in who I am and my skills for dental hygiene. But the biggest change has been in my coping skills. This has been a really difficult program. And, when things got hard, I actually did look at my CliftonStrengths® and decided that, well, there’s got to be a way for me to learn differently. That really helped me come up with some good coping skills that I will be able to use in both my personal and professional life. That’s what we learned in this program is that we can all do really hard things.”

Personal and Professional Identity

Students reflected that they are very different now from when they started the program noting they have matured and their sense of identity has changed. For example, Brooklyn expressed: “I didn’t really have a professional identity before I started this program and I’ve learned about a whole new profession and how to provide patients with care” while Katie described “I’m very proud and impressed with how far I’ve come both in the program and with things in my personal life that pushed me outside of my comfort zone.” Lastly, Bianca explained:

“I feel like I matured more mentally and physically, and it just gives you a whole different mindset. You view things differently. You have a more grownup perspective. You view things from different angles, how to compare and contrast things. It matured me more mentally.”

Insight

The final subtheme to emerge was insight. The students demonstrated awareness of how they changed over the course of the two years in the dental hygiene program and what they learned by using CliftonStrengths®. For example, Becky noted:

“I definitely feel like I have grown. I have become a lot more resilient. There have been a lot of challenges that I have faced throughout this program, but it’s been nice to see that I can bounce back from those challenges and get through them.”

Elizabeth summarized:

“Now when I face problems or situations, I can actually think and reflect how these strengths came out and how they affect my relationships with other people as well, especially in a working environment. Just being able to build other people’s strengths by using my own strengths.”

Bailey expressed:

“A lot has happened in two years. Everybody knows how stressful the program can be. Knowing my strengths definitely helped with that. There were days I was feeling I don’t think I should be in this program. I think this was a mistake for me to get in. Then it was definitely a good thing to fall back on my strengths. I would remind myself I was an achiever and I can do this. And then, in addition, the part you don’t see is your personal life. With COVID in the last two years I lost a sibling. This was just probably the hardest two years of my life. There were days where I thought I could not move on and go to school. But, we would have those journal entries with our strengths, and you know what? I did use

them, I did like it. I would feel like I can't go to school after all this happened, but I did it. And, I think that was because I knew my strengths and I knew myself, and I was able to accomplish because of that. Looking back I am definitely different. I'm definitely a stronger person."

Additional key quotes associated with this theme are shown in Table II.

DISCUSSION

Findings from this study indicated students perceived an overall positive and engaging experience with using CliftonStrengths® in classroom and community settings. One major theme that emerged was relevance of CliftonStrengths® throughout their dental hygiene education. Results suggested that using CliftonStrengths® were highly relevant to success in learning skills related to adaptability, making connections, and teamwork. Year two of this study occurred during the COVID-19 pandemic and students experienced a rapid shift from face-to-face instruction to online learning in higher education.²¹ The change to virtual learning required students to pivot and navigate unprecedented educational challenges.²² Thus, the subtheme adaptability seems appropriate. Recent research conducted during the COVID-19 pandemic suggested that nurturing student adaptability helps prepare students for future challenges. Change is essential for promoting both personal and professional growth and development.²²

In this study the subtheme of making connections became apparent as students identified the importance of establishing relationships and social networks to improve health outcomes. According to Lopez and Luis, strengths-based education helps build new relationships and social support.⁸ They suggested that establishing a learning culture in which students view themselves and collaborative groups through "strengths-colored glasses" fosters appreciation for differences and establishes a meaningful sense of relatedness.⁸

The subtheme of teamwork also emerged as students reflected on the value of CliftonStrengths®

in developing collaborative partnerships in classroom and community learning experiences. Notably, findings from this study related to student perceptions of teamwork are consistent with research conducted among college-level technology and engineering students.²³ In both studies, students identified that strengths were particularly useful in teamwork and working with others.²³ This research revealed that students applied and understood their strengths throughout the academic program and perceived their strengths have importance in their success.²³

Professional development was the second overarching theme represented in this study. Confidence, maturity, and change in perspectives were components of the subthemes of appreciation, personal and professional identity, and insight. The subtheme of appreciation represents students' recognition of the significance of CliftonStrengths®. Building upon strengths led to increased self-confidence and development of positive coping skills. These findings are similar to a study that demonstrated increased retention of first-year college students who used CliftonStrengths®.²⁴ Strength based conversations within classrooms and with professors increased students' self-confidence due to more intensive faculty interactions and greater satisfaction with campus experiences. Additional benefits of using strengths-based classroom activities included the ability to learn more effectively, self-assess abilities, and reflect more realistically about future expectations. The results suggested that a strengths-based curriculum has positive implications for students' decision making and future career choices.

