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PRECEPTORSHIP WITHIN ACCREDITED NUTRITION AND DIETETICS PROGRAMS: A PRAGMATIC MIXED METHODS STUDY

by

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A Dissertation Submitted in Partial Fulfillment of the

Requirements for the Degree of

DOCTOR OF EDUCATION

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Minnesota State University Moorhead

Moorhead, MN

April 16, 2021

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Has been approved

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DEDICATION

I would like to dedicate this dissertation to family, and to the memory of my dad. My mom always told my sister, Katie, and me that we could do anything we set our minds to. The determination and grit that was needed to get to this point in my education and career are a tribute to her strength and support. My dad was so proud of our accomplishments, and I know his beautiful blue eyes would be beaming with pride right now. Katie, thank you for being my loudest cheerleader.

My husband, Jeff, you have been a constant support in my life since we were in high school. Thank you for always having faith in me and lifting me up when I am overwhelmed. I am so happy and grateful that I get to walk through this life with you. And lastly, to my boys, Layne and Levi. I love you more than I can ever put into words. Thank you for being the funny, smart, and loving individuals that you are. I hope I've been able to pass on to you my mom's philosophy that you can do anything you set your mind to doing. I wish for you explore whatever path in life makes you the happiest with the knowledge that I will always love and support you.

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NOMENCLATURE

ACEND	Accreditation Council for Education in Nutrition and Dietetics
AND	Academy of Nutrition and Dietetics
ANOVA	Analysis of Variance
CDC	Centers for Disease Control and Prevention
CDR	Commission on Dietetic Registration
CEU	Continuing Education Unit
CP	Coordinated Program in Dietetics
CPDC	Current Preceptor Desire to Continue
CPND	Current Preceptor No Desire to Continue
CPE	Continuing Professional Education
DI	Dietetic Intern
DTR	Dietetic Technician, Registered
DPD	Didactic Program in Dietetics
EAL	Evidence Analysis Library
EMR	Electronic Medical Record
FPD	Former Preceptor Desire to Continue
FPND	Former Preceptor No Desire to Continue
IRB	Institutional Review Board
LTC	Long-Term Care
NCM	Nutrition Care Manual
NC-SARA	National Council for State Authorization Reciprocity Agreements
NPD	Non-Preceptor Desire to Become a Preceptor
NPND	Non-Preceptor No Desire to Precept

OSFG	Online Synchronous Focus Group
OT	Over-Time
PES	Problem/Etiology/Signs and Symptoms – Nutrition Diagnosis Statement
PTO	Paid Time Off
RD	Registered Dietitian
SPSS	Statistical Package for the Social Sciences

ACKNOWLEDGMENTS

I would first like to acknowledge my dissertation committee, Ximena Suarez-Sousa, Kris Vossler, John Carbone, and Pamela Yang. Ximena, this dissertation would not have been possible without your support and dedication as my dissertation chair. Thank you from the bottom of my heart. I will never forget your encouragement and dedication. John, you graciously served as the outside scholar on my dissertation committee, as well as having served as my thesis advisor for my Master's in Human Nutrition degree. Your commitment to my continued education and the field of nutrition is a testament to the support and networking that is present within online programs.

Second, I would like to thank the pilot group members who reviewed the questionnaire and focus group questions. My work is better due to your input and suggestions.

Third, I would like to acknowledge the very first advisor that guided me along my educational path, Sharon Stewart. Who would have thought that the shy community college student would one day try to follow in your footsteps? Thank you for being such a great role model. If I can be for one student what you have been to me, my professional life will have been a success.

Lastly, I would like to acknowledge my Registered Dietitian friends. Alexa, Kelly Jo, Sondra, and Amanda, thank you for the cheerleading and support when I needed it most. I'm so lucky that my choice in profession led me to life-long friends.

ABSTRACT

The purpose of this pragmatic mixed-methods study was to identify the factors that impact a nutrition professional's preceptorship decision and potential solutions to combat preceptor shortages within accredited nutrition and dietetics programs. Homan's social exchange theory provided the theoretical framework that if perceived costs of preceptorship outweigh the perceived benefits, then the activity will cease.

Phase one of the study included an online mixed-methods questionnaire. Phase two included a qualitative focus group and interview with self-identified volunteers from phase one. Quantitative analysis through SPSS included descriptive statistics (means and standard deviations) and inferential statistics (one-way ANOVA). Qualitative data for both phases were iteratively analyzed to determine themes which were used to supplement the quantitative data from the questionnaire.

The majority of respondents were White women, which aligns with the profession's demographics. The main factors impacting the preceptorship decision were the self-identified desire to precept, age, serving as preceptor over the past year, awareness of available supports, openness to hosting online students, and employment status. The main challenges included time, setting, expectations, altruism, appreciation, preceptor competency, employer requirements, lack of incentives, insufficient space/support, lack of technology/references, and skills of the preceptor and student. Identified solutions included updated accreditation resources, support from employers, incentives, access to institutional databases, establishment of an ideal preceptor to student ratio, and a dietetic technician to registered dietitian pathway.

Limitations included self-selection for both phases of the study, there was a lack of diversity among the respondents, and it is unknown if membership to the Academy of Nutrition

and Dietetics impacted the decision to precept. Recommendations for future study include questioning how Academy membership affects preceptorship decisions. Also, seeking input from people of color and men or nonbinary nutrition professionals to promote a more diverse understanding of the challenges and perceived solutions associated with being a preceptor.

Keywords: Preceptor, Nutrition, Dietetics, ACEND, Dietitian, Dietetic Technician

CHAPTER 1. INTRODUCTION

Introduction

Nutrition plays an important role in the health and wellness of a population. According to the Institute of Medicine (2012), two-thirds of adults and one-third of children in the United States are overweight or obese. Furthermore, according to the Centers for Disease Control and Prevention (CDC, 2017b), nutrition plays a role in five of the top ten causes of death within the United States: heart disease, cancer, stroke, diabetes, and kidney disease.

The Academy of Nutrition and Dietetics (2019) noted that there is only one Registered Dietitian (RD) or Dietetic Technician, Registered (DTR) for every 3,610 people in the United States. Further, in comparing the availability for the RD and DTR to other professions utilizing information from the U.S. Bureau of Labor Statistics in 2010, the Academy of Nutrition and Dietetics (2019) stated there is 1 physician assistant, 3 pharmacists, and 33 nurses per each RD or DTR.

The CDC's most current statistics show that 42.4% of adults and 18.5% of children aged 2-19 years are obese (CDC, 2017a; CDC, 2020a). Hales and associates (2020) report an upward annual increase in the obesity rates for both children and adults. This is concerning because obesity-related conditions include type 2 diabetes, stroke, certain cancers, and heart disease. Moreover, in 2008 the obesity-related illnesses were estimated to cost $147 billion dollars annually (CDC, 2020b). The necessity and demand for the RD and DTR is evident. If there are not enough credentialed RDs and DTRs, the public who seek nutritional guidance is potentially at risk for non-evidence-based wellness nutrition education and medical nutrition therapy that is provided by healthcare professionals that do not have equitable nutrition education and skills.

RDs and DTRs are nutrition experts equipped with the knowledge and skills to provide health promotion and disease prevention counseling for healthy populations, and medical nutrition counseling for those suffering with the aforementioned diseases and other nutrition-related complications. RDs and DTRs can also play a critical role in promoting healthy measures that can prevent these diseases from developing (Slawson, Fitzgerald, & Morgan, 2013).

The Commission on Dietetic Registration (CDR) permits the usage "Registered Dietitian Nutrition (RDN)" and "Registered Dietitian (RD)" interchangeably (Commission on Dietetic Registration, 2020e), as well as the choice to utilize "Nutrition and Dietetic Technician, Registered (NDTR) or "Dietetic Technician, Registered (DTR) (Commission on Dietetic Registration, 2020c). The credential titles of Registered Dietitian (RD) and Dietetic Technician, Registered (DTR) will be utilized throughout this document.

To be eligible to take the registration exam through the Commission on Dietetic Registration (CDR) to become an RD or DTR, a nutrition and dietetics student must complete both didactic and supervised practice educational components within an Accreditation Council for Education in Nutrition and Dietetics (ACEND) accredited program (Academy of Nutrition and Dietetics, 2019d, Academy of Nutrition and Dietetics, 2019a). The didactic experience would provide the "book knowledge" regarding the science of nutrition and dietetics.

Dietetic Technician programs generally require science classes such as chemistry, anatomy, biology, physiology, and food science. Additionally, courses related to mathematics, oral and written communication, management, legislation, and nutritional therapy (See Appendix A) (Accreditation Council for Education in Nutrition and Dietetics, 2016b).

Coordinated bachelor's degree programs typically require the basic science courses that are associated with the dietetic technician degree. Additionally, they require higher level science

coursework such as organic and inorganic chemistry, biochemistry, anatomy, physiology, genetics, microbiology, pharmacology, nutrient metabolism, food science, and research. Additionally, classes in legislation, billing, management, counseling, and communication are required (See Appendix B) (Accreditation Council for Education in Nutrition and Dietetics, 2016c).

The supervised practice component of ACEND accredited nutrition and dietetics programs would allow students to practice their knowledge and further develop their competencies and skills under the preceptorship of an experienced nutrition professional. Supervised practice occurs in concurrence with didactic courses within the dietetic technician and coordinated bachelor's programs (Accreditation Council for Education in Nutrition and Dietetics, 2016b, 2016c). Didactic bachelor's degree programs do not include a supervised practice component. Graduates of didactic programs compete for post-graduation internship programs (Accreditation Council for Education in Nutrition and Dietetics, 2016d).

Supervised practice is a critical component to ensure the nutrition and dietetics competency of program graduates. Dr. Evelyn Crayton (2016), past president of the Academy of Nutrition and Dietetics, stated "One of the most pressing issues facing our Academy and our profession is the shortage of internships… we need preceptors to work with potential interns" (p. 561). ACEND has defined preceptor as "a practitioner who serves as faculty for students/interns during supervised practice by overseeing practical experiences, providing one-on-one training, and modeling professional behaviors and values (Commission on Dietetic Registration, 2020, p. 1)". The majority of preceptors working within the field of nutrition volunteer their time as an added duty within their place of employment to provide supervised practice experiences to nutrition and dietetics students. This added responsibility is not necessarily reflected in the

preceptor's wages and is often viewed as a service to the profession in lieu of personal financial gain.

ACEND has determined accreditation standards for nutrition and dietetics programs. ACEND representatives perform on-site program accreditation visits every seven years at minimum (ACEND, 2010). CDR is the credentialing body that permits graduates of ACEND accredited nutrition and dietetics programs, who have met all accreditation requirements, to take the national exams for the Registered Dietitian (RD) and Dietetic Technician, Registered (DTR) credentials. The graduate must obtain CDR credentialing in order to practice nutrition as a RD or DTR. The CDR exam assesses the graduate's ability to practice nutrition at an entry level through weighted question content areas and domains (See Table 1) (Commission on Dietetic Registration, 2017c, 2017b).

Table 1

Commission on Dietetic Registration Exam Domain Weighted Content Areas

DTR Exam	**Weight**
Domain 1: Nutrition Science and Care for Individuals and Groups	44%
A. Principles of basic and normal nutrition	
B. Screening and assessment	
C. Planning and intervention	
D. Monitoring and evaluation	
Domain 2: Food Science and Food Service	24%
A. Menu development	
B. Procurement and supply management	
C. Food production, distribution, and science	
D. Sanitation, safety, facility and equipment	
Domain 3: Management of Food and Nutrition Services	32%
A. Human resources	
B. Finance and materials	
C. Marketing products and services	
D. Management principles and functions	
E. Quality processes and research	

RD Exam	**Weight**
Domain 1: Principles of Dietetics A. Food science and nutrient composition of foods B. Nutrition and supporting sciences C. Education, communication and technology D. Research applications	25%
Domain 2: Nutrition Care for Individuals and Groups A. Screening and assessment B. Diagnosis C. Planning and intervention D. Monitoring and evaluation	40%
Domain 3: Management of Food and Nutrition Programs and Services A. Functions of management B. Human resources C. Financial management D. Marketing and public relations E. Quality management and improvement	21%
Domain 4: Foodservice Systems A. Menu development B. Procurement, production, distribution, and service C. Sanitation and safety D. Equipment and facility planning	14%

The supervised practice experience is an important step in the process of assuring students have practice with entry-level tasks which will prepare them for the registration exam. Both the DTR and RD registration exams are developed through a ten-step process between the CDR and Pearson Vue. Pearson Vue is a credentialing test developer and provider that is located in Minneapolis, Minnesota. They offer computer-based professional credentialing test services around the globe for over 450 different professions, RDs and DTRs included (Pearson Vue, 2020).

The exam development steps include the CDR and Pearson Vue conducting a dietetic practice audit, establishing examination specifications, examination development, new examination item review, item pool review, examination item processing, examination

administration, passing score determination, score reporting, and program evaluation. The cyclical process is aided by workgroups of volunteers within the field of nutrition and dietetics including, but not limited to, the development and review of test questions, and through the review and rework of poorly performing test questions (Commission on Dietetic Registration, 2020a). In addition to successfully passing the CDR entrance exam to become an RD or DTR, some states also require licensure to practice nutrition (See Appendix C).

Most ACEND accredited programs require an aspect of supervised practice that allows students to practice, under the supervision of a credentialed and experienced nutrition practitioner, the knowledge and skills they developed through the curricular content at their respective institutions of higher education. Supervised practice is typically spent in the areas of clinical nutrition such as long-term care facilities, hospitals, dialysis units, and clinics; community nutrition such as supermarkets, health clubs; government-funded programs such as Women Infants and Children and Meals on Wheels; and foodservice management within long-term care, hospitals, jails, and schools. The supervised practice components include interacting with patients, clients, interdisciplinary teams, and foodservice department staff. The experience usually begins with site orientation for the student, the student shadowing the preceptor, the preceptor observing the student complete tasks, and the student working independently once ACEND competencies have been met per the preceptor's discretion and program rubrics.

This process takes place over the course of a minimum of 450 hours for the DTR and 1,200 hours for the RD (Accreditation Council for Education in Nutrition and Dietetics, 2016b, 2016c, 2016d, 2016e). If conducting the hours at a full-time rate of eight hours per day and five days per week, the supervised practice would require about 56 days (approximately 11 weeks) for the students pursuing the DTR credential, and 150 days (30 weeks) for students pursuing the

RD credential. The schedule is arranged between the student and preceptor to account for days that the preceptor will not be available and adjusting for facility schedules regarding nutrition and dietetics coverages over weekdays and weekends, resulting in a longer calendar commitment.

There are three pathways for eligibility to take the RD exam. The first is didactic bachelor's level dietitian programs that require an external internship of a minimum of 1,200 supervised practice hours after program completion (Accreditation Council for Education in Nutrition and Dietetics, 2016d). Second, the coordinated bachelor's level dietitian programs that have a minimum of 1,200 hours of supervised practice built into the program along with the didactic coursework (Accreditation Council for Education in Nutrition and Dietetics, 2016c). Lastly, the master's level dietitian programs that can either be coordinated or didactic in nature; the didactic programs would still require the external internship of 1,200 hours (Accreditation Council for Education in Nutrition and Dietetics, 2016a).

Next, there are two educational pathways for eligibility to take the DTR exam. First, the associate's degree that requires a minimum of 450 supervised practice hours. Next, the bachelor's level didactic dietetic programs which do not require supervised practice hours in order to take the dietetic technician registration exam (Accreditation Council for Education in Nutrition and Dietetics, 2016b). ACEND (2016b) allows up to 300 hours of simulation or case study to count towards the required 1,200 mandatory supervised practice hours for the registered dietitian degree options, and up to 100 hours for the dietetic technician associate's degree option.

Because of the aforementioned requirements for graduation, preceptors become a very important piece within the nutrition and dietetics profession. Without nutrition and dietetics professionals' willingness to perform preceptor duties, students would not meet national

accreditation standards and would not be eligible to take their registration exams. If students are unable to take their registration exam, then there will be fewer nutrition and dietetics professionals available to meet industry needs.

Past president of the Academy of Nutrition and Dietetics, Sonja L. Connor (2015), stated "A significant challenge in meeting market demand for RDs is that demand for supervised practice spots (5,140 in 2014) far exceeds the number of available spots (2,836 in 2014)" (p. 11). Therefore, about half of all graduates of didactic degree programs are not able to earn the supervised practice required to take the RD exam because of the lack of available "spots" for them to meet their supervised practice requirements. This makes earning a "spot" or "seat" with an internship a very competitive process due to the lack of nutrition professionals who are filling the role of preceptor.

Due to this shortage of preceptors, those unmatched didactic program graduates are then unable to take the RD exam despite completing the didactic coursework. They would have a degree, but they would not be eligible to take the registration exam to use the RD practice credential. To help combat the shortage of preceptors and the unmatched didactic graduate dilemma, ACEND (2019a) placed a moratorium in 2009 on new didactic programs and allowed unmatched didactic program graduates to take the dietetic technician exam. However, the ACEND board voted to rescind the moratorium for new didactic programs as of September of 2020 (Accreditation Council for Education in Nutrition and Dietetics, 2020).

Coordinated bachelor's and associate's level dietetic technician programs both have built-in supervised practice experiences, but program directors are also feeling the push to fill preceptor requirements to meet accreditation and student needs. The challenge of finding preceptors increases even further with online accredited programs where students need to

identify their own supervised practice sites in an area that may already be saturated with campus-based programs.

Brief Literature Review

According to the literature, there are many reasons why preceptors are willing to fulfill the role of supervisors to students. Some of these factors include free continuing education units, increased job satisfaction, maintenance of clinical skills, and altruism (Nasser et al., 2019; Winham et al., 2014; Payakachat et al., 2011, & Arnold et al., 2016). Barriers to performing preceptor duties include limited time, lack of preparation, stress, and decreased job productivity (Nasser et al., 2019; Fogarty et al., 2001; Fisher & O'Sullivan Maillet, 2017).

Nasser et al. (2011) explained the dietetic preceptor as a role model who has the task of, "socializing interns into the workplace, and supporting them in their acquisition of the three learning domains: knowledge (knowing), skills (doing); and attitudes (including feelings, emotions, and behaviors)" (p. 147). This is a lot of responsibility for a non-paid and volunteer role. Nasser et al. (2011) surveyed dietetic preceptors and identified the following barriers to performing nutrition and dietetics preceptor duties: human resource barriers including limited coverage of preceptor's job duties when they are spending time with their student; organizational barriers including the cost and time of working with students; and training barriers including lack of preparation and support for preceptors.

Winham et al. (2014) identified preceptors favored free continuing education units over money for serving as a preceptor. In preceptor research within other allied health professionals, Payakachat et al. (2011) found that pharmacists who perform preceptor duties have higher job satisfaction than pharmacists who have never performed preceptor duties. Also, pharmacists who

were preceptors reported their preceptor duties helped them to maintain their clinical skills. This could also be relevant to the field of nutrition and dietetics.

Arnold et al. (2016) utilized an online survey of registered dietitian participants to determine barriers, rewards, and benefits for being a preceptor. They identified nutrition and dietetics preceptors valued satisfaction and altruism as their main reasons to perform preceptor duties. Time limitations was the main barrier found, coupled with an increased stress levels within female respondents. A limitation of this study was that of the 1,550 participants, 96.1% were female which can make gender-based differences difficult to discern. Of the participants, 70.8% had served or were currently serving as a preceptor.