Throughout the two years of educational experiences using strengths-based learning, students commented they developed a professional identity and a growth mindset. Moving beyond comfort zones led to maturity and a change in perspective. Support for professional development and recognition of a professional identity has been noted among associate and baccalaureate nursing students and pharmacy students.^{25,26} Qualitative research among nursing students demonstrated that forming a strong professional identity helps students become prepared

Table II. Supporting Quotes: “How are you different since starting the program using CliftonStrengths®?”

Appreciation	Personal and Professional Identity	Insight
<p>I feel like now I can see a difference and I can actually see, especially in my patient care, how the thing that connects me to patients the most is my relater strength. I feel that helps me make patients more comfortable and allows me to explain things better, and makes the process more enjoyable for them and for me. <i>(Jane)</i></p>	<p>I am happy with the person that I have become since I started because that person is very different now. <i>(Maddie)</i></p>	<p>Well, I really do like the CliftonStrengths® because it focuses on positivity. I think that is a reprogramming that needs to happen in our society where we focus on what we're not doing well and what we can do better rather than what we're struggling on and how we can improve that struggle based on our strengths. <i>(Frankie)</i></p>
<p>When we first started CliftonStrengths®, I kind of thought it was silly. But now that I'm about to graduate, I feel that it is an important and helpful strategy. <i>(Courtney)</i></p>	<p>I would say the biggest change is that I am more sure of myself and I believe in myself more now. <i>(Heather)</i></p>	<p>I have so many wonderful things to say. I would say mainly resilience. The program is very challenging. It has really taught me to use resilience and strength and I am very proud of that. <i>(Olivia)</i></p>
<p>These strengths can help set us apart and show what we can bring to a dental office. <i>(Courtney)</i></p>	<p>Coming to realize that you are not going to be strong enough in all aspects of everything, and that being able to use other people's strengths is also going to help you to be strong. <i>(Emily)</i></p>	<p>I feel like I matured mentally and physically and have a whole different mindset. You view things differently with a more grownup perspective. <i>(Bianca)</i></p>
<p>I believe that I've been a stronger person. I'm more educated, I know a lot more than I did, as well as getting out of my shell more. And, I feel that my CS have helped with positivity, achiever, and developer. <i>(Jessica)</i></p>	<p>I feel like I have grown. In the beginning, I honestly doubted myself. I was scared, especially of the unknown. But I feel like I have grown as an individual. I look forward to the future and just growing as a professional in private practice. <i>(Anna)</i></p>	<p>CliftonStrengths® helped me stay consistent and strong and look at the end goal rather than whatever the situation was at the moment. <i>(Katie)</i></p>
<p>I feel I have come out of my shell a lot. Being able to talk to new people is a lot easier. And, I have been able to accomplish more than I ever thought I could and do really hard things. I feel that I am stronger. I have strengthened my CS through this to become a stronger, more well-rounded person. <i>(Jenny)</i></p>	<p>This program has taught me a good majority of what our future careers will hold for us. And, I definitely feel like I am a completely different person, with the knowledge that I have the skill set for patient care and everything else. It's been great for learning and being able to apply CliftonStrengths® for a lifelong career. On top of that, I love the community that we are surrounded by, the faculty and lifelong friendships. <i>(Amanda)</i></p>	
	<p>Communication was one of my top five strengths. I've really tried to work on that and implement that strength. I feel like it actually fits me, makes sense to me, and has made me more confident and made a difference. It is one big thing that has been different from when I started versus now. <i>(Ryan)</i></p>	
	<p>I've grown a lot and am more confident and assertive with my skills. I've gotten much better with at relationship building. <i>(Daisy)</i></p>	

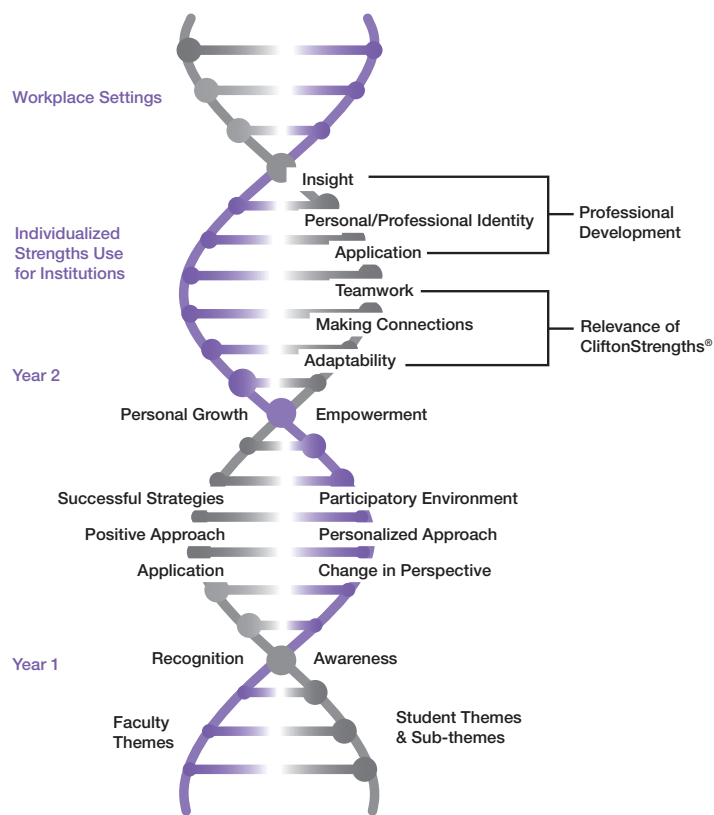
for their role as a practicing nurse and encourages learning.²⁵ Students develop greater critical thinking ability, reflection, and confidence through guided reflection activities and independent clinical decision opportunities. Similar to the dental hygiene students in this study, the nursing students developed the confidence to see themselves as professionals and mature in their roles.²⁵ Likewise, pharmacy students introduced to a professional identity development program, established increased levels of autonomy and motivation noting a greater understanding of professionalism and professional identity.²⁶ Supporting the early implementation of professional development strategies allowed for the adequate maturation of pharmacy students to prepare them for a successful transition to the workplace.²⁶