Fogarty et al. (2001) surveyed 36 preceptors and found the preceptors thought working with interns was a privilege, however it was stressful and time consuming. Their findings correspond with Arnold et al. (2016) in that inadequate time to complete their employment duties in addition to preceptor duties, and increased stress were identified as barriers to fulfilling preceptor duties. In addition, Fisher and O'Sullivan Maillet (2017) further corroborated the preceptors' perceived decrease in their job productivity, or "time," as a reason to not serve in that capacity.

Another study conducted by Fischer et al. (2006) interviewed 29 nutrition and dietetics preceptors and identified the following needs to help them succeed: specific objectives for the rotations, faculty expectations of the preceptor, teaching methods to utilize to promote critical thinking, networking with other preceptors, and having information about the intern and their goals prior to starting the supervised practice experience. Arnold et al. (2016) also identified the lack of appreciation, past negative experiences, and a lack of support were barriers that deter nutrition and dietetic professionals from serving in a preceptor role. In their study, Moelter et al.

(2017), the authors administered an electronic survey with 202 respondents from a pool of dietetic internship program directors, preceptors, as well as the ACEND board, staff, and review members and found preceptors felt there was a lack of training from the program director or course instructor prior to working with the intern. They concluded that preceptor training should be continuous or ongoing in order to retain and effectively recruit preceptors.

The CDR has been working on recruiting eligible RDs and Dietetic Technicians, Registered (DTRs) to fill preceptor roles. A few implemented strategies for recruitment include offering eight free continuing education hours for training in how to be an effective preceptor, the development of a preceptor registry, and announcing the month of April as National Preceptor Month (Bergman, 2013). A recent "perk" for RDs and DTRs who perform preceptor duties was the 2017 CDR implementation of three continuing education units per year. This allows for the potential total of 15 free continuing education credits per five-year recertification cycle. ACEND accredited program directors provide verification that preceptor duties occurred (Commission on Dietetic Registration, 2017a). This is an attractive option because the CDR requires a minimum of 75 continuing education units for RDs and 50 continuing education units for DTRs per five-year certification cycle (Commission on Dietetic Registration, 2020b).

As of April 30, 2019, the national preceptor registry had 1,466 registered preceptors per the senior manager of education program accreditation at ACEND (L. Bozich, personal communication, April 30, 2019). According to ACEND (2019), in 2019 there were 647 students currently enrolled in 31 dietetic technician programs, 11,924 students enrolled in 213 didactic bachelor's degree programs, 2,289 students enrolled in 62 coordinated bachelor's programs, and 4,065 students enrolled in 261 internship programs. This illustrates the incredible need for

additional preceptors to come forward and provide supervised practice to nutrition and dietetics students, or an overhaul of the entire supervised practice requirement.

Statement of the Problem

Supervised practice is an accreditation requirement for ACEND accredited nutrition and dietetics programs. To be eligible to take the DTR exam, a graduate would need to have an associate's degree which requires a minimum of 450 hours of supervised practice, or be a graduate of a didactic bachelor's degree without supervised practice (Accreditation Council for Education in Nutrition and Dietetics [ACEND-DT], 2016). To be eligible for the RD exam, a graduate would need to have a bachelor's didactic degree and complete a minimum of 1,200 supervised practice hours with an external internship program (Accreditation Council for Education in Nutrition and Dietetics, 2016d, 2016e); or be a graduate of a coordinated program bachelor's degree option that requires a minimum of 1,200 supervised practice hours that are built into the program (Accreditation Council for Education in Nutrition and Dietetics, 2016c). Lastly, there is accreditation for international dietetics education that also would require a minimum of 1,200 supervised practice hours to be eligible to take the RD exam (Accreditation Council for Education in Nutrition and Dietetics, 2016a). To add to the confusion, by the year 2024 all students who wish to take the RD exam will also be required to hold a master's degree.

With a minimum supervised practice hour requirement of 450 hours for the dietetic technician registration exam and 1,200 hours for the registered dietitian exam, the importance of preceptor retention and recruitment is evident. There is not an established educational standard for the number of students a nutrition and dietetics preceptor can have at a given time. However, the National Council for State Authorization Reciprocity Agreements (NC-SARA) limits the number of students attending a supervised practice site to no more than ten at a time (National

Council for State Authorization Reciprocity Agreements, 2020). The required time and responsibilities associated with being a preceptor are limiting factors for each individual preceptor to evaluate before taking on additional students.

Escott-Stump (2012, p. 213), past-president of the Academy of Nutrition and Dietetics, stated "Every time you volunteer, you make new friends and gain leadership skills… serve as a preceptor for students or mentor to a new RD or DTR. No matter what the role, you can make a difference!" Further, Bergman (2013) stated "It is great to see the leaders of today's profession helping create the leaders of tomorrow (p. 493)." Despite Academy efforts to encourage preceptorship, there has been an undertone of frustration regarding the lack of available preceptors that are willing to volunteer their time to provide supervised practice to nutrition and dietetics students.

As mentioned, in 2009, the Commission on Dietetic Registration (CDR, 2019), the credentialing body for the DTR and RD exams, developed a pathway for graduates of the didactic programs who were unmatched for an internship/supervised practice that allowed them to take the DTR exam (Stein & Rops, 2017). Hence, the aforementioned bachelor's level didactic program as a pathway to take the DTR exam. Furthermore, according to the most recent, unpublished, internal statistics report from the CDR, the ten-year DTR pass-rate for first-time test takes is 64% for the traditional associate's degree with supervised practice and 51% for the added unmatched didactic graduate without supervised practice (K. Manger-Hague, personal communication, March 11, 2020) (See Appendix G). This could potentially show a strong correlation between supervised practice and registration exam results. This could also demonstrate that the unmatched supervised practice candidates were not as academically strong which resulted in the lower pass rate.

Per CDR's director of credentialing operations, it is noted that despite the difference in results over the past 10 years, the 2019 results show a pass-rate of 63% for the traditional associate's degree route with supervised practice, and 65% for the unmatched bachelor's degree without supervised practice (K. Manger-Hague, personal communication, March 11, 2020) (See Appendix G). Despite this additional pathway to a credential, the profession still suffers from a lack of preceptors which it is threatening the profession of nutrition and dietetics.

Purpose of the Study

There is a critical lack of preceptors who are willing to host the required supervised practice for nutrition and dietetics students. To compound this issue, CareerWise (2019a, 2019b), the career and education resource utilized by Minnesota State Colleges and Universities, employment forecasts a nation-wide demand growth of 9.3% for the DTR and 14.6% demand growth for the RD by 2028. Recruiting and retaining preceptors is a very important component of the program director's leadership duties. Without preceptors, the students in most of the nutrition and dietetics pathways will not be able to complete program requirements, and hence, not be able to take their credentialing exam. This affects the program's graduation and employment rates, which affects the overall college or university's success. It also affects the profession's ability to meet the needs of the population they serve.

This study aims to question practicing RDs and DTRs to explore factors that affect their willingness to perform preceptor duties, their satisfaction in performing those duties, and perceived barriers and solutions to preceptorship. An online questionnaire will be utilized to identify what factors preceptors and potential preceptors identify as the most useful to help them either continue being a preceptor or to precept a student for the first time. This information would be beneficial to the profession of nutrition and dietetics.

In addition, establishing reasons that prevent nutrition and dietetics professionals from becoming, or continuing to be, a preceptor could be vital in combating preceptor shortages. The resulting data could help program directors hone their preceptor orientation to encourage recruitment and retention, establish perceived best practices for preceptor to student ratios, and identify possible areas for further research regarding nutrition and dietetics professionals and supervised practice requirements.

A series of focus groups will be conducted with the goal to dig deeper into nutrition and dietetics professionals' perceptions regarding preceptorship. This will provide a qualitative view for the mostly quantitative data that will be gathered through the online survey.

Research Questions

RQ1: What factors impact the nutrition and dietetics professionals' willingness and satisfaction in providing supervised practice experience as preceptors in ACEND accredited programs?

Definition of Variables

Variable A: Nutrition and Dietetics Professional

Constitutive Definition: Individuals who are actively credentialed as a registered dietitian (RD) or dietetic technician, registered (DTR).

Operational Definition: An online questionnaire was designed. The first item on the questionnaire will confirm the participant is nutrition and dietetics professional (See item Q1.1 on Appendix H).

Variable B: Preceptor.

Constitutive Definition: ACEND defined preceptor as "a practitioner who serves as faculty for students/interns during supervised practice by overseeing practical

experiences, providing one-on-one training, and modeling professional behaviors and values" (Commission on Dietetic Registration, 2020d, p. 1).

Operational Definition: Item number two on the online questionnaire will gather information about preceptor status (See item Q2.13 on Appendix H).

Variable C: Willingness

Constitutive Definition: The intention to provide mentorship services currently and in the future (Ragins & Scandura, 1999).

Operational Definition: In addition to the online questionnaire development, an online synchronous focus group script was developed. Item number three on the online questionnaire, and item number one on the online synchronous focus group, will gather information on willingness to precept. (See items Q3.2.1 – Q3.2.11, Q6.9 and 6.12 on Appendix H, and item 1 on Appendix I).

Variable D: Satisfaction

Constitutive Definition: Happiness with one's work life (Payakachat, Ounpraseuth, Ragland, & Murawski, 2011).

Operational Definition: Item number four on the online questionnaire, and item number two on the online synchronous focus group, will gather information on satisfaction (See items Q4.2.1 – Q4.2.11 on Appendix H, and item 2 on Appendix I).

Variable E: Factors

Constitutive Definition: The items that impact decisions regarding preceptorship (Payakachat, Ounpraseuth, Ragland, & Murawski, 2011)

Operational Definition: Item number five on the online questionnaire will gather information on the factors that impact the decision to be a preceptor (See items Q5.2.1 – 5.2.7 and Q5.3.1 – Q5.3.8 on Appendix H).

Variable F: Challenges

Constitutive Definition: Obstacles that impair or prevent the completion of a task (Ragins & Cotton, 1993).

Operational Definition: Item number six on the online questionnaire, and item number three on the online synchronous focus group, will gather information regarding the perceived challenges associated with being a preceptor (See items Q6.2 – Q6.4 on Appendix H, and item 3 on Appendix I).

Variable G: Demographics

Constitutive Definition: Characteristics about a participant's background (Fraenkel, Wallen, & Hyun, 2015)

Operational Definition: Item number seven on the online questionnaire will gather background information on the study's participants (See items Q2.2 – Q2.12, Q2.14 – Q2.15, Q6.7 – Q6.8, and Q6.10- Q6.11 on Appendix H).

RQ2: What solutions do nutrition and dietetics professionals identify to combat preceptor shortages within ACEND accredited programs?

Definition of Variables

Variable A: Solutions

Constitutive Definition: Potential answers to perceived drawbacks associated with the role of the preceptor (Winham, et al., 2014).

Operational Definition: Item number eight on the online questionnaire, and item number four on the online synchronous focus group, will gather perceived solutions to potential challenges associated with the role of the preceptor (See items Q6.5 – Q6.6 on Appendix H, and items 4-5 on Appendix I).

Significance of the Study

This topic is significant because preceptors directly impact the future of the profession of nutrition and dietetics. Without enough preceptors to meet accreditation requirements programs will close and students will not be able to meet their educational goals. This, in turn, can affect the public's access to qualified nutrition and dietetics professionals. I have had the opportunity to converse via email with the Executive Director of Education and Accreditation, Dr. Rayane AbuSabha, at the Academy of Nutrition and Dietetics, to discuss the attractiveness of this study. Dr. AbuSabha has stated this research is necessary. She also encouraged the publication of the information once the dissertation process is complete. She encouraged applying to present the information at the annual national Food and Nutrition Convention and Expo (FNCE) as well as the regional Nutrition and Dietetics Educators and Preceptors (NDEP) practice group's annual meeting. Support regarding this topic of interest provided by the head of education within the profession's organization has provided assurance that the topic is valuable to the entire nutrition and dietetics profession and not just to my own studies.

Permission and IRB Approval

In order to conduct this study, the researcher received National Institutes of Health "protecting human research participants" training and MSUM's Institutional Review Board (IRB) approval to ensure the ethical conduct of research involving human subjects (See Appendix D and E) (Mills & Gay, 2019).

Informed Consent

Human subjects participating in research will be protected. Participants will be aware that this study is conducted as part of the researcher's Doctoral Degree Program and that it will benefit teaching practice. Informed consent means that the participants have been fully informed of the purpose and procedures of the study for which consent is sought and that they understand and agree, in writing, to their participation in the study (Rothstein & Johnson, 2014). Confidentiality will be protected through the use of pseudonyms (e.g., Participant 1) without the utilization of any identifying information. The choice to participate or withdraw in the online questionnaire and/or the online focus group at any time will be outlined both verbally and in writing (See Appendix F).

Limitations

According to Fraenkel and associates (2015), an advantage to internet-based survey research is being able to reach potential participants that would have been harder to gain access to in non-electronic surveys. It is also cost effective because surveys do not need to be physically mailed and there are no long-distance fees as with telephone surveys. However, limitations to internet-based survey research include participants self-selection to contribute to the survey for reasons that may not be obtained by the researcher. This can limit the generalizability of the results because they may not be applicable to all nutrition and dietetics preceptors. Another limitation is lower response rates and data that are entered too hastily which may result in invalid data. To combat this potential limitation, a progress bar will be visible throughout the electronic questionnaire to allow participants to know where they are in the process of completion. The expected completion time will be also listed prior to the start of the questionnaire to help participants gauge their availability.

A focus group is defined as “a small group of people, guided by a group leader, assembled to discuss an issue or topic in depth” (Spaulding, 2014, p. 28). They are usually composed of four to eight people who are present and add their thoughts to the interview. Often participants will expand upon other participant’s statements. The goal of a focus group is to understand what people think about the particular topic. The sessions are video recorded and typically last one to two hours and cover up to six core questions (Fraenkel, Wallen, & Hyun, 2015).

This study will utilize a mixed methods concurrent triangulation design. The mixed-methods design will incorporate both quantitative and qualitative research components. The concurrent triangulation design will progress through both phases of this study being conducted within a short timeframe, with phase two qualitative data clarifying the online questionnaire findings. This will provide well-rounded results that reflect the perceptions of each preceptor status subgroup of the nutrition and dietetics professional participants.

Online synchronous focus groups (OSFG) occur much like in-person focus groups. OSFG are real-time and participants join via an electronic platform. For this study, Zoom software will be utilized. Benefits to OSFG include the elimination of the need to travel, participants can join from the comfort of their office or home, increased diversity of focus group participants, and the software will record the session. Limitations include technological skills of participants, required equipment such as a laptop or smartphone, decreased internet connection speeds, and the need for manual transcription (Lobe, 2017). To combat limitations within the OSFG, an introductory email will explain the technology and skill requirement. Participants will be provided with an optional opportunity to have a “practice run” with the researcher to ensure

their connection is working and to appease any technological anxieties that the participants may have.

Conclusions

Bergman (2013) stated “Perhaps the best way each of us can show our gratitude to the practitioners who prepared us is by becoming preceptors ourselves” (p. 493). One way nutrition and dietetics program directors could potentially increase the pool of preceptors available to students and help ensure the experience is beneficial to both the preceptor and the student, is to make sure preceptors are provided with the tools and support they need to succeed.

This chapter provided an introduction and background regarding the shortage of preceptors to fill the required supervised practice needs of nutrition and dietetics students within ACEND accredited programs. A mixed-methods approach will be utilized through the implementation of an online questionnaire and online synchronous focus groups. Research questions will explore the factors that impact the nutrition and dietetics professional in providing supervised practice experience as preceptors in ACEND accredited programs, and what solutions nutrition and dietetics professionals identify to combat preceptor shortages within ACEND accredited programs. Chapter two will provide a literature review into aspects of willingness, satisfaction and recruitment. Also, the study’s theoretical framework will be detailed.

CHAPTER 2. LITERATURE REVIEW

Introduction

Registered Dietitians (RDs) and Dietetic Technicians, Registered (DTRs) are nutrition experts who are equipped with the knowledge and skills to promote healthy lifestyles and lessen the effects of chronic illnesses through diet counseling and education. DTRs require a minimum of an associate's degree and 450 hours of supervised practice or a bachelor's degree without supervised practice. RDs require a minimum of a bachelor's degree with 1,200 hours of supervised practice built into their program (i.e., coordinated program), or a bachelor's degree (i.e., didactic program) with an external internship of 1,200 hours; followed by a national registration exam that is implemented by the Commission on Dietetic Registration.

The supervised practice experience relies on nutrition professionals in the field to volunteer their expertise as supervised practice preceptors. When operating in the preceptor role, nutrition professionals assure competencies that are introduced in the didactic portion of the nutrition and dietetics degree programs are met and integrated into practice within the safe environment of a supervisor/advisee collaborative relationship (Gelabert-Vilella, et al., 2014). Currently, there is a shortage of available preceptors which is causing roadblocks for nutrition and dietetics students to meet their education requirements.

According to the Academy of Nutrition and Dietetics (2018), in 2018 there were a total of 19,974 students enrolled in ACEND accredited nutrition and dietetics programs. The Commission on Dietetic Registration (2019), as of July 15, 2019 lists a total of 108,941 individuals within the United States that are registered as either an RD or DTR. This shows that there is not a shortage of nutrition professionals that are able to provide preceptorship to a nutrition and dietetics student. However, there is a shortage of those professionals that are

willing to provide preceptor services. The aim of this study is to determine the factors that contribute to the nutrition and dietetics professional's willingness to be a preceptor and to explore possible solutions to combat preceptor shortage.

Body of the Review

Context

There is limited research regarding preceptorship willingness and satisfaction, within the nutrition and dietetics field. However, there have been numerous studies regarding preceptorship within other allied health fields (e.g., Gelaber-Vilella, et al., 2014, & Payakachat, et al., 2011), as well as workplace mentorship (e.g., Allen & Eby, 2003; Eby, et al., 2010; Eby, et al., 2008; Eby, et al., 2006; & Ragins & Scandura, 1999).

The mentoring relationship was defined by Bear and Hwang (2016) as "a more experienced individual, the mentor, who helps a less experienced individual, the *protégé*, in furthering the *protégé's* progress in an organization" (p. 82). For the purpose of this literature review, mentoring and *protégé* research will be considered and inferences will be made regarding the applicability to the preceptorship and student within the nutrition and dietetics field.

Willingness

Dotson and Bian (2013) explored the perceived values and benefits to mentoring within the library sciences profession via survey research. Important themes established from their data were the importance of technology skills, collaboration and communication skills, direct contact with the mentor, adequate information on how the supervised practice hours were to be spent, time guidelines for consecutive hours spent at the supervised practice site, and positive feedback regarding the supervised practice experience. This could apply to the nutrition and dietetics field

and willingness to perform preceptor duties by ensuring the program director has and communicates clear guidelines for each of the themes. This could potentially ensure preceptors have the support and information they need to succeed in the preceptor role, which could potentially increase their willingness to fill this role again in the future.

A business mentor's willingness to host a *protégé*, as determined by Allen and collaborators (1997), was impacted by the mentoring relationship. They established this through two items on their survey instrument: "before coming to [this university], I had a number of good experiences being mentored" and "I would like to be a mentor to MBAs" (p. 494). They found the most recent mentoring experience impacts willingness to mentor in the future. If there was a poor mentoring relationship, the likelihood of future mentorship was decreased.

Eby and collaborators (2010) utilized a 4-item survey tool by Ragins and Scandura (1994) to measure willingness to mentor in relationship with both good and bad mentoring experiences in university alumni. They found good mentoring experiences were a significantly stronger predictor than bad experiences of willingness to mentor in the future. Mentors, or preceptors, are expected to impart knowledge and support their *protégé*/student. It could behoove the preceptor-student relationship if program directors emphasized the importance of establishing positive supervised practice experiences (i.e., mutually beneficial: *protégé* contributes to mentor's continuing education and shared workload; mentor contributes to *protégé's* growth as a professional) for the continued willingness of preceptors to fulfill this role. This corroborates with a study by Allen and collaborators (1997) in that positive experiences are more likely to equate to continued mentorship in the future.

Ragins and Scandura (1994) developed a survey tool to evaluate mentoring relationships. Willingness to mentor was measured using four statements that were coded on a 7-point Likert

scale, ranging from 1, “Strongly Disagree,” to 7, “Strongly Agree.” The questions included: “I have no desire to mentor; I would like to be a mentor; I intend to be a mentor; and I would be comfortable assuming a mentoring role.” The reliability coefficient alpha was .92. In addition to the Eby and collaborators (2010) study, this tool has been utilized in numerous studies to evaluate an individual’s willingness to mentor. Since mentoring and precepting both involve a more experienced professional providing guidance to a less experienced individual, this measurement tool could be applicable to research in the willingness to be a preceptor.

The four-item willingness to mentor survey questions was again utilized by Ragins and Scandura (1999) to evaluate perceived costs and benefits of being a mentor, and how they affect an individual’s willingness to play this role. They found that individuals without mentoring experience were less willing to be mentors because they felt there were more associated costs than benefits. The associated costs included mentorship taking more time than it is worth, potential for backstabbing resulting in the *protégé’s* replacement of the mentor, poor *protégé* performance can ruin the mentor’s reputation, and the risk of being displaced by the *protégé*. However, individuals who had either mentored before or had been a *protégé* themselves were more willing to be a mentor. More benefits than costs associated in the mentorship role were noted. Benefits included generationality and passing on wisdom, providing a catalyst for innovation, positive recognition, and self-satisfaction.

In their study, Bear and Hwang (2015) also utilized the Ragins and Scandura 4-item survey with 7-point Likert scale to measure motivation and willingness to mentor through the health care industry’s human resource development lens. They found a positive relationship between contextual prosocial motivation (i.e., a professional’s willingness to fulfil a role within the working environment that has benefit to others) and willingness to mentor. There was a

positive relationship between previous experience as a mentor or a mentee and willingness to mentor in the future.

Again, this has the potential to transfer over into the preceptor-student relationship. With a history of being a student who required supervised practice, RDs and DTRs could potentially be more willing to fulfil the preceptor role than individuals who have never received supervised practice. This might be an area of focus in didactic bachelor's programs and students who are not matched with an internship. They could potentially be less likely to perform preceptor duties to future students due to their lack of experiencing supervised practice.

In a subsequent study by Bear and Hwang (2016), the same Ragins and Scandura 4-item survey with 7-point Likert scale to measure willingness to mentor was utilized within a healthcare setting. They found willingness to be a mentor was influenced by perception of support (POS) and organizational-based self-esteem (OBSE); coining these relationships as a *relationship triangle*. OBSE was defined as an individual's self-perceived value which is useful in predicting organizational commitment. Willingness to mentor is affected by the level of organizational commitment that is present. Downsizing was also found to negatively affect POS. Within the healthcare industry, professionals are often tasked with "doing less with more." If downsizing is present, this could affect the POS and OBSE and therefore affect the RD's or DTR's willingness to be a preceptor.

In their study, Eby and associates (2006) utilized the Ragins and Scandura (1994) 4-item survey questions to survey a mentor's willingness to assume the mentorship role in regard to perceptions of management support. They measured perceptions of support for mentoring instead of perceived organizational support (POS) as in the Bear and Hwang (2016) study because they claim it is a mentor-specific measurement. Perceptions of management support for mentoring

was found to have a positive relationship with an individual's willingness to mentor others. Moreover, those working in managerial or administration roles were more likely than technical or paraprofessionals to be willing to perform mentorship duties. This could be an area of focus within the nutrition and dietetics field because all RDs and most DTRs have experienced what it is to be a student within a supervised practice experience. They have been in the "*protégé*" role and have benefited from their preceptor's time and guidance. Therefore, an area of focus highlighting the importance of mentorship within the didactic education of an RD or DTR could potentially increase future RDs and DTRs to fill the preceptor role for future students.

Nutrition and dietetics-specific research identified barriers that affect willingness to be a preceptor include lack of appreciation, negative experiences, and lack of support (Arnold, et al., 2016). RDs and DTRs who had served as preceptors currently and in the past, valued altruism over monetary gains regarding willingness to fulfill the preceptor role. Non-preceptors valued compensation over altruism regarding willingness to fulfill the preceptor role. Considering the Eby et al. (2010) study detailed above, one could take this research a step further and consider how both negative and positive experiences could affect willingness to precept.

Satisfaction and Recruitment

The above-mentioned Ragins and Scandura (1999) study and 4-item willingness tool evaluated the costs and benefits of being a mentor and found people without mentoring experience expected more costs and fewer benefits to be associated with mentoring. Individuals with mentoring experience felt mentors obtain a sense of satisfaction within the mentorship role. *Protégés* were more likely to become mentors, and then as mentors they were more likely to continue in the role. This could be a very important consideration regarding the satisfaction and retention of preceptors in the nutrition and dietetics field. If emphasis is placed on the importance

of the preceptor role before students are exposed to the supervised practice experience, they may be more likely to become mentors once they are credentialed. Once they are preceptors, they may be more likely to remain preceptors based on this study's results.

Allen and Eby (2003) conducted a survey to explore relationship effectiveness for mentors. Perceived benefits mutually accrued to the mentor and *protégé* increased satisfaction within the relationship. This relationship quality was measured with 5 questions and a 5-point Likert scale. Question examples included "I am very satisfied with the mentoring relationship my *protégé* and I developed." Moreover, they found mentors who were reluctantly recruited or coerced into the mentorship role had decreased intrinsic motivation. Intrinsic motivation is when a person is motivated due to enjoyment or desire to do the activity instead of performing the activity due to promise of a reward or fulfilling a work requirement. They state mentoring is complex and multi-faceted and that mentors are also learners. This could translate into satisfaction and recruitment of nutrition and dietetics preceptors in that people who enter into the precepting relationship willingly will be more likely to have a satisfactory experience. Considering the Eby et al. (2010 study), mentors with positive experiences are more likely to continue being a mentor.

Organizational-based self-esteem (OBSE) is the value that a person assigns themselves within their organization, to be important in predicting satisfaction (Bear & Hwang, 2015). Bear and Hwang (2015) found providing feedback, support, and assuring employees have the tools they need are important roles of the supervisor to build up employee OBSE. OBSE was measured on ten survey questions based on prior research in the field. Questions were rated on a 7-point Likert scale and included items such as "I am important around here," and "I make a difference around here." This could be of interest to program directors during the preceptor

recruitment process as a reminder to ensure preceptors associated with their program feel valued. If they feel that they are appreciated, then they are more likely to be satisfied within the preceptor role.

In their study, Chung and Kowalaski (2012) stated job satisfaction had an inverse relationship to job stress within the nursing field. This being so, when stress levels rise, job satisfaction plummets. Job satisfaction was measured utilizing a national survey of post-secondary faculty. Fogarty et al. (2001) found being a preceptor was stressful and time consuming due to the strain of continuously doing more with less. Arnold et al. (2016) found preceptors felt there was inadequate time to complete their work duties in addition to preceptor duties and increased stress were identified as barriers to fulfilling preceptor duties. This highlights the important role perceived stress levels may play in the nutrition and dietetics professionals' desire to be a preceptor.

In a survey of nurses, DeWolfe and collaborators (2010) utilized a Delphi process, which is a consensus-development, through two rounds of questionnaires. This was followed by a focus group activity that aimed to gain further understanding regarding the preceptors' perspective of what is important in recruitment, support, and retention of preceptors. The consensus found personal satisfaction was important for recruitment and retention of preceptors. If professionals' feel they are helping students apply their knowledge, and they receive feedback from students that the experience was beneficial, then their satisfaction within the preceptor role rise. Preceptors also reported increased personal satisfaction when they felt they were contributing to the future of the profession. Females (87.3%) were the majority over males (12.7%) for participants in this study. These results are similar to the current demographics within the nutrition and dietetics profession as of July 15, 2019 with credentialled RD females (86.65%)

being the majority over males (3.76%) with 9.59% preferring not to disclose gender; and with the DTR credential of females (66.95%) also being in the majority over males (4.32%) with 28.72 not reporting gender (Commission on Dietetic Registration, 2019b).

According to DeWolfe and associates (2010), orientation was also important for recruitment and retention of preceptors. Preceptors reported wanting to know what students are expected to do to achieve course outcomes, and how much independence should be granted throughout the experience. Awareness of the student's knowledge and skills gained up to the point of supervised practice was also important. Orientation should also include the responsibilities of the preceptor and the role of the university faculty throughout the supervised practice. It was important to know what support they could expect in their role as a preceptor. Communication was important. They did not want daily communication but felt just-in-time communications via email were the best indicators for preceptor expectations of program communication.

As with previous studies, DeWolfe and collaborators (2010) found balancing the time needed to complete work duties and the time needed to guide students was a challenge (Fogarty et al., 2001; Arnold, et al., 2016). To increase recruitment of preceptors, it was important for program directors to understand their perspective in regard to perceived benefits and costs of fulfilling this role. If preceptors feel they are recognized and supported, they are more likely to be satisfied and continue in the role. If they do not feel supported, they are more likely to be dissatisfied within the role and discontinue their mentorship. It is important to establish an orientation session to fit the needs of the preceptor. The orientation program should contain realistic objectives and be concise and cognizant of time constraints.

Theoretical Framework

Many theories have been utilized in research regarding preceptor or mentor satisfaction, recruitment, and retention. These studies and the theories the researchers employed will be explored in this section. Then, further information will be provided regarding the theoretical framework chosen for this study.

Social learning theory was utilized by Eby, Lockwood, and Butts (2006). This theory states that people learn through the observation of others in their social environment. In their study, the social environment is the workplace. Social learning theory is an imitative learning theory in that appropriate behavior is observed and rewarded. This encourages the learner to conduct the same behaviors. This could apply to nutrition and dietetics professionals who have experienced the supervised practice component of an ACEND accredited program. They learned under a preceptor and were rewarded with the ability to take the registration exam to become credentialed. They could then take the role of the preceptor to aid in the education of the upcoming generation of professionals.

Social information processing theory was also used by Eby, Lockwood, and Butts (2006). In this theory, individuals develop expectations about appropriate behavior based on what they see in their social environment. Appropriate behavior is based on rewards and sanctions. They take cues to proper behaviors from managers and co-workers. This could also apply to mentors.

Bear and Hwang (2015) used the norm of reciprocity theory. This theory states with positive treatment from an employer, employees will exhibit favorable behavior and actions. In other words, employees feel an obligation to help others because they were helped. This could transfer to preceptors. All RDs and most DTRs have experienced supervised practice from the student-*protege* standpoint. Program directors could begin the preceptor recruitment process

while students are still in school. If emphasis is placed on how they are receiving preceptorship in their time of need and that they need to be open to providing preceptorship in the future, then a self-perpetuating cycle of preceptorship could begin.

Stress theory was chosen by Chung and Kowalski (2012). If an individual is not able to cope with their own workplace stressors, then they will be unable to withstand additional stressors. Therefore, if the preceptor's self-defined level of workplace stress is too high, they will not be able to attend to the additional stress of being a preceptor.

Situated cognition theory was employed by Dotson and Bian (2013). This is the perception that learning is established through the activity of shared and purposeful activity. Interns gain experience and practice their competencies and skills under the supervision of trained supervisors, or preceptors. In this theory, students can translate their "book-knowledge" into real-life practice and skills. Combining the didactic coursework learning theory and supervised practice contributes to competent professionals in a particular field of study.

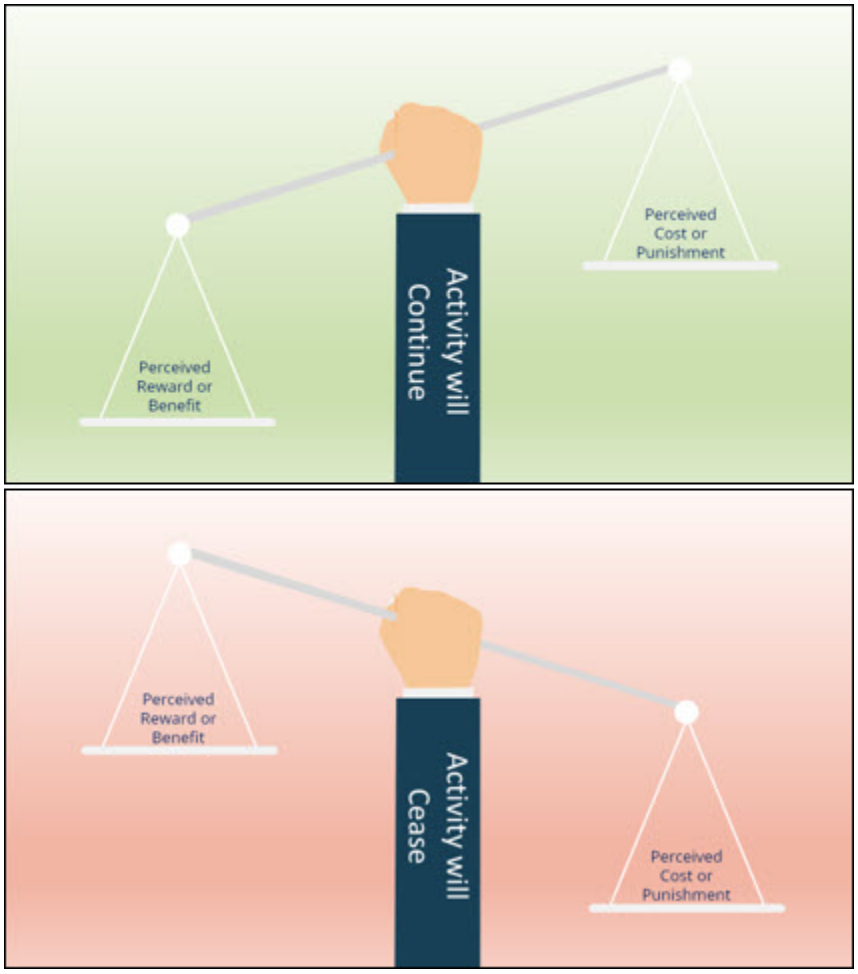
Lastly, Bear and Hwang (2016), and Eby et al. (2008) utilized social exchange theory. Social exchange theory predicts that as costs associated with a relationship increase, then the relationship becomes less viable. Perceived costs associated with the mentoring relationship in their study included time and stress. If a nutrition and dietetics professional perceive the costs of preceptorship outweigh the potential benefits, then they will choose to avoid filling this role. For example, if they perceive that they are spending more time and effort than the student is dedicating to the experience, then the relationship will deteriorate or cease. This will likely contribute to a negative experience and decreased likelihood of continued preceptorship in the future.

The evaluation of common theories employed within current mentorship research resulted in the selection of social exchange theory for this study. The social exchange theory was developed by George C. Homans in 1958 as a way to evaluate if the costs of an exchange outweigh the potential benefits through an economic lens. Through the introduction of the theory, Homans (1958) discussed the visualization of this concept through a pigeon pecking a certain spot of its cage for the reward of corn kernels. He explains the pigeon will continue pecking for the benefit of the corn kernel until the costs outweigh the effort. He explained the cost outweighing the benefit for the pigeon being satiation or fatigue. At this point, the pigeon will cease pecking.

Perceived costs and benefits vary from person to person and from day to day. Some costs identified by Homans (1958) include time, fatigue, interruptions to work, and decreased independence. Conversely, identified benefits include relationship equity (i.e., not putting in more than you receive), approval, and prestige. Homans (1958) stated "Social behavior is an exchange of goods, material goods but also non-material ones, such as the symbols of approval or prestige… This process of influence tends to work out at equilibrium to balance in the exchanges" (p. 606). Stated differently, if the perceived benefit or rewards of an action outweigh the perceived costs or punishment, then the person will continue doing the activity. However, if the opposite is true and the costs outweigh the benefits, the person will cease doing the activity (See Figure 1).

Figure 1

Scales of Costs and Benefits in Social Exchange Theory



Research Questions

RQ1: What factors impact the nutrition and dietetics professional in providing supervised practice experience as preceptors in ACEND accredited programs?

RQ2: What solutions do nutrition and dietetics professionals identify to combat preceptor shortages within ACEND accredited programs?

Conclusions

There is a critical shortage of available nutrition and dietetics preceptors within ACEND accredited programs. One solution to combat the lack of preceptors was to allow graduates of didactic bachelor's programs, who did not meet supervised practice requirements to take the RD credentialing exam, to take the DTR exam. As a result, since this additional eligibility pathway to the DTR credential was established in 2009 there has been a 30% increase in DTR-credentialed nutrition practitioners (Rogers, 2017). However, these practitioners do not have the supervised practice experience of associate's degree-prepared DTRs or bachelor's level RDs. This could be of concern because bachelor's DTRs were not mentored and therefore may be less likely to mentor in the future (Bear & Hwang, 2015).

Program directors need to take into consideration stress levels of preceptors and potential-preceptors regarding recruitment and retention. If a nutrition professional is already overloaded with stress and time constraints, they will be less likely to be able to fulfil the preceptor role for a student (Chung and Kowalski, 2012). Additionally, just-in-time communication as well as effective orientation and support are important for preceptor satisfaction, willingness to continue in the preceptor role (retention), and recruitment (DeWolfe et al., 2010).

The next chapter will include information regarding the study's methodology and research design.

CHAPTER 3. METHODS

Introduction

Registered Dietitians (RDs) and Dietetic Technicians, Registered (DTRs) are nutrition professionals that require didactic and field experience (supervised practice) in order to take their registration exam through the Commission on Dietetic Registration (CDR). One caveat to this statement is the bachelor's prepared didactic program graduates who are unmatched to an internship being allowed to take the registration exam for DTRs without the supervised practice requirement. Supervised practice requires preceptorship from volunteer nutrition professionals who are working in the field of nutrition and dietetics. There is a shortage of available preceptors which is creating roadblocks for eligible nutrition and dietetics students from completing the supervised practice portion of their credentialing requirements. This study will focus on the factors that impact nutrition professionals' willingness to provide preceptorship to eligible nutrition and dietetics students, as well as their perception of satisfaction regarding this role.

Research Questions

RQ1: What factors impact the nutrition and dietetics professional in providing supervised practice experience as preceptors in ACEND accredited programs?

RQ2: What solutions do nutrition and dietetics professionals identify to combat preceptor shortages within ACEND accredited programs?

Research Design

Under the paradigm of pragmatism, a mixed methods concurrent triangulation approach was utilized for this study. Creswell and Creswell (2018) state pragmatism is a worldview that "arises out of actions, situation, and consequences rather than antecedent conditions (as in positivism" (p. 10). Under pragmatism everyone has their version of reality and the truth is what

works best at the time. Pragmatism is compatible with mixed methods because the researcher is gathering both quantitative and qualitative data as they engage in their study. Concurrent triangulation allowed for the qualitative and quantitative data to be collected within a short timeframe without the data from one source being assessed prior to gathering data from the other source. This allowed for triangulation of the mixed methods results to occur which lead to increased validity of the data. It also allowed for broader answers to questions which can lead to a better understanding of the results.

First, an electronic questionnaire was developed and distributed to 5,000 randomly selected Commission on Dietetic Registration members via a distribution list that is available free of charge for graduate-level research students. The questionnaire employed both quantitative and qualitative questions. Examples of quantitative questions as led by the literature included: (a) age; (b) gender; (c) ethnicity; (d) years of experience; (e) full time or part time employment; (f) practice setting; (g) history as a preceptor; (h) education pathway; (i) credentials; (j) Likert scale that rates the willingness or intent to be a preceptor; (k) Likert scale that rates the importance of available support and resources within the workplace regarding students; (l) Likert scale that rates the stress and career satisfaction levels of the nutrition and dietetics professional; (m) Likert scale that rates the importance of program director support; etc.

Examples of qualitative survey questions included: (a) open-ended questions regarding the reasons that impact their decision to be a preceptor; (b) open-ended questions regarding the resources they feel are needed to successfully fill the role; (c) open-ended questions regarding what they feel program directors and employers could do to increase their willingness to be preceptors; (d) what they perceive as an appropriate preceptor to student ratio would be, etc.

The research tool was developed based on the current literature and piloted for readability and navigability by four registered dietitians and one allied health professional (See Appendix J). Based off the feedback, a progress bar was added to the Qualtrics survey tool to allow the participant to gauge where they are in the process of completion and to aid in minimizing survey fatigue. Section headings were added along with definitions of each constitutional variable being measured. Larger text-based answer boxes were added for the qualitative questions within the survey to allow the participant greater flexibility with answering and editing. Question wording was adjusted per pilot participant feedback (See Appendix K).

The survey design was chosen due to the ability to reach a large amount of people across the United States in order to maximize the diversity and generalizability within the study's sample. The email distribution list available through the Academy of Nutrition and Dietetics resulted in a simple random sample. The nutrition and dietetics professionals were voluntary participants and there was no requirement or expectation for them to complete the online questionnaire. They could stop participating in the questionnaire at any time without consequence. There was no perceived risk associated with participating in the online questionnaire.

Then, a series of two online synchronous focus groups (OSFG) was conducted. Each OSFG was allotted one hour and consisted of 4-6 nutrition professionals per Lobe's (2017) best practice recommendations. This provided an opportunity to gain further qualitative data regarding their experiences and attitudes with preceptorship. The design of the two focus groups was selected because it allowed for an opportunity to establish deeper insight into the different groups of nutrition professionals: those who wish to be preceptors and those who do not. Participants were grouped into these two categories within the online questionnaire tool from

Phase 1, which is also linked with the final survey question that asked if they would be interested in participating with the online synchronous focus group in Phase 2.

These qualitative OSFG sessions were utilized to complement and triangulate the data found within the online survey process. This allowed for a more in-depth exploration of the research questions from different angles and allow for greater diversity since participants can join from their geographic location. The focus group employed 5 core questions per Fraenkel, Wallen, and Hyun's (2015) best practice recommendations for utilizing 6 or fewer questions.

The same five individuals who piloted the online questionnaire provided feedback regarding the question order and progression for the online synchronous focus group script (See Appendix J). Question wording and the order of questions was edited to allow for smoother progression regarding question topics (See Appendix L).

Setting

The survey took place virtually through the online questionnaire tool, Qualtrics. An internet connection and computer or smartphone were required to complete the questionnaire. The survey was sent nationally to the 5,000 randomly selected Commission on Dietetic Registration members through their distribution list. Commission on Dietetic Registration members are composed of students, practicing DTRs and RDs, and retired DTRs and RDs.

The two focus groups took place through the online meeting tool, Zoom. Zoom requires internet connection and a plug-in to be downloaded onto the participant's computer or smartphone device. This download typically takes a few seconds to complete. The participants joined via invitation and the interaction was protected from outsider viewing and was recorded for further analysis and dictation. Participants were provided with instructions to minimize distraction and increase interaction such as: turning off other electronic devices in the vicinity,

attending the focus group from a quiet room free from interruptions, muting their microphone when not talking to decrease background noise, and the expectation of professional respect throughout the interaction. An offer of a personal practice session, or "trial run," was provided to the OSFG participants to assure they are comfortable with joining the Zoom session and to troubleshoot if there are issues; none of the participants utilized this offer.

Participants

Participants for the questionnaire phase of this study were composed of 5,000 randomly selected active DTR and RD members of the Commission on Dietetic Registration. The random selection of nutrition and dietetics professionals occurred on the Commission on Dietetic Registration's side, then they provided the contact list to the researcher for distribution. There was no individual researcher control over this randomization process conducted by the Commission on Dietetic Registration. The focus group phase consisted of 4-6 DTR and RD members, who self-selected through the phase 1 online questionnaire, for each of the two OSFG sessions for a total of 8-12 participants. Since there were not enough self-selected participants in each of the two categories, the two groups were given the opportunity to downsize into one group or participate in individual interviews.

According to the Commission on Dietetic Registration (2019), as of July 15, 2019 there were 103,576 RDs (86.65% female, 3.76% male, and 9.59 not reported) and 5,365 DTRs (66.95% female, 4.32% male, 28.72% not reported). The Academy of Nutrition and Dietetics (2019) describe their membership as 65% RDs and 2% DTRs with the remaining members comprised of researchers, educators, students, and retired members; and half of the members hold advanced degrees. Participants were statistically comprised of more RDs than DTRs, and more females than males.

Sampling

A simple random sample was obtained from the Commission on Dietetic Registration to be utilized for the survey portion of this study. Participants had the choice whether or not to participate with the online survey. The survey was distributed via the Commission on Dietetic Registration's email distribution list. Participants were DTRs and RDs. Retired DTRs and RDs as well as student members will be excluded. Participants were asked within the questionnaire if they would be willing to be a member of one of two hour-long focus groups to further explore the qualitative aspects of this study. The two online synchronous focus groups utilized a purposeful selection of 4-6 nutrition professionals who expressed their willingness to participate in the focus group portion of this study and provided their contact information via the Qualtrics online survey tool from Phase 1. Indication of willingness to participate in the OSFG did not require participation.

Instrumentation

A 62-question online questionnaire tool and 5-question focus group collection tool were developed. The tools were developed based on current research regarding preceptorship and mentorship. The online questionnaire tool was expected to take approximately 25 minutes to complete (See Appendix H). The tool gathered both quantitative and qualitative data.

There were fourteen quantitative demographic items such as age, gender, ethnicity, marital status, state of residence, education pathway, years in practice, years in position, weeks served as a preceptor in the past year, and current preceptor status which will be gathered; five additional quantitative demographic questions were present regarding the participant's awareness of the online preceptor database and the available continuing education units (CEUs) for preceptorship and online training modules, and their willingness to host a supervised practice

experience for an online student who lives within their area. Thirty-seven quantitative 7-point Likert scale questions were asked to gather data regarding willingness to be a preceptor (i.e., "I intend to be preceptor, I am comfortable assuming the role of preceptor, and I have no desire to be a preceptor."); satisfaction regarding the preceptor role (i.e., "I believe I am a competent preceptor, when I work with students I get a sense of achievement, and all things considered I am satisfied in my role as preceptor), and regarding tools (i.e., staff, space, and technology) and support from peers, the facility, supervisors, and the college.

The online questionnaire's qualitative data were obtained through five open-ended questions. Questions included the reasons that impact a nutrition and dietetics professional's decision to fill the role of preceptor, the resources they perceive as necessary to fill the role, what program director support they feel is required to successfully perform these duties, solutions or interventions to perceived barriers, and what preceptor to student ratio they feel is sufficient for an optimal supervised practice experience. Lastly, there was one open-ended question regarding willingness to participate in the focus groups associated with phase 2 of the study.

The online questionnaire tool was piloted for navigability and readability by 4 nutrition and dietetics professionals and 1 allied health professional. The pilot participants were a convenience sample and represent professionals who are practicing in academia, private nutrition and dietetics practice, and medical nutrition therapy. They provided their feedback and edits to the online tool were made accordingly to promote optimum ease of navigability and structure. The pilot participants will be excluded from participating in the study (See Appendix J & K). The ACEND review committee requested the following questions to be added to the online questionnaire in order to gain access to the distribution list: Type of program for which they have provided preceptorship; are they aware of the possible 15 continuing education units (CEUs)

available every 5 years for preceptorship duties; are they aware of the 8 hours of CEUs available through the CDR's online preceptor training module? The questionnaire was updated to reflect this request.

The OSFG required up to an hour of participation for each of the two sessions (See Appendix B). It gathered qualitative information regarding the participants' perceptions on the topic of preceptorship through five open-ended questions. The online focus group questionnaire script was also piloted by the same 4 nutrition and dietetics professionals and 1 allied health professional for optimal wording and question progression. Alterations to question wording and the sequence of questions was implemented to enhance the OSFG experience. As with the online questionnaire pilot, participants in the pilot OSFG were excluded from participating in the study (See Appendix J & L).

It is important to note that since this study is not trying to measure a psychological or psycho-educational construct and is instead attempting to explore the respondents' opinions and perceptions about willingness and satisfaction regarding the topic of preceptorship, there was no need to determine validity or reliability of the questionnaire and focus group tools as they do not measure a construct.

Data Collection

Data were collected electronically via the online survey tool, Qualtrics, for the first phase of the study. In the focus group, or phase two, of the study, data were collected via an interview process of participants. The OSFG phase of the study took place utilizing Zoom software and the sessions were recorded, transcribed verbatim, and verified for accuracy.

Data Analysis

Quantitative Data. The online survey quantitative data (See items Q2.2 - 2.15, Q3.2.1 - Q3.2.11, Q4.2.1 - Q4.2.11, Q5.2.1 - Q5.2.7, Q5.3.1 - Q5.3.8, Q6.7 - Q6.12 in Appendix H), was imported from Qualtrics into the SPSS statistical software. Descriptive statistics were illustrated with histograms to display quantitative data obtained via the online survey. Averages, or group means, were calculated to measure central tendency of survey data. Standard deviations were calculated to determine distribution of survey answers. Bar graphs were utilized to illustrate the difference in proportions. Inferential statistics, such as one-way ANOVA, were calculated to analyze differences between preceptor and non-preceptor survey respondents.

Qualitative Data. The online focus group qualitative data were transcribed verbatim and reviewed for accuracy (See items 1-5 in Appendix I). Both the online focus group and the online survey qualitative data (See items Q6.2-6.4 in Appendix H) utilized an iterative process to analyze for themes (Neale, 2016). The themes were utilized to supplement the quantitative data obtained through the online questionnaire.

Research Question Analysis

The table below (i.e., Table 2) provides a description of the alignment between the study Research Questions and the methods used in this study to ensure that all variables of study have been accounted for adequately.

Table 2

Research Question Alignment

Research Question	Variables	Design	Instrument	Items	Validity & Reliability	Technique	Source
RQ1: What factors impact the nutrition and dietetics professional in providing supervised practice experience as preceptors in ACEND accredited programs?	DV1: Willingness	Survey	Online Questionnaire (Appendix H)	Q3.2.1 – Q3.2.11, Q6.9, Q6.12	N/A	Online Survey	Nutrition and Dietetics Professionals
		Focus Group	Online Synchronous Focus Group (Appendix I)	1	N/A	Online Interview – Focus Group	Nutrition and Dietetics Professionals
	DV2: Satisfaction	Survey	Online Questionnaire (Appendix H)	Q4.2.1 – 4.2.11	N/A	Online Survey	Nutrition and Dietetics Professionals
		Focus Group	Online Synchronous Focus Group (Appendix I)	2	N/A	Online Interview – Focus Group	Nutrition and Dietetics Professionals
	IV1: Challenges	Survey	Online Questionnaire (Appendix H)	Q6.2 – Q6.4	N/A	Online Survey	Nutrition and Dietetics Professionals
		Focus Group	Online Synchronous Focus Group (Appendix I)	3	N/A	Online Interview – Focus Group	Nutrition and Dietetics Professionals

Research Question	Variables	Design	Instrument	Items	Validity & Reliability	Technique	Source
	IV2: Factors Tools	Survey	Online Questionnaire (Appendix H)	Q5.2.1 – 5.2.7,	N/A	Online Survey	Nutrition and Dietetics Professionals
	IV3: Factors Support	Survey	Online Questionnaire (Appendix H)	Q5.3.1 – 5.3.8	N/A	Online Survey	Nutrition and Dietetics Professionals
	IV4: Demographics	Survey	Online Questionnaire (Appendix H)	Q2.2 – 2.15, Q6.7 – 6.8, Q6.10 – 6.11	N/A	Online Survey	Nutrition and Dietetics Professionals
RQ2: What solutions do nutrition and dietetics professionals identify to combat preceptor shortages within ACEND accredited programs?	N/A	Survey	Online Questionnaire (Appendix H)	Q6.5 – 6.6	N/A	Online Survey	Nutrition and Dietetics Professionals
		Focus Group	Online Synchronous Focus Group (Appendix I)	4-5	N/A	Online Interview – Focus Group	Nutrition and Dietetics Professionals

Procedures

The Commission on Dietetic Registration (2019) provides a randomly selected distribution list of 5,000 RD and DTR emails to masters and doctoral level student researchers free of charge. By contrast, the master list of all RD and DTR members can be purchased for $16,202.46 (or $310 per 1,000 additional email addresses of 52,266 active RD and DTR practitioners). For the purpose of this study, the randomly selected 5,000-member free email distribution list was utilized. An introduction email with the informed consent letter and survey link was sent to the 5,000 randomly selected actively credentialed Commission on Dietetic Registration members. Members who are not active DTRS or RDs were excluded from participating. A reminder email was sent one week from the first email with the informed consent and survey link. A final reminder email was sent one week after the initial reminder email, which was two weeks after the initial email. The questionnaire was be closed at the beginning of the fourth week after the initial email.

The data were collected and saved on the co-investigator's secure, password-protected laptop, then imported and analyzed utilizing SPSS software. Subjects were identified by participant number that is assigned through the Qualtrics online survey tool. No identifying information was used. The collected data will be saved for three years on the co-investigator's laptop and then deleted.

The focus groups took place approximately one month after the close of the online survey. Four to six focus group participants were purposefully selected for each of the two focus groups from a pool of online survey participants who provided their approval and contact information. An initial introductory email was sent to prospective OSFG at least one week prior to the scheduled focus group activity providing details on the date, time, and the Zoom online

meeting room technology requirements. A reminder email was sent one day before the online focus group meeting. The focus groups took approximately one hour to complete utilizing Zoom software. The policies were discussed at the beginning of the online focus group detailing netiquette and allowing for each participant to speak. The focus group closed with a statement of appreciation. The data were recorded utilizing the Zoom software, then transcribed. Subjects of the focus group were only be identified via pseudonym. Since there was not enough self-identified participants to fill each of the two focus groups, participants were offered the option to be condensed into one group to include both professionals who desire to be preceptors and those who do not, or split to provide an option for a one-on-one interview.

Ethical Considerations

Participants had a choice whether or not to participate in the study. Their answers were confidential and there is no chance for retaliation. Therefore, ethical considerations were low-risk for this study.

Conclusions

This study aimed to explore the factors that impact a nutrition professionals' willingness to provide preceptorship to eligible nutrition and dietetics students and to explore possible solutions or interventions that could be implemented to meet supervised practice components of ACEND accredited programs. The study included an online survey utilizing the electronic survey tool Qualtrics to gain both qualitative and quantitative data. The data, which remained confidential and unidentifiable, was analyzed by SPSS software for descriptive and inferential statistics and be kept on a secure computer for 3 years and then destroyed. A series of two online synchronous focus group sessions were completed. Each hour-long session consisted of 4-6 survey respondents per session who indicated interest in focus group activities and was

conducted and recorded utilizing Zoom online meeting software, transcribed, coded, and analyzed for themes. The focus group activity aimed to gain a further understanding of the qualitative data obtained through the online survey.

The next chapter will include the survey and focus group results. These results could potentially be utilized by nutrition and dietetics program directors to increase the recruitment and retention of supervised practice preceptors, by employers to increase their employee's job satisfaction and willingness to serve as a preceptor, and by the credentialing and accreditation organizations to consider new ways of combating the problem of preceptor shortage.

CHAPTER 4. RESULTS

Nutritional choices play a role in five of the ten leading causes of death within the United States: stroke, heart disease, diabetes, kidney disease, and cancer (CDC, 2017b). Registered Dietitians (RDs) and Dietetic Technicians, Registered (DTRs) are nutrition experts who are qualified to guide the public towards healthier food choices, provide medical nutrition therapy to decrease the impact of nutrition-based conditions, and lead public health initiatives towards disease prevention (Slawson et al., 2013).

According to CareerWise (2019b, 2019a), an education and career resource utilized by Minnesota State Colleges and Universities, the nationwide demand for RDs and DTRs will increase by 14.6% and 9.3% by 2028 respectfully. The Accreditation Council for Education in Nutrition and Dietetics (ACEND) require a supervised practice component of 1,200 hours within RD and 450 hours within DTR programs to be eligible to take the national registration exams through the Commission on Dietetic Registration (CDR). There is the exception of bachelor's prepared didactic students who were unmatched for a supervised practice experience who are then approved to take the DTR exam (Accreditation Council for Education in Nutrition and Dietetics, 2016b, 2016c, 2016d, 2016e).

ACEND defines preceptors as "a practitioner who serves as faculty for students/interns during supervised practice by overseeing practical experiences, providing one-on-one training, and modeling professional behaviors and values" (Commission on Dietetic Registration, 2020d, p.1). Because supervised practice is an integral component of nutrition and dietetics programs, it is important to explore what factors impact a potential preceptor's decision regarding whether or not to fulfill this important role, their satisfaction within the role, and the challenges they face in

providing this voluntary service to nutrition and dietetics students within ACEND accredited programs.

Preceptors are a critical component of meeting the accreditation requirements within education in nutrition and dietetics. Despite RDs and the majority of DTRs requiring access to preceptors in their educational journey there is a critical lack of preceptors who are willing to host current nutrition and dietetics students. Without access to preceptors, students will be unable to meet the requirements for graduation which will result in fewer nutrition professionals available to fill the growing employment needs for RDs and DTRs. This could impact the public's access to competent and reliable nutrition information putting them at a greater risk for obtaining nutrition misinformation from unqualified individuals.

Purpose of Study

This study aimed to explore the factors that impact nutrition professionals' willingness to perform preceptor duties, the barriers or challenges experienced regarding this role that impact satisfaction, and potential solutions to perceived barriers. Additionally, to assist the nutrition and dietetics professionals fulfilling the program director position within ACEND accredited programs with helpful suggestions to strategize solutions in order to combat preceptor shortages. An online questionnaire followed by a series of focus groups was completed to explore both quantitative and qualitative aspects of the following two research questions.

Research Question 1

What factors impact the nutrition and dietetics professionals' willingness and satisfaction in providing supervised practice experience as preceptors in ACEND accredited programs?

The following is a list of the dependent and independent variables with the corresponding measurement tools that were utilized. See Appendix H for the online questionnaire, Appendix I for the OSFG questions, and Table 2 on page 45 for the research question alignment.

Dependent Variable 1: Willingness. Willingness was measured through questions 3.2.1 through 3.2.11, questions 6.9 and 6.12 in the online questionnaire; and question 1 of the OSFG**.**

Dependent Variable 2: Satisfaction. Satisfaction was measured through questions 4.2.1 through 4.2.11 in the online questionnaire; and question 2 of the OSFG.

Independent Variable 1: Challenges. Challenges were assessed through questions 6.2 through 6.4 in the online questionnaire; and question 3 of the OSFG.

Independent Variable 2: Factors/Tools. Factors regarding tools were examined through questions 5.2.1-5.2.7 in the online questionnaire.

Independent Variable 3: Factors/Support. Factors regarding support were examined through questions 5.3.1-5.3.8 in the online questionnaire.

Independent Variable 3: Demographics. Demographics were assessed through questions 2.2 through 2.15, questions 6.7 and 6.8, and questions 6.10 through 6.11 in the online questionnaire.

Research Question 2

What solutions do nutrition and dietetics professionals identify to combat preceptor shortages within ACEND accredited programs?

Questions 6.5 through 6.6 in the online questionnaire and questions 4 and 5 in the online synchronous focus groups pertain to research question 2 and collected qualitative data. See Appendix H for the online questionnaire, Appendix I for the OSFG questions, and Table 2 on page 45 for the research question alignment.

Online Questionnaire & OSFG Demographics

Online Questionnaire Participants

Participants in the electronic survey (see Appendix H) were recruited via a randomly selected distribution of 5,000 RDs and DTRs list from the CDR. A total of 228 individuals completed the electronic survey for a response rate of 4.56%. As expected, the majority of respondents were women (98.7%), White (84.2%), married (64.9%), and their age in years ranged a minimum of 22 and a maximum of 70, with a mean of 43 ± 13 years. See Table 3 for the complete demographic data set.

Table 3

Demographics: Gender, Ethnicity, Marital Status, Age

Gender					
Female 225 (98.7%)		Male 3 (1.3%)		Nonbinary 0 (0%)	Prefer not to Answer 0 (0%)
Ethnicity					
White 192 (84.2%)	Hispanic or Latino 11 (4.8%)	Black or African American 7 (3.1%)	Asian or Pacific Islander 8 (3.5%)	Other 6 (2.6%)	Prefer not to Answer 4 (1.8%)
Marital Status					
Single (Never Married) 59 (21.9%)	Married 148 (64.9%)	In a Domestic Partnership 9 (3.9%)	Divorced 12 (5.3%)	Widowed 3 (1.3%)	Prefer not to Answer 6 (2.6%)
Age in Years					
20-25 13 (5.7%)	26-35 78 (34.2%)	36-45 47 (20.6%)	46-55 40 (17.5%)	56-65 38 (16.7%)	66+ 10 (4.4%)	Missing 2 (0.9%)
Minimum 22		Maximum 70		*M* 43		*SD* 13

Note: n = 228.

Most participants held the RD credential (95.2%), about 67% had advanced credentials (i.e., graduate degree 61%, doctorate 6.1%), the DTR credentialed participants were in the minority (2.2%), and there were participants who also held other credentials (9.2%) such as state licensure, Certified Nutrition Support Clinician (CNSC), Certified Diabetes Educator (CDE), etc.

The following data regarding the participant's credentialing pathway are reported to meet the requirements for access to the CDR distribution list. The majority of respondents experienced the didactic bachelor's degree with external supervised practice (31.1%) pathway, and many participants who selected the "other" category for educational track could have fit into one of the question's listed groups; however, there were two that identified the "grandfather track" in which registration requirements were different from what they are now, however the practitioner held the RD credential and was "grandfathered" into continued maintenance of the credential.

Most of the participants were employed full-time and working 40+ hours per week in the clinical non-administration practice setting (69.7% and 47.8% respectively). The participants who selected "other" listed areas such as K-12 schools, operational excellence, pediatrics, home care, agriculture, sports performance, government, and newly registered with no experience (12.3%). See Table 4 for the complete data set regarding professional practice of participants.

Table 4

Demographics: Credentials, Education, Employment

Credentials					
DTR or NDTR 5 (2.2%)	RD or RDN 217 (95.2%)	Graduate (MS, MBA, etc.) 139 (61%)	Doctorate (PhD, EdD, etc.) 14 (6.1%)	Other 21 (9.2%)	
Education Pathway					
Dietetic Technician (with built-in supervised practice) 4 (1.8%)	Coordinated Bacc. (with built-in supervised practice) 29 (12.7%)	Didactic Bacc. (no supervised practice) 24 (10.5%)	Didactic Bacc. (with external combined graduate degree and supervised practice) 53 (23.2%)	Didactic Bacc. (with external supervised practice) 71 (31.1%)	Combined Coordinated Bacc. and Graduate Program (with built-in supervised practice) 20 (8.8%)	Other 27 (11.8%)
Employment Status					
Full-Time (40+ hours/week) 159 (69.7%)	Part-Time (<40 hours/week) 39 (17.1%)	Unemployed (currently looking for work) 6 (2.6%)	Unemployed (currently not looking for work) 3 (1.3%)	Self-Employed 21 (9.2%)	
Area of Practice					
Clinical (non-admin) 109 (47.8%)	Clinical Admin 18 (7.9%)	Foodservice (non-admin) 7 (3.1%)	Foodservice Admin 24 (10.5%)	Combined Clinical and Foodservice (non-admin) 13 (5.7%)	Combined Clinical and Foodservice Admin 21 (9.2%)
Community /Public Health 55 (24.1%)	Education 43 (18.9%)	Private Practice 31 (13.6%)	Business and Industry 16 (7.0%)	Research 13 (5.7%)	Other 28 (12.3%)

Note: n = 228; Bacc. = Baccalaureate; Admin = Administration

The participants had a wide range of years in practice with a maximum of 47 ± 13 years, a minimum of 0, mean of 16. The years in their current position also varied greatly with a maximum of 40 years, minimum of newly registered, mean of 7.07 years and a standard deviation of 8.23. See Table 5 for the complete data set on years in practice and in current position.

Table 5

Demographics: Years in Practice and Current Position

Years in Practice				
0-3	4-10	11-20	21-30	31+
38 (16.7%)	64 (28.1%)	52 (22.8%)	32 (14.0%)	42 (18.4%)
Minimum	Maximum	*M*	*SD*	
0	47	16	13	
Years in Current Position				
0-3	4-10	11-20	21-30	31+
98 (43.0%)	88 (38.6%)	25 (11.0%)	9 (3.9%)	8 (3.5%)
Minimum	Maximum	*M*	*SD*	
0	40	7	8	

Note: n = 228

Respondents identified themselves as *former preceptor with desire to precept again* (27.6%), *current preceptor with desire to continue precepting* (26.8%), *non-preceptor with desire to become a preceptor* (15.8%), *non-preceptor with no desire to become a preceptor* (14.5%), *former preceptor with no desire to precept again* (13.2%), and *current preceptor with no desire to continue precepting* (2.2%). The majority of participants served this preceptor role within a traditional dietetic internship program (49.1%). Those who selected the "other" program type included other allied health professions and certified dietary manager programs (7.5%). Another question explored was the number of weeks served as a preceptor in the previous year and ranged from a minimum of 0 to a maximum of 52, with a mean of 5.64 weeks and a standard deviation of 9.85. See Table 6 for the complete preceptorship demographics data set.

Table 6

Demographics: Preceptorship

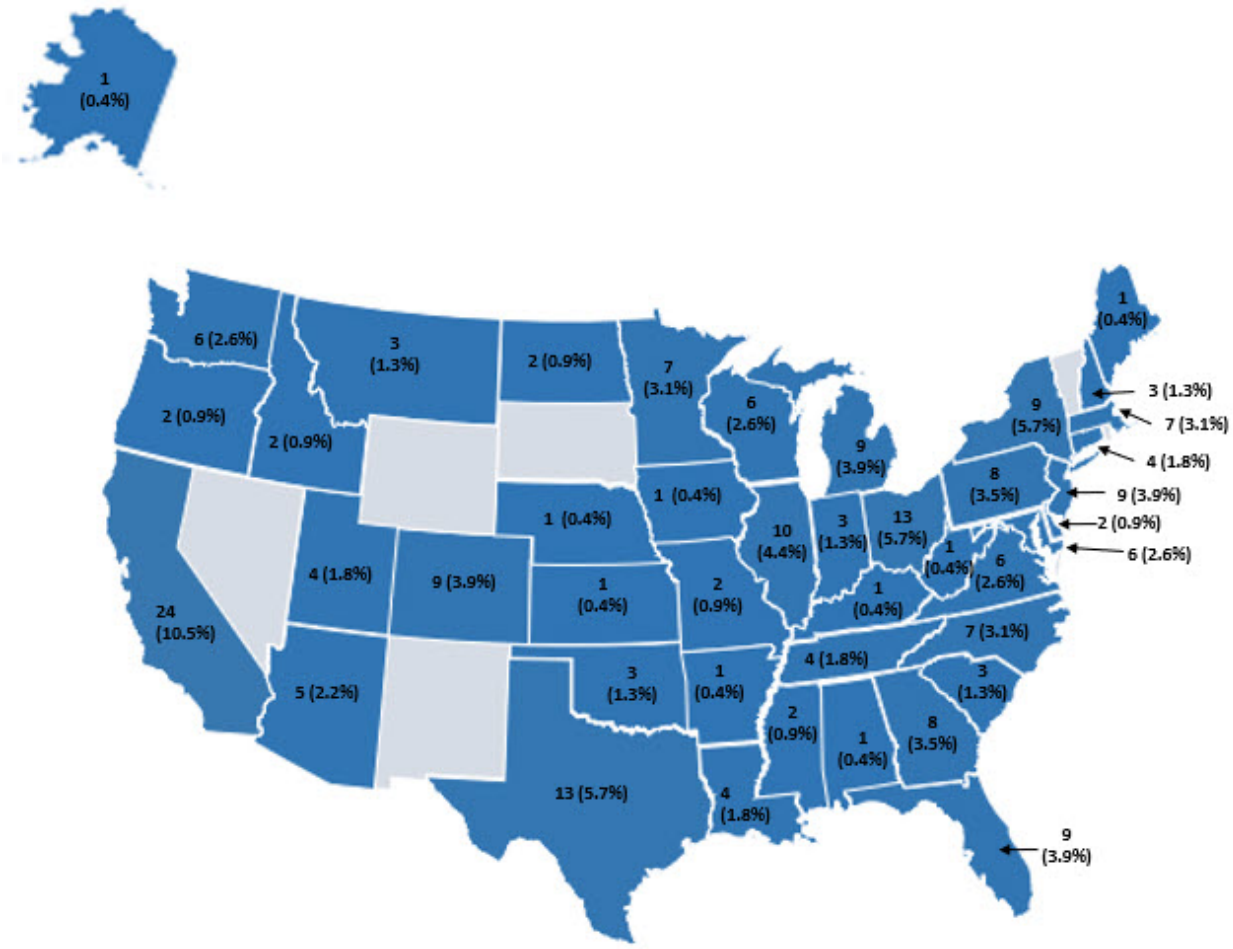
Preceptor Category					
Current Preceptor – desire to continue precepting 61 (26.8%)	Current Preceptor – no desire to continue precepting 5 (2.2%)	Former Preceptor – desire to precept again 63 (27.6%)	Former Preceptor – no desire to precept again 30 (13.2%)	Non-Preceptor – desire to become a preceptor 36 (15.8%)	Non-Preceptor – no desire to become a preceptor 33 (14.5%)
Precepted Programs					
Traditional Dietetic Technician 17 (7.5%)	Online Dietetic Technician 5 (2.2%)	Traditional Coordinated Bachelor's Degree 32 (14.0%)	Online Coordinated Bachelor's Degree 6 (2.6%)	Traditional Dietetic Internship 112 (49.1%)	
Online Dietetic Internship 34 (14.9%)	Traditional Combined Graduate Degree and Internship 73 (32.0%)	Online Combined Graduate Degree and Dietetic Internship 13 (5.7%)		Other 17 (7.5%)	
Weeks as a Preceptor in Past Year					
0	1-4	5-8	9-12	13-16	17-20	21-24
109 (47.8%)	45 (19.7%)	25 (11.0%)	18 (7.9%)	9 (3.9%)	7 (3.1%)	1 (0.4%)
25-28	29-32	33-36	37-40	41-44	45-48	49-52
4 (1.8)	2 (.9%)	1 (.4%)	3 (1.3%)	0 (0%)	1 (.4%)	3 (1.3%)
Minimum		Maximum		*M*		*SD*
0		52		5.64		9.85

Note: n = 228. The precepted programs do not add up to 100% due to participants having the ability to choose more than one option to indicate which programs they have provided preceptorship.

When exploring the participant's place of residency, there was representation from every state except Hawaii, Nevada, New Mexico, South Dakota, Vermont, and Wyoming. See Figure 2 for the state or territory of residence data set.

Figure 2

State or Territory of Residence. Not Pictured: 1 response from Puerto Rico



The national preceptor database that is hosted by ACEND has the potential to be an invaluable resource to connect students with potential preceptors. However, most participants (64%) were unaware of the Academy's preceptor database and only 11% of participants had added their contact information to the database. Continuing education opportunities can be costly, but ACEND and CDR offer free continuing education units for serving as a preceptor. As you can see in Table 7, the majority (54.4%) of participants were unaware they would be eligible for up to 15 continuing professional education units calculated as a maximum of 3 per year, per

5-year cycle for providing preceptorship to a student. Most (61.8%) were also unaware of the 8 free continuing education units associated with the CDR's online preceptor training program. A little more than half of respondents indicated that they were open to the idea of hosting supervised practice hours for online nutrition and dietetics students who live in their area (53.5%).

Table 7

Demographics: Awareness of Resources and Openness to Precepting Online Students

	Yes	No
Aware of Academy of Nutrition and Dietetics Preceptor Database	82 (36%)	146 (64%)
Added Contact Information to Preceptor Database	25 (11%)	203 (89%)
Aware of 15 Continuing Professional Education units for Providing Preceptorship (3/y for 5y registration cycle)	102 (44.7%)	124 (54.4%)
Aware of 8 Free Commission on Dietetic Registration Online Preceptor Continuing Education Training	87 (38.2%)	141 (61.8%)
Open to Hosting Supervised Practice for Online Nutrition & Dietetics Student in their Area	122 (53.5%)	106 (46.5%)

Note. $n = 228$

Question 6.12 in the online questionnaire asked the participants to self-select to be considered for the online synchronous focus group activity.

Online Synchronous Focus Group Participants

The online synchronous focus group (OSFG) participants self-identified as willing to take part within the online questionnaire in phase 1 of this study. Eighty-four participants showed interest in cooperating with the *desire to be a preceptor* OSFG. Of these, twelve participants were purposefully selected as representatives from each of the groups (i.e., current-, former-, and

non-preceptor with desire to precept). An email invitation was distributed, and 4 participants followed through with the desire to be a preceptor OSFG which was held via Zoom on Monday, November 2, 2020 at 1 p.m. CST.

There were 10 practitioners who volunteered to participate in the OSFG for *no desire to be a preceptor*. Invitations were sent via email to all 10 potential participants and nine declined to participate. The interested participant was given the choice to join the OSFG with nutrition and dietetics professionals who desire to be a preceptor or to join in a one-on-one interview. She chose the one-on-one interview which was conducted via Zoom on Friday, October 30, 2020 at 4 p.m. CST.

Demographics were not tracked for the OSFG or one-on-one interview. However, all were female and working within the field of nutrition and dietetics. Their participation was intended to provide triangulation for the answers of the quantitative data. This allowed for the development of stronger results due to the examination of data obtained through different methods.

Research Question 1: What factors impact the nutrition and dietetics professionals' willingness and satisfaction in providing supervised practice experience as preceptors in ACEND accredited programs?

Quantitative Data

Utilizing SPSS software, questions 3.2.3, 3.2.8, 4.2.8, 4.2.9, and 4.2.11 were reverse-coded to allow for all questions to be positive in nature. Table 8 provides an example of this reverse-coding.

Table 8

Reverse-Coding Example

Question	Original Score	Recoded
3.2.3 If I had a choice, I would choose NOT to be a preceptor (negatively worded question)	1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neutral 5 Somewhat Agree 6 Agree 7 Strongly Agree	1 Strongly Agree 2 Agree 3 Somewhat Agree 4 Neutral 5 Somewhat Disagree 6 Disagree 7 Strongly Disagree

Note. Reverse coding allows for the negatively worded questions to better align scores to the overall measure of the construct (i.e., higher score means more willingness).

Composite scores were then calculated for willingness, satisfaction, factors/tools, factors/supports, and the total score which was a combination of all categories. These composite scores were utilized to explore one-way ANOVA calculations. Table 9 provides a breakdown of the number of questions in each category, as well as the lowest (most in disagreement) and highest (most in agreement) possible scores.

Table 9

Composite Score Breakdown

Category	Number of Questions	Lowest Score	Highest Score
Willingness	11	11	77
Satisfaction	11	11	77
Factors/Tools	7	7	49
Factors/Supports	8	8	56
Total Score	37	37	259

Note. The Likert scale ranged from 1 to 7.

The assumptions for one-Way ANOVA were met in all 3 categories: there was independence of observations, no significant outliers, homogeneity of variances, and normality (Verma & Abdel-Salam, 2019). Skewness for all categories was determined to be within -1 and +1 and a visual evaluation of the P-P plot for the five composite scores indicated a normal

distribution which allowed for parametric statistical evaluation. Post hoc (i.e., Games-Howell) analyses were then utilized to determine differences statistical groups. See Table 10 for descriptive statistics of the composite scores for willingness, satisfaction, factors/tools, factors/supports, and total score; and Figure 3 for the total score histogram indicating a normal distribution.

Table 10

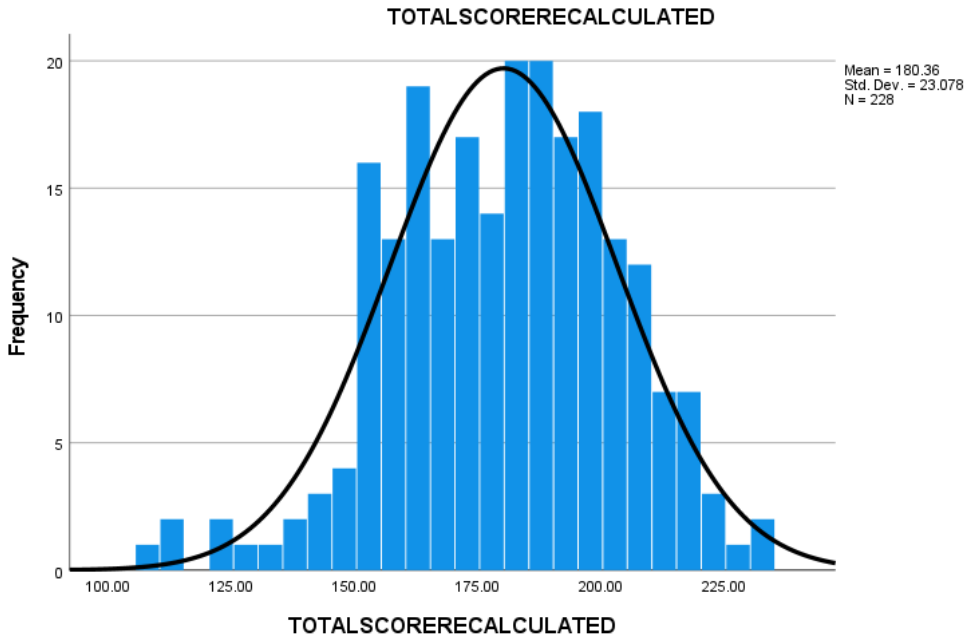
Descriptive Statistics: Composite Scores

	M	*SD*	Skewness
Total Score	180.36	23.08	-.304
Factors/Support	40.17	8.39	-.364
Factors/Tools	31.72	8.69	-.329
Satisfaction	57.37	5.35	-.547
Willingness	51.10	6.60	-.071

Note. See Table 9 for the composite score breakdown.

Figure 3

Total Score: Composite Score Curve



Willingness

Data analysis determined there were seven statistically significant variables regarding the willingness to be a preceptor. The first was the age of the participant, which was divided into the following groups: 20-25, 26-35, 36-45, 46-55, 56-65, and 65+. Other variables that were found to have a significant relationship with willingness was preceptor category, weeks served as a preceptor in the previous year, awareness of the preceptor database, the 15 continuing education credits for preceptorship as well as the 8 for the online preceptor training, and finally openness to hosting supervised practice for online students. See Table 11 for significance values regarding willingness. No other variables were found to have a statistically significant impact on willingness. In this section, results with a higher mean composite score equate to a greater willingness to fulfill the preceptor role.

Table 11

RQ1 Variables Impacting Willingness to Precept

		df	*F*	Significance (*p*)
Age	Between Groups	5	2.340	.043
	Within Groups	220		
Preceptor Category	Between Groups	5	23.034	.000
	Within Groups	222		
Weeks Served as a Preceptor in Past Year	Between Groups	25	2.592	.000
	Within Groups	202		
Aware of Academy Preceptor Database	Between Groups	1	10.774	.001
	Within Groups	226		
Open to Hosting Online Supervised Practice	Between Groups	1	10.905	.001
	Within Groups	226		
Aware of 15 CPE/5y Cycle for Preceptorship	Between Groups	1	22.484	.000
	Within Groups	224		
Aware of Free 8h CPE Online Preceptor Training from CDR	Between Groups	1	22.484	.000
	Within Groups	224		

Note. Significance (*p*) = 0.05, CPE = continuing professional education.

There was a statistically significant difference in preceptor willingness between age groups as determined by one-way ANOVA, $F(5, 220) = 2.340$, $p = .043$. A Games-Howell post

hoc was calculated because the assumption of homogeneity of variances for Tukey's was violated (Verma & Abdel-Salam, 2019). The test revealed that practitioners aged 20-25 (*M* = 53.69) reported higher level of willingness to fulfill the role of preceptorship than practitioners aged 56-65 (*M* = 48.95) and also higher than those aged 66+ (*M* = 47.10). There was no statistically significant difference between the other age groups. See Table 12 for the full dataset regarding willingness and age. However, it is interesting to note that the 20 to 25-year age group was the most willing to be a preceptor (*M* = 53.69).

Table 12

RQ1 Willingness: Age

	20-25 *M* = 53.69	26-35 *M* = 51.47	36-45 *M* = 51.38	46-55 *M* = 48.95	56-65 *M* = 52.26	66+ *M* = 47.10
20-25	--	*p* = .587	*p* = .672	**p* = .046	*p* = .952	**p* = .042
26-35	--	--	*p* = .1.000	*p* = .342	*p* = .992	*p* = .210
36-45	--	--	--	*p* = .554	*p* = .993	*p* = .281
46-55	--	--	--	--	*p* = .285	*p* = .925
56-65	--	--	--	--	--	*p* = .153
65+	--	--	--	--	--	--

Note. **p* = .05 statistically significant, *M* = mean, maximum score of 77 points based on 11 questions on the 7-point Likert scale.

Preceptor category was evaluated with one-way ANOVA, $F(5, 222) = 23.034$, $p = .000$. A Games-Howell post hoc was again utilized due to the homogeneity of variances associated with Tukey's being violated (Verma & Abdel-Salam, 2019). The test revealed current preceptors with a desire to continue precepting (*M* = 55.75) scored significantly higher, therefore were more willing to fulfill the role of preceptor, than former preceptors with a desire to continue precepting (*M* = 52.08), non-preceptors with desire to become a preceptor (*M* = 51.47), former preceptors with no desire to precept again (*M* = 46.60), and non-preceptors with no desire to precept in the future (*M* = 44.70).

Former preceptors who desire to precept again (*M* = 52.08) also scored significantly higher than former preceptors with no desire to precept again (*M* = 46.60) and non-preceptors with no desire to precept again (*M* = 44.70). Lastly, Non-preceptors who desire to fulfill the preceptor role (*M* = 51.47) scored significantly higher than non-preceptors with no desire to become a preceptor (*M* = 44.70). See Table 13 for the complete data set regarding willingness and preceptor category.

Table 13

RQ1 Willingness: Preceptor Category

	CPDC *M* = 55.75	CPND *M* = 48.60	FPDP *M* = 52.08	FPND *M* = 46.60	NPD *M* = 51.47	NPND *M* = 44.70
CPDC	--	*p* = .053	**p* = .005	**p* = .000	**p* = .004	**p* = .000
CPND	--	--	*p* =.462	*p* =.876	*p* =.652	*p* =.393
FPDP	--	--	--	**p* = .000	*p* = .995	**p* = .000
FPND	--	--	--	--	**p* = .003	*p* = .686
NPD	--	--	--	--	--	**p* = .000
NPND	--	--	--	--	--	--

Note. **p* = .05 statistically significant, *M* = mean, maximum score of 77 points based on 11 questions on the 7-point Likert scale, CPDC = current preceptor desire to continue, CPND = current preceptor no desire to continue, FPDP = former preceptor desire to precept again, FPND = non-preceptor no desire to continue, NPD = non-preceptor desire to precept, NPND = non-preceptor no desire to precept.

Another one-way ANOVA significant finding included the weeks served as a preceptor in the past year, $F(4, 223) = 8.703$, $p = .000$. A Games-Howell post hoc was calculated due to Tukey's assumption of homogeneity of variances being violated (Verma & Abdel-Salam, 2019). As outlined in Table 14, the analysis showed a statistically lower score for willingness for those who had served zero weeks in the past year as a preceptor (*M* = 48.68) versus those who served 1-13 weeks (*M* = 52.91), and 14-26 weeks (*M* = 53.62). Although it was not statistically

significant, it is interesting to note that those who served 27-39 weeks out of the year as a preceptor scored the highest for willingness to precept (*M* = 57.00).

Table 14

RQ1 Willingness: Weeks Served as Preceptor in Past Year

	0 *M* = 48.68	1-13 *M* = 52.91	14-26 *M* = 53.62	27-39 *M* = 57.00	40-52 *M* = 55.60
0	--	**p* = .000	**p* = .007	*p* = .083	*p* = .504
1-13	--	--	*p* = .985	*p* = .486	*p* = .954
14-26	--	--	--	*p* = .682	*p* = .986
27-39	--	--	--	--	*p* = .998
40-52	--	--	--	--	--

Note. **p* = .05 statistically significant, *M* = mean, maximum score of 77 points based on 11 questions on the 7-point Likert scale.

One-way ANOVA indicated statistically significant findings, $F(1, 226) = 10.774$, $p = .001$, and as indicated in Table 15, that those who were aware of the Academy's preceptor database (*M* = 52.98) were more willing to be preceptors than those who were not aware of the database (*M* = 50.05).

Table 15

RQ1 Willingness: Aware of Preceptor Database

	Yes *M* = 52.98	No *M* = 50.05
Yes	--	--
No	*p* = .001	--

Note. **p* = .05 statistically significant, *M* = mean, maximum score of 77 points based on 11 questions on the 7-point Likert scale.

Table 16 illustrates that practitioners who were open to hosting supervised practice experience for online nutrition and dietetics students who live in their area (*M* =52.42) scored significantly higher and were more willing to precept than their counterparts who are not aware of the database (*M* = 49.58), as determined by one-way ANOVA, $F(1, 226) = 10.905$, $p = .001$.

Table 16

RQ1 Willingness: Open to Hosting Online Student

	Yes *M* = 52.42	No *M* = 49.58
Yes	--	--
No	*p* = .001	--

Note. *p = .05 statistically significant, *M* = mean, maximum score of 77 points based on 11 questions on the 7-point Likert scale.

Table 17 shows that those who were aware that they are eligible for up to 15 continuing professional education units (CPEs) within a 5 year recertification cycle for providing preceptorship (*M* = 53.34) scored significantly higher reflecting that they were more willing to precept than those who were not (*M* = 49.34), as determined by one-way ANOVA, $F(1, 224) = 22.484$, $p = .000$.

Table 17

RQ1 Willingness: Awareness of up to 15 CPEs within 5-year Recertification Cycle

	Yes *M* = 53.34	No *M* = 49.34
Yes	--	--
No	*p* = .000	--

Note. *p = .05 statistically significant, *M* = mean, maximum score of 77 points based on 11 questions on the 7-point Likert scale.

Lastly, Table 18 outlines how practitioners that were aware that CDR provides a free online preceptor training program (*M* = 53.70) scored significantly higher indicating a higher level of willingness to be a preceptor than those who were not aware (*M* = 49.50), as determined by one-way ANOVA, $F(1, 224) = 22.484$, $p = .000$.

Table 18

RQ1 Willingness: Awareness of CDR's Free Preceptor Training Program

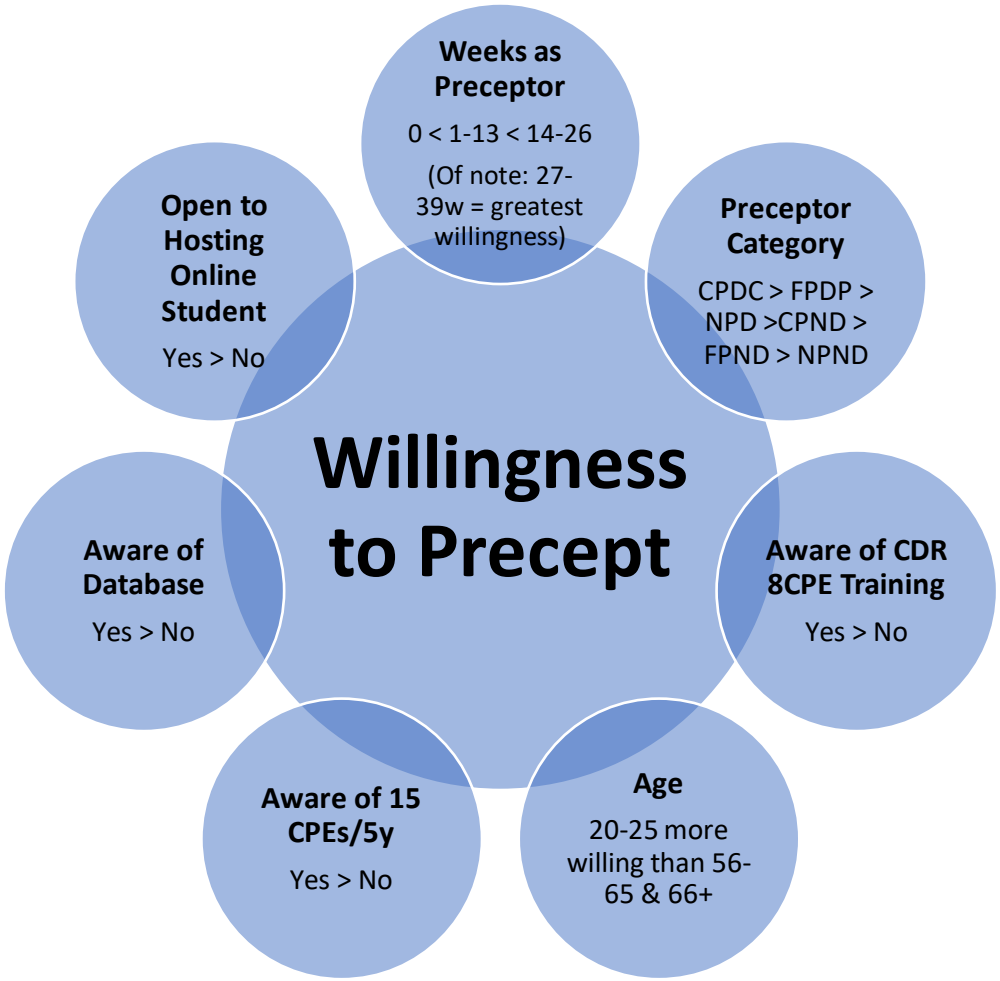
	Yes *M* = 53.70	No *M* = 49.50
Yes	--	--
No	*p* = .000	--

Note. *p = .05 statistically significant, *M* = mean, maximum score of 77 points based on 11 questions on the 7-point Likert scale.

Post hoc analysis was not appropriate due to the yes and no answer options lending an intuitive process of evaluation (Verma & Abdel-Salam, 2019). Figure 4 reflects an at-a-glance perspective of the factors that impact willingness to precept.

Figure 4

Categories that Impact Willingness to Precept



Note. CPDC = current preceptor desire to continue, FPDP = former preceptor desire to precept again, NPD = non-preceptor desire to precept, CPND = current preceptor no desire to continue, FPND = non-preceptor no desire to continue, NPND = non-preceptor no desire to precept, CPE = continuing professional education.

Satisfaction

As illustrated in Table 19, there were five statistically significant findings regarding satisfaction with the role of preceptor: marital status, preceptor category, and awareness of both the 15 CPEs per 5-year recertification cycle for precepting and the 8-hour online preceptor training available through the CDR. No other variables were found to have a statistically significant impact on satisfaction. In this section, results with a higher mean composite score equate to a greater satisfaction regarding the role of preceptor.

Table 19

RQ1 Variables Impacting Satisfaction to Precept

		df	*F*	Significance (*p*)
Marital Status	Between Groups	5	3.003	*.012
	Within Groups	222		
Preceptor Category	Between Groups	5	6.132	*.000
	Within Groups	222		
Open to Hosting Online Supervised Practice	Between Groups	1	10.029	*.002
	Within Groups	226		
Aware of 15 CPE/5y Cycle for Preceptorship	Between Groups	1	12.146	.001
	Within Groups	224		
Aware of Free 8h CPE Online Preceptor Training from CDR	Between Groups	1	7.804	.006
	Within Groups	226		

Note. *significance of $p = .05$ or lower, CPE = continuing professional education.

There was a significant difference between marital status groups as determined by one-way ANOVA, $F(5, 222) = 3.003$, $p = .012$). A Tukey's post hoc was calculated because the homogeneity of variances was met (Verma & Abdel-Salam, 2019). As shown in Table 20, the test revealed that nutrition professionals who identified the "prefer not to answer" category (M =

51.67) reported a lower level of satisfaction those who are married (*M* =57.16) or in a domestic partnership (*M* = 60.22). Although interesting, this statistical significance is not practically useful because it is unknown which marital statuses are represented in the "prefer not to answer" group.

Table 20

RQ1 Satisfaction: Marital Status

	Single (Never Married) *M* = 57.84	Married *M* = 57.16	Domestic Partnership *M* = 60.22	Divorced *M* = 59.75	Widowed *M* = 53.00	Prefer not to Answer *M* = 51.67
Single (Never Married)	--	*p* = .969	*p* = .808	*p* = .866	*p* = .628	*p* = .073
Married	--	--	*p* = .531	*p* = .568	*p* = .748	*p* = .122
Domestic Partnership	--	--	--	*p* = 1.000	*p* = .307	**p* = .026
Divorced	--	--	--	--	*p* = .346	**p* = .027
Widowed	--	--	--	--	--	*p* = .999
Prefer not to Answer	--	--	--	--	--	--

Note. **p* = .05 statistically significant, *M* = mean, maximum score of 77 points based on 11 questions on the 7-point Likert scale.

Preceptor category was the second statistically significant finding regarding satisfaction in the role as preceptor identified through ANOVA, $F(5, 222) = 6.132$, $p = .000$. A Games-Howell post hoc test was conducted due to Tukey's assumption of homogeneity of variances being violated (Verma & Abdel-Salam, 2019). As Table 21 shows, the analysis found a statistically lower score for satisfaction for practitioners who were non-preceptors with no desire to become a preceptor (*M* = 54.12) than former preceptors with a desire to precept again (*M* = 55.77), and those who were current preceptors with a desire to continue precepting (*M* = 59.38).

Table 21

RQ1 Satisfaction: Preceptor Category

	CPDC *M* = 59.38	CPND *M* = 55.20	FPDP *M* = 58.46	FPND *M* = 55.77	FPD *M* = 56.67	FPND *M* = 54.12
CPDC	--	*p* = .395	*p* = .871	p = .168	*p* = .053	**p* = .000
CPND	--	--	*p* = .589	*p* = 1.000	*p* = .968	*p* = .993
FPDP	--	--	--	*p* = .436	*p* = .317	**p* = .002
FPND	--	--	--	--	*p* = .991	*p* = .915
NPD	--	--	--	--	--	*p* = .267
NPND	--	--	--	--	--	--

Note. **p* = .05 statistically significant, *M* = mean, maximum score of 77 points based on 11 questions on the 7-point Likert scale, CPDC = current preceptor desire to continue, CPND = current preceptor no desire to continue, FPDP = former preceptor desire to precept again, FPND = non-preceptor no desire to continue, NPD = non-preceptor desire to precept, NPND = non-preceptor no desire to precept.

One-way ANOVA, $F(1, 226) = 10.029$, $p = .002$, found that practitioners who were open to hosting supervised practice experiences for online students who live in their area ($M = 5.3085$) scored significantly higher for satisfaction than those who are not ($M = 5.1081$), which is illustrated in Table 22.

Table 22

RQ1 Satisfaction: Open to Hosting Online Student

	Yes *M* = 58.39	No *M* = 56.19
Yes	--	--
No	*p* = .002	--

Note. **p* = .05 statistically significant, *M* = mean, maximum score of 77 points based on 11 questions on the 7-point Likert scale.

Those who were aware that they are eligible for up to 15 CPEs per 5-year certification cycle ($M = 5.3369$) scored significantly higher ($F(1, 224) = 12.146$, $p = .001$) than those who were not ($M = 5.1151$), as outlined in Table 23.

Table 23

RQ1 Satisfaction: Awareness of up to 15 CPEs within 5-year Recertification Cycle

	Yes *M* = 58.71	No *M* = 56.27
Yes	--	--
No	*p* = .001	--

Note. **p* = .05 statistically significant, *M* = mean, maximum score of 77 points based on 11 questions on the 7-point Likert scale.

Lastly, as illustrated in Table 24, respondents who were aware of the free 8 CPEs of online preceptor training through CDR (*M* = 58.61) scored significantly higher in their satisfaction as a preceptor than those who were not (*M* = 56.60) as determined by one-way ANOVA, ($F(1, 226) = 7.804$, $p = .006$).

Table 24

RQ1 Satisfaction: Awareness of CDR's Free Preceptor Training Program

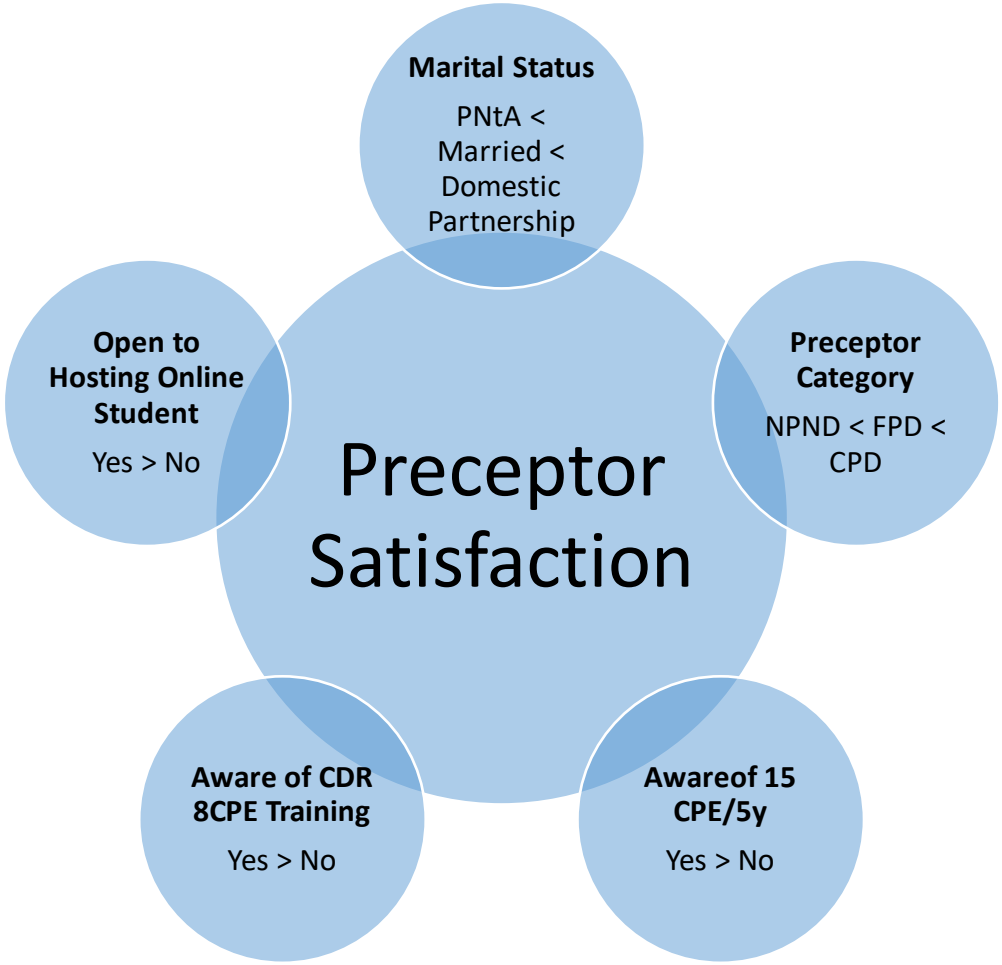
	Yes *M* = 58.61	No *M* = 56.60
Yes	--	--
No	*p* = .006	--

Note. **p* = .05 statistically significant, *M* = mean, maximum score of 77 points based on 11 questions on the 7-point Likert scale.

Post hoc tests were not needed due to the intuitive evaluation of yes and no answers (Verma & Abdel-Salam, 2019). Figure 5 depicts an at-a-glance perspective of the factors that impact satisfaction with preceptorship.

Figure 5

Categories that Impact Satisfaction with Preceptorship



Note. PNtA = prefer not to answer, NPND = non-preceptor with no desire to precept, FPD = former preceptor with desire to precept again, CPD = current preceptor with desire to continue, CPE = continuing professional education

Factors/Tools

Examination of the results indicated that there were three statistically significant findings regarding the factors/tools and preceptorship. These are depicted in Table 25, and included the preceptor category, weeks served as a preceptor in the past year, and aware of the free online preceptor training module available through the CDR for 8 CPEs. No other variables were found to have a statistically significant impact on the factors/tools required to successfully provide supervised practice. In this section, results with a higher mean composite score equate to the greater perception of access to the tools that are needed in order to fulfill the preceptor role.

Table 25

RQ1 Variables Impacting Factors/Tools to Precept

		df	*F*	Significance (p*)*
Preceptor Category	Between Groups	5	6.598	*.000
	Within Groups	222		
Weeks Served as a Preceptor in Past Year	Between Groups	4	4.938	.001
	Within Groups	223		
Aware of Free 8h CPE Online Preceptor Training from CDR	Between Groups	1	12.516	.000
	Within Groups	226		

Note. Significance (*p*) = .05, CPE = continuing professional education

There was a statistically significant difference between preceptor categories as determined through one-way ANOVA, $F(5, 222) = 6.598$, $p = .000$. A Games-Howell post hoc was calculated because the assumption of homogeneity of variances for Tukey's was violated (Verma & Abdel-Salam, 2019). The test, as shown in Table 26, illuminated that practitioners who are current preceptors with a desire to continue precepting ($M = 36.10$) identified that they had access to more tools (adequate staff, space, technology, assignment detail, rubrics, etc.) than

those who were non-preceptors with desire to become a preceptor (*M* = 29.78), former preceptors with no desire to precept again (*M* = 29.47), and non-preceptors with no desire to become a preceptor (*M* = 27.27).

Table 26

RQ1 Factors/Tools: Preceptor Category

	CPDC *M* = 36.10	CPND *M* = 27.60	FPDP *M* = 32.33	FPND *M* = 29.47	NPD *M* = 29.78	NPND *M* = 27.27
CPDC	--	*p* = .450	*p* = .080	**p* = .012	**p* = .002	**p* = .000
CPND	--	--	*p* = .855	*p* = .997	*p* = .993	*p* = 1.00
FPDP	--	--	--	*p* = .681	*p* = .623	*p* = .114
FPND	--	--	--	--	*p* = 1.000	*p* = .935
NPD	--	--	--	--	--	*p* = .835
NPND	--	--	--	--	--	--

Note. **p* = .05 statistically significant, *M* = mean. maximum score of 49 points based on the seven questions on the 7-point Likert scale, CPDC = current preceptor desire to continue, CPND = current preceptor no desire to continue, FPDP = former preceptor desire to precept again, FPND = non-preceptor no desire to continue, NPD = non-preceptor desire to precept, NPND = non-preceptor no desire to precept.

There was a statistically significant difference between weeks served as preceptor as determined with one-way ANOVA, $F(4, 223) = 4.938$, $p = .001$. A Games-Howell post hoc was calculated because Tukey's assumption of homogeneity of variances was violated (Verma & Abdel-Salam, 2019). The test revealed, as shown in Table 27, nutrition professionals who were preceptors for 1-13 weeks (*M* = 33.31) identified more access to the tools required to successfully fulfill the role of preceptor than those who did not provide preceptorship over the past year (*M* = 29.37).

Table 27

RQ1 Factors/Tools: Weeks Served as Preceptor in Past Year

	0 *M* = 29.37	1-13 *M* = 33.31	14-26 *M* = 34.33	27-29 *M* = 36.20	40-52 *M* = 39.80
0	--	**p* = .014	*p* = .062	*p* = .067	*p* = .072
1-13	--	--	*p* = .979	*p* = .620	*p* = .289
14-26	--	--	--	*p* = .929	*p* = .467
27-39	--	--	--	--	*p* = .796
40-52	--	--	--	--	--

Note. **p* = .05 statistically significant, *M* = mean. maximum score of 49 points based on the seven questions on the 7-point Likert scale.

One-way ANOVA, $F(1, 226) = 12.516$, $p = .000$, determined a significant difference regarding the perceived access to the tools needed to successfully fulfill preceptor duties between practitioners who were aware of the free 8 CPEs of online preceptor training through CDR (*M* = 34.25) scored significantly higher than those who were not (*M* = 30.16). See Table 28 for the complete dataset regarding awareness of CDR's training.

Table 28

RQ1 Factors/Tools: Awareness of CDR's Free Preceptor Training Program

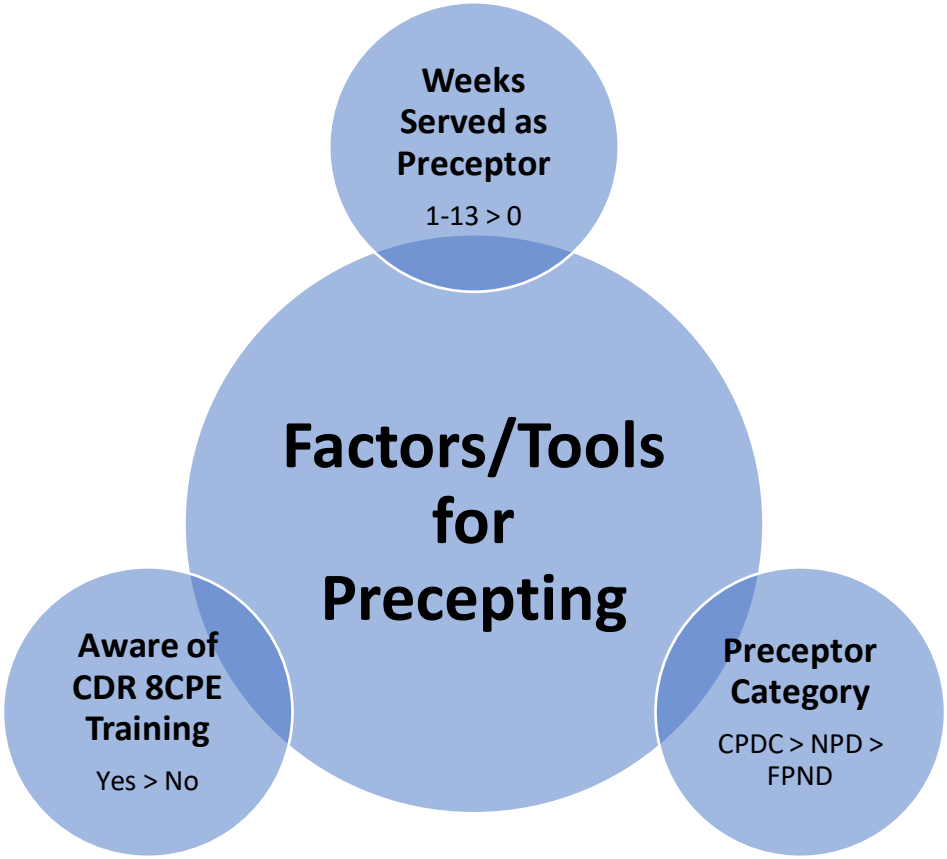
	Yes *M* = 34.25	No *M* = 30.16
Yes	--	--
No	*p* = .000	--

Note. **p* = .05 statistically significant, *M* = mean, maximum score of 49 points based on the seven questions on the 7-point Likert scale.

Post hoc analysis was not needed due to a binary *yes* and *no* question allowing for intuitive discernment of the differences (Verma & Abdel-Salam, 2019). Figure 6 illustrates an at-a-glance perspective of the categories that impact the factors/tools required to successfully provide supervised practice.

Figure 6

Categories that Impact the Factor/Tools Required for Successful Preceptorship.



Note. CPDC = current preceptor desire to continue, NPD = non-preceptor desire to become a preceptor, FPND = former preceptor no desire to precept, CPE = continuing professional education

Factors/Supports

There were six statistically significant findings identified, as depicted in Table 29, after examination of the results. This included employment status, preceptor status, weeks served as a preceptor in the past year, awareness of the preceptor database, 15 CPEs per 5-year recertification cycle, and 8 CPEs available through CDR for free preceptor training. No other variables were found to have a statistically significant impact on the factors/supports needed to successfully provide supervised practice. In this section, results with a higher mean composite score equate to the greater perception of access to the supports that are needed in order to fulfill the preceptor role.

Table 29

RQ1 Variables Impacting Factors/Support to Precept

		df	*F*	Significance (*p*)
Employment Status	Between Groups	4	2.915	.022
	Within Groups	223		
Preceptor Category	Between Groups	5	14.176	.000
	Within Groups	222		
Weeks Served as Preceptor in Past Year	Between Groups	4	16.094	.000
	Within Groups	223		
Aware of Academy Preceptor Database	Between Groups	1	7.769	.006
	Within Groups	226		
Aware of 15 CPE/5y Cycle for Preceptorship	Between Groups	1	12.439	.001
	Within Groups	224		
Aware of Free 8h CPE Online Preceptor Training from CDR	Between Groups	1	19.310	.000
	Within Groups	226		

Note. Significance (*p*) = 0.05, CPE = continuing professional education.

Employment status, identified through one-way ANOVA, was the first statistically significant finding regarding tools/supports and preceptorship, $F(4,223) = 2.915$, $p = .022$. A

Games-Howell post hoc was calculated due to the violation of Tukey's assumption of homogeneity of variances (Verma & Abdel-Salam, 2019). The test, as shown in Table 30, showed nutrition practitioners who are employed full-time (*M* = 41.31) reported higher employer support (value of the role of preceptor by employer and peers, and the program director and instructors' value of the role) than those who were self-employed (*M* = 36.76). This indicates that those who are self-employed, who would ultimately make their own decision regarding preceptorship, might not find value in the role of preceptorship in their current situation, or that they are not feeling valued by the educational programs they potentially could serve.

Table 30

RQ1Facotrs/Support: Employment Status

	Full-Time (40+ h/w) *M* = 41.31	Part-Time (<40 h/w) *M* = 38.01	Unemployed (looking for work) *M* = 34.33	Unemployed (not looking for work) *M* = 39.33	Self-Employed *M* = 36.76
Full-Time (40+ h/w)	--	*p* = .334	*p* = .074	*p* = .976	**p* = .042
Part Time (<40 h/w)	--	--	*p* = .508	*p* = .998	*p* = .937
Unemployed (looking for work)	--	--	--	p = .760	*p* = .844
Unemployed (not looking for work)	--	--	--	--	*p* = .954
Self-Employed	--	--	--	--	--

Note. Significance (*p*) = 0.05 or less, *M* = mean, maximum score of 56 points based on the eight questions on the 7-point Likert scale.

Preceptor category was the second statistically significant finding regarding supports identified through one-way ANOVA, $F(5, 222) = 14.176$, $p = .000$. A Games-Howell post hoc was conducted due to the assumption of homogeneity of variances associated with Tukey's being

violated (Verma & Abdel-Salam, 2019). The findings, illustrated in Table 31, showed current preceptors with a desire to continue precepting (M = 45.95) identified a higher level of support than former preceptors with a desire to serve this role again (M = 5.1071), former preceptors with no desire to precept again (M = 40.86), current preceptors with no desire to continue (M = 40.00) non-preceptors with a desire to become a preceptor (M = 36.22), and non-preceptors with no desire to become a preceptor (M = 34.36). Former preceptors with a desire to precept again (M = 40.86) reported statistically significant access to greater factors/supports than non-preceptors with a desire to precept (M = 36.22) and non-preceptors with no desire become a preceptor (M = 34.36).

Table 31

RQ1 Factors/Support: Preceptor Category

	CPDC M = 45.95	CPND M = 40.00	FPDP M = 40.86	FPND M = 38.13	NPD M = 36.22	NPND M = 34.36
CPDC	--	p = .053	*p = .002	*p = .002	*p = .000	*p = .000
CPND	--	--	p = .995	p = .953	p = .334	p = .081
FPDP	--	--	--	p = .745	*p = .032	*p = .001
FPND	--	--	--	--	p = .931	p = .465
NPD	--	--	--	--	--	p = .858
NPND	--	--	--	--	--	--

Note. *p = .05 statistically significant, M = mean, maximum score of 56 points based on the eight questions on the 7-point Likert scale, CPDC = current preceptor desire to continue, CPND = current preceptor no desire to continue, FPDP = former preceptor desire to precept again, FPND = non-preceptor no desire to continue, NPD = non-preceptor desire to precept, NPND = non-preceptor no desire to precept.

The third statistically significant finding regarding tools/supports, weeks served as a preceptor in the past year, was identified with one-way ANOVA, $F(4, 223) = 16.094$), p = .000. A Games-Howell post hoc was calculated due to the violation of Tukey's assumption of homogeneity of variances (Verma & Abdel-Salam, 2019). The findings, depicted in Table 32, showed that practitioners who did not serve as preceptors in the past year (M = 36.12) scored

significantly lower than those who served 1-13 weeks (*M* = 43.42), 14-26 weeks (*M* = 44.14), 27-39 weeks (*M* = 46.60), and 40-52 weeks (*M* = 48.20).

Table 32

RQ1 Factors/Supports: Weeks Served as Preceptor in Past Year

	0 *M* = 36.12	1-13 *M* = 43.42	14-26 *M* = 44.14	27-39 *M* = 46.60	40-52 M = 48.20
0	--	**p* = .000	**p* = .000	**p* = .002	**p* = .047
1-13	--	--	*p* = .986	*p* = .328	*p* = .527
14-26	--	--	--	*p* = .650	*p* = .677
27-39	--	--	--	--	*p* = .982
40-52	--	--	--	--	--

Note. **p* = .05 statistically significant, *M* = mean, maximum score of 56 points based on the eight questions on the 7-point Likert scale.

One-way ANOVA, $F(1, 226) = 7.769$, $p = .006$), showed nutrition professionals who were aware of the Academy's preceptor database (*M* = 42.21) scored significantly higher thus feel they have access to greater support with the role of precepting than those who were not (*M* = 39.03), as depicted in Table 33.

Table 33

RQ1 Factors/Supports: Awareness of Preceptor Database

	Yes *M* = 42.21	No *M* = 39.03
Yes	--	--
No	*p* = .006	--

Note. Significance (*p*) = 0.05 or less, *M* = mean, maximum score of 56 points based on the eight questions on the 7-point Likert scale.

Table 34 shows that those who were aware that they would be eligible for up to 15 CPEs per 5-year recertification cycle (*M* = 42.29) scored significantly higher than those who were not (*M* = 38.43) as determined through one-way ANOVA, $F(1, 224) = 12.439$, $p = .001$.

Table 34

RQ1 Factors/Supports: Awareness of up to 15 CPEs within 5-year Recertification Cycle

	Yes *M* = 42.29	No *M* = 38.43
Yes	--	--
No	*p* = .001	--

Note. Significance (*p*) = 0.05 or less, *M* = mean, maximum score of 56 points based on the eight questions on the 7-point Likert scale.

Lastly, Table 35 shows how practitioners who were aware of the 8 CPEs for online preceptor training through CDR (*M* = 43.16) scored significantly higher than those who were not (*M* = 38.33) as determined by one-way ANOVA, $F(1, 226) = 19.310$, $p = .000$.

Table 35

RQ1 Factors/Supports: Awareness of CDR's Free Preceptor Training Program

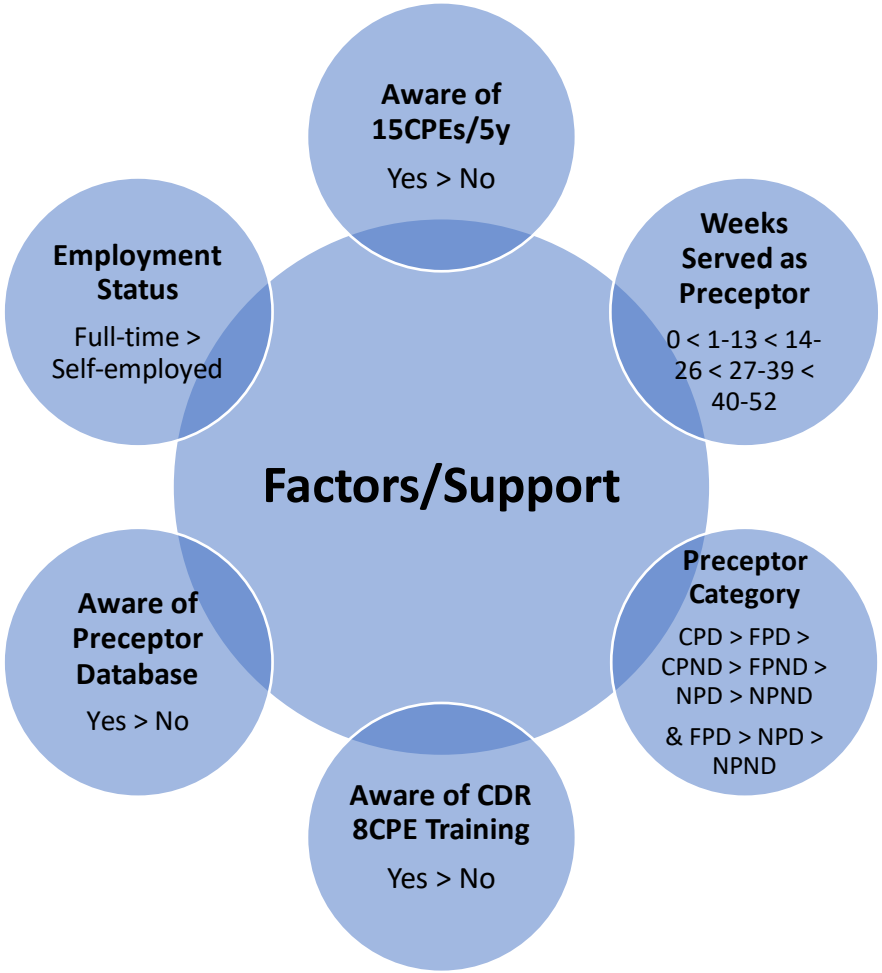
	Yes *M* = 43.16	No *M* = 38.33
Yes	--	--
No	*p* = .000	--

Note. Significance (*p*) = 0.05 or less, *M* = mean, maximum score of 56 points based on the eight questions on the 7-point Likert scale.

Post hoc analysis was not required due to the binary *yes* and *no* questions (Verma & Abdel-Salam, 2019). Figure 7 illustrates an at-a-glance overview of the categories that impact the factors/supports required to successfully provide supervised practice.

Figure 7

Categories that Impact the Factor/Supports Required for Successful Preceptorship



Note. CPD = current preceptor desire to continue, CPND = current preceptor no desire to continue, FPD = former preceptor desire to precept again, FPND = former preceptor no desire to precept again, NPD = non-preceptor desire to precept, NPND = non-preceptor no desire to precept, CPE = continuing professional education.

Total Score

It was determined after evaluation of the results that there were six statistically significant findings regarding the total score, which was a combination of the composite scores for willingness, satisfaction, factors/tools, and factors/resources. These topics, as outlined in Table 36, included preceptor category, weeks served as a preceptor in the past year, awareness of preceptor database, added name to preceptor database, awareness of up to 15 CPEs in a 5-year cycle for precepting, and awareness of the CDR's online preceptor training module that is eligible for 8 CPEs. In this section, results with a higher mean composite score equate to the greater perception of cumulative willingness, satisfaction, and access to the tools and support that are needed in order to fulfill the preceptor role.

Table 36

RQ1 Variables Impacting Total Score to Precept

		df	*F*	Significance (*p*)
Preceptor Category	Between Groups	5	18.891	.000
	Within Groups	222		
Weeks Served as a Preceptor in Past Year	Between Groups	4	12.494	.000
	Within Groups	223		
Aware of Academy Preceptor Database	Between Groups	1	8.370	.004
	Within Groups	226		
Added Name to Preceptor Database	Between Groups	1	8.370	.004
	Within Groups	226		
Aware of 15 CPE/5y Cycle for Preceptorship	Between Groups	1	17.150	.000
	Within Groups	224		
Aware of Free 8h CPE Online Preceptor	Between Groups	1	25.656	.000
	Within Groups	226		

	df	*F*	Significance (*p*)
Training from CDR			

Note. Significance (*p*) = 0.05, CPE = continuing professional education.

There was a statistically significant difference between preceptor category and the total score per the one-way ANOVA, $F(5, 222) = 18.891$, $p = .000$. A Games-Howell post hoc was conducted due to the violation of Tukey's assumption of homogeneity of variances being violated (Verma & Abdel-Salam, 2019). As illustrated in Table 37, the test showed current preceptors with a desire to continue precepting ($M = 197.18$) scored significantly higher than former preceptors with a desire to precept again ($M = 183.73$), non-preceptors with a desire to precept ($M = 174.14$), current preceptors with no desire to continue ($M = 171.40$), former preceptors with no desire to fill this role again ($M = 169.97$), and non-preceptors with no desire to precept ($M = 160.45$). Non-preceptors with no desire to fill this role ($M = 160.45$) scored significantly lower than former preceptors with a desire to precept again ($M = 183.73$) and non-preceptors with a desire to become a preceptor ($M = 174.14$).

Table 37

RQ1 Total Score: Preceptor Category

	CPDC *M* = 197.18	CPND *M* = 171.40	FPDP *M* = 183.73	FPND *M* = 169.97	NPD *M* = 174.14	NPND *M* = 160.45
CPDC	--	*p = .029	*p = .002	*p = .000	*p = .000	*p = .000
CPND	--	--	p = .370	p = 1.00	p = .995	p = .535
FPDP	--	--	--	p = .093	p = .116	*p = .000
FPND	--	--	--	--	p = .961	p = .545
NPD	--	--	--	--	--	*p = .035
NPND	--	--	--	--	--	

Note. *p = .05 statistically significant, *M* = mean, maximum score of 259 based on the sum of 37 7-point Likert scales, CPDC = current preceptor desire to continue, CPND = current preceptor no desire to continue, FPDP = former preceptor desire to precept again, FPND = non-preceptor no desire to continue, NPD = non-preceptor desire to precept, NPND = non-preceptor no desire to precept.

The next statistically significant finding for total score was weeks served as a preceptor in the past year as determined by ANOVA, $F(4, 223) = 12.494$, $p = .000$. The test results, as shown in table 38, showed a statistically lower score for nutrition professionals who did not serve as a preceptor in the past year ($M = 170.46$), than those who served 1-13 weeks ($M = 187.86$), 14-26 weeks ($M = 190.57$), and 27-39 weeks ($M = 198.00$). Although not significant, it is interesting to note that those who provided preceptorship for 40-52 weeks out of the previous year scored the highest in this category.

Table 38

RQ 1 Total Score: Weeks Served as Preceptor in Past Year

	0 $M = 170.46$	1-13 $M = 187.86$	14-26 $M = 190.57$	27-39 $M = 198.00$	40-52 $M = 203.80$
0	--	*$p = .000$	*$p = .001$	*$p = .004$	$p = .099$
1-13	--	--	$p = .974$	$p = .289$	$p = .541$
14-26	--	--	--	$p = .678$	$p = .704$
27-39	--	--	--	--	$p = .975$
40-52	--	--	--	--	--

Note. *$p = .05$ statistically significant, M = mean, maximum score of 259 based on the sum of 37 7-point Likert scales.

As shown in Table 39, nutrition practitioners who were aware of the Academy's preceptor database ($M = 189.72$) scored significantly higher than those who were not ($M = 174.59$) as determined by one-way ANOVA, $F(1, 226) = 8.370$, $p = .004$).

Table 39

RQ1 Total Score: Awareness of Preceptor Database

	Yes $M = 189.72$	No $M = 174.59$
Yes	--	--
No	$p = .004$	--

Note. Significance (p) = 0.05 or less, M = mean, maximum score of 259 based on the sum of 37 7-point Likert scales.

Table 40 shows how those who have added their name to the preceptor database (*M* = 189.08) scored significantly higher than those who have not (*M* = 179.29) per one-way ANOVA, *F*(1, 226) = 8.370, *p* = .004.

Table 40

RQ1 Total Score: Added Contact Information to Preceptor Database

	Yes *M* = 189.08	No *M* = 179.29
Yes	--	--
No	*p* = .045	--

Note. Significance (*p*) = 0.05 or less, *M* = mean, maximum score of 259 based on the sum of 37 7-point Likert scales.

As illustrated in Table 41, practitioners who were aware that they would be eligible for up to 15 CPE per 5-year certification cycle (*M* = 187.23) scored significantly higher than those who were not (*M* = 174.84) as determined through one-way ANOVA, *F*(1, 224) = 17.150, *p* = .000.

Table 41

RQ1 Total Score: Awareness of up to 15 CPEs within 5-year Recertification Cycle

	Yes *M* = 187.23	No *M* = 174.84
Yes	--	--
No	*p* = .000	--

Note. Significance (*p*) = 0.05 or less, *M* = mean, maximum score of 259 based on the sum of 37 7-point Likert scales.

Lastly, as shown in Table 42, those who were aware of the 8 online CPE for preceptor training through the CDR (*M* = 189.72) scored significantly higher than those who were not (*M* = 174.59) as determined by one-way ANOVA, *F*(1, 226) = 25.656, *p* = .000.

Table 42

RQ1 Total Score: Awareness of CDR's Free Training Program

	Yes *M* = 189.72	No *M* = 174.59
Yes	--	--
No	*p* = .000	--

Note. Significance (*p*) = 0.05 or less, *M* = mean, maximum score of 259 based on the sum of 37 7-point Likert scales.

Post hoc analysis was not needed due to the binary nature of the *yes* and *no* questions (Verma & Abdel-Salam, 2019). Figure 8 illustrates an at-a-glance depiction of the categories that impact the total score for preceptor willingness, satisfaction, factors/tools, and factors/support.

Figure 8

Categories that Impact the Total Score for Willingness, Satisfaction, Tools, and Support

Note. CPD = current preceptor desire to continue, FPD = former preceptor desire to continue, NPD = non-preceptor desire to precept, CPND = current preceptor no desire to continue, FPND = former preceptor no desire to precept, NPND = non-preceptor no desire to become a preceptor, CPE = continuing professional education.

Qualitative Data

Challenges associated with the role of preceptorship was evaluated with qualitative data. Data were collected through the open-ended questions 6.2 through 6.4 within the online questionnaire; and questions 1 through 5 of the OSFG/interview. The data were analyzed through an iterative open coding process of the written narrative questions within the online questionnaire being reviewed three times, then tagged and labeled with codes (Neale, 2016). See Appendix H for the online questionnaire, Appendix I for the OSFG questions, and Table 2 on page 45 for the research question alignment.

Willingness

Willingness was explored through the OSFG and interview question 1: "Please share your thoughts regarding factors that impact your willingness to fulfil the preceptor role for students enrolled in ACEND-accredited programs." As detailed in Table 43, the four participants of the OSFG for nutrition professionals who desire to be preceptors identified incentives and altruism as the main factors that impact their decision to be preceptors. Their input corroborated the qualitative online questionnaire data, in addition to offering further examples of potential employer incentives, such as points towards career advancement, that could impact a professional's desire to be a preceptor.

Table 43

OSFG Question 1: Reasons that Impact Preceptor Willingness

Open Code	Properties	
Altruism	Giving Back to Profession	"It is our way of giving back to, you know, the programs, the students. We all started there" (P4) "I'm rather young. I'm only like three years into my career as a dietitian. And so, I know how important it was for me to be able to have preceptors in order to

Open Code	Properties	
		become a dietitian, so I don't want anyone to feel as though they can't become a dietitian because they have trouble finding a preceptor, or there aren't enough of them" (P2)
Incentives	Keep Current Skills	"Being connected with students, with programs, is also a way for me to, like, stay current and connected with the dietetics community at large" (P3)
	Advancement	"We found within our own institution, if we provide incentives for our dietitians to become preceptors, that have been beneficial… We had the continuing learning program where if you participated in studies or a lot of other incentives to get points towards increasing your staff level. And so, we gave points for being a preceptor that went with their learning plan. And that could get them to a high level over a period of time" (P5)
	Staffing	"Every year, we come up with a staff to intern ratio, so that definitely impacts and certainly we have a rotating basis where every year someone will be a preceptor, but not necessarily the same individual" (P5)
	CEUs	"Continuing education credits for me and being able to have a resource there where it's free for me to pursue, as well as, like, we or the program get something in return out of it has been something that I've been able to pitch to my employer, and be like, 'hey, we can do this, we're going to benefit, I'm going to benefit, as like a win-win kind of for everybody" (P3)

Note. P = Participant, CEUs = continuing education units.

The interview participant who did not wish to become a preceptor identified her time in the position and being a new RD along with feelings of inadequacy or incompetence, followed by the need for facility approval as the main reasons that affect her desire to be a preceptor, as shown in Table 44. These reasons support the qualitative data from the online questionnaire.

Table 44

Interview Question 1: Reasons that Impact Preceptor Willingness

Open Code	Properties	Examples of Participant's Words
Preceptor Competency	Time in Position	"I'd like to feel more comfortable in my position… I'm very fresh at this. So, it's um, I personally would feel a little bit better being someone's teacher in maybe like six months after I have gotten a little bit more accustomed to this position, this location" (P1)
Employer	Facility Approval	"Another factor would be whether the facility would let me do that or not. I'm not even sure if they allow interns" (P1)

Note: P = Participant.

Satisfaction

Satisfaction was examined with the OSFG and interview question 2: "What factors impact your satisfaction to fulfill the preceptor role?" The four OSFG participants who desire to be a preceptor identified altruism, incentives, and setting of supervised practice as factors that support their satisfaction in the role of precepting, as shown in Table 45. This supports the qualitative data from the online questionnaire, with the addition of promoting the profession of nutrition and dietetics to outside professions, and the inclusion of non-traditional supervised practice experiences.

Table 45

OSFG Question 2: Reasons that Impact Satisfaction

Open Code	Properties	
Altruism	Giving Back	"The most important factor is giving back to our profession and ensure that students really have a solid learning base to get started" (P5)

Open Code	Properties	
	Promote Profession	"I really enjoy watching how my non-dietitian coworkers see our interns and now see our profession by having interns" (P3)
Incentives	Staying Current	"I learn so much from the students, even though I really haven't been out of school that long, but sometimes they bring such a fresh perspective that… it's super satisfying to feel like I'm learning as much from them as they're hopefully learning from me" (P2)
		"You see them grow… eventually they come to me and then sometimes we hire them. That's the biggest satisfaction, right? That you have somebody who's got trained in your own organization. And they've done well, you know they've made it, you know, and they've influenced you… and then join us" (P4)
Setting	Non-Traditional Practicums	"There's very few programs where you have a general internship, or a general focus, and I was always excited to provide my interns, as well as those students I precept, with some leadership programs. With looking at how to do strategic planning and those type of things. And they found that very exciting, and that gave me satisfaction to do something outside of the clinical realm" (P5)

Note: P = Participant.

The interview participant, who does not wish to be a preceptor, discussed time and student willingness as factors that would impact her satisfaction if she were to fulfill this role. This supported data from the online questionnaire. Table 46 provides examples of her quotes regarding satisfaction.

Table 46

Interview Question 2: Reasons that Impact Satisfaction

Open Code	Properties	
Time	Insufficient Time	"I know that there's most likely paperwork involved with it… as long as I have time to dedicate to put in, like, all the back-work required…" (P1)

Open Code	Properties	
Skills	Student Willingness	"I would hope someone that was, like, a willing learner. But, at this point, if you get into your internship and you're not a willing learner, that's a problem" (P1)

Note: P = Participant.

Challenges

Challenges to the preceptor role were examined through the OSFG and interview question 3 and the online questionnaire questions 6.2 through 6.4.

Online questionnaire question 6.2 inquired: "Describe the top three reasons that impact your choice on whether or not to be a preceptor." Participants listed a variety of reasons that impact their decisions on whether or not to be a preceptor. Among these reasons were time, staffing, expectations, altruism, appreciation, preceptor competency, employer issues, incentives, and space. See Table 47 for examples of participant words regarding the challenges to be a preceptor. Demographic information for the quoted online questionnaire participants is available in Appendix N.

Table 47

RQ1 Online Questionnaire 6.2: Reasons That Impact Choice to be a Preceptor

Open Code	Properties	
Time	Workload	"My caseload always exceeds my available hours so when I need to make time to train a student and review their work, I fall even further behind and end up staying over on unpaid OT to finish my work" (P170) "I have had several interns over the past 5 years. When having an intern, I have had to stay over my 8 hours to complete my work or to review their work without pay because overtime is frowned upon at my job… The constant interruption throughout the day while I am

Open Code	Properties	
		charting, Increase (sic) my chance to have charting errors" (P207)
		"After a couple of weeks of precepting, dietetic interns can decrease my workload" (P205)
	Work Part Time	"I am only employed 20 hours per week. If I fall behind on my work as a result of taking time out of my schedule to precept, there is no one else to share the workload with" (P186)
		"Currently I am working part time (self employed) (sic) and working fully remotely (telehealth/video calls). No opportunity to offer preceptorship" (P199)
	Insufficient Staffing	"Staffing at work" (P113)
		"Limited time and insufficient staffing are major limitations" (P124)
	Stress	"My role as an eating disorder clinician is already emotionally demanding, and it often feels more draining when I also have interns joining me at work, even if they're just shadowing" (P174)
		"It is stressful to do my job and get my work done and Also be responsible for teaching An (sic) intern and overseeing an intern's notes" (P207)
	Length of Rotation	"Logistics; outpatient/community rotations are often very short. However, our organization has its own set of standards, including backgrounds checks, immunization, etc. to verify, prior to allowing a volunteer or intern on site. Many times (sic) the resource input is too much for an intern who will only be on site for less than a week" (P186)
		"Length of time of the rotation – 2 weeks is too short to be meaningful" (P182)
Setting	Acuity Level	"This is a tertiary care referral center and many (most?) patients are not really good for entry level training" (P11)
		"I currently work in private practice with clients with eating disorders. My clients do not feel comfortable

Open Code	Properties	
		having another provider in the room during sessions" (P134)
	Number of Students	"Number of students at one time" (P54)
		"Number of interns at one time" (P94)
	Intern Interest	"Lack of student interest in my content area" (P100)
		"I work in LTC/rehab and when interns are with us for their rotation, they aren't truly invested unless they want to work in the LTC/rehab setting" (P145)
	Remote Work	"Current role (private practice vs employed by a hospital or other entity)" (P71)
		"Working remote – would remote work situation be useful and valuable for an intern" (P179)
	Education Setting	"My position as an educator at the college level is not an appropriate opportunity for preceptorship" (P28)
		"I am an educator in post-professional graduate program. I am a distance faculty member and I work at home therefore I don't have the opportunity to precept because of my position" (P50)
Expectations	Curriculum	"Projects that would be useful for both me and the intern – would want to make sure the projects I give the intern are useful for their learning and also useful for my work/projects" (P179)
		"I am able to get projects/handouts done that I don't always have time for" (P205)
	Intern Preparedness	"I have had to develop screening tools to eliminate interns I anticipate might be poor communicators, unwilling to learn, late, etc." (P174)
		"The particular skills of the intern and their initial display of professionalism or not" (P106)
Altruism	Giving Back to Profession	"I like to do something that helps future dietitians" (P53)

Open Code	Properties	
		"Being a preceptor is a chance to give back to the dietetics profession and support young people in learning about career opportunities in the field. I am proud to be qualified and supported at my workplace to serve as a Preceptor" (P122)
		"I feel it is a duty of our profession" (P17)
Appreciation	Burned Out	"After 10 years in the profession, I was completely burned out and hate it now, especially the sheer futility of my efforts and the miniscule pay" (P170)
		"Burned out after doing it for years" (P213)
	Unappreciated	"Acting as a preceptor is not valued in consideration for career advancement" (P32)
		"I don't always feel appreciated by interns. They might not understand the burdens of educating them for long hours" (P174)
		"The Senior Leadership Team at our facility does not value Nutrition services because we do not bring in a great deal of money, and the actual contributions we make are not a consideration. This has been made clear, time and time again, by inadequate staffing in the face of documentation that we could use at least one more FTE. This has resulted in a very demoralizing effect on the team and have become cynical to the point where we do not encourage students to go into the field" (P169)
Preceptor Competency	Time