Regarding the subtheme of insight, student reflections highlighted resilience and strength as outcomes of using CliftonStrengths® throughout the dental hygiene program. These findings are consistent with previous research that identified a strengths-based curriculum contributes to the perceived student growth of resilience.²⁷ Similarly, students recognized the application of strengths-based learning provided opportunities to manage, adjust, and overcome challenges.²⁷

While this study shows value for strengths-based education within dental hygiene programs to support professional development among dental hygiene students, a framework for teaching and learning these concepts is needed. There are currently no conceptual models specific to utilizing strengths for professional development in dental hygiene students. Therefore, a conceptual model was developed from the data collected over the two years of this study. Although faculty were only interviewed during year one, they were an integral part of the development of a student professional identity through a strengths-based approach. To help define the integral interaction between faculty and students, a helix model with two strands was created: one for students and one for faculty and placed upright to represent a ladder (Figure 1).

In year one, the steps of the ladder connect the similarity of student and faculty themes. Two

Figure 1. Complementary Faculty and Student Themes



intersecting points between faculty and students occurred at the beginning of year one: *Awareness* and *Recognition*.⁹ The first intersection was created by learning about individual talents and strengths from both groups. With help from the faculty, student strengths were utilized to help navigate challenging educational experiences with a focus on what students did well to help solve problems throughout year one. Complementary themes emerged from both students and faculty as demonstrated by the connected ladder rungs (Figure 1). At the end of year one, another intersection occurred representing *Personal Growth* from student themes and *Empowerment* experienced by students observed by the faculty.⁹

In year two of the study, the helix model expands upward to represent the professional growth and development of the students. The unconnected steps represent the potential to use strengths-based education for professional development in other

higher education institutions that are individualized for that particular institution, students, and faculty. These steps of the helix ladder are created through strengths-based growth and professional identity development while in an educational setting.

The double stranded helix continues upward with no themes to represent ongoing professional development and the continued growth of a professional identity as the student completes their education and enters the workforce. This is illustrated by the intersection of the ladder rungs at the end of year two. The students in year two of the study recognized the development of a personal and professional identity. Students expressed confidence in knowing who they were and valued using their strengths beyond the educational setting. The rungs of the helix beyond year two represent continued professional development in the workforce. The educational experiences using a strengths-based approach were fundamental in establishing an awareness of the strength's students possessed, how to use those individual strengths in an educational setting for professional development and established the value of using strengths in professional practice settings.

Limitations and Future Research

There were several limitations to this study. The purposive sample of dental hygiene students from one institution may not be representative of the dental hygiene student population as a whole. Student experiences may vary depending on the different types of learning environments and experiences at each institution. The COVID-19 pandemic was acknowledged as a confounding variable in this study limiting originally planned classroom and community activities. Students in this study faced a fluctuating environment where online learning was implemented instead of face-to-face instruction and activities.

Suggestions for future research include interviewing faculty at the end of year two to see if complementary themes emerge between faculty and student groups. Studying dental hygiene cohorts from other institutions using a strengths-based approaches may identify

similarities and differences. Although COVID-19 did impact students in this study, it also provided an opportunity to use CliftonStrengths® to overcome obstacles due to the pandemic. Using a strengths-based approach with interprofessional activities warrants investigation as well.

CONCLUSION

Strengths based education is centered around encouraging dental hygiene students to be more proactive in learning situations. Results from this study provided a blueprint for student professional development. These new skills created the framework for the development of a conceptual model that illustrates students' strengths development along a continuum from problem solving challenges, to expanding professional development and preparing for the ever-evolving workplace.

DISCLOSURES

The authors have no conflicts of interests to disclose. This research was partially funded by a grant from the ADHA Institute for Oral Health.

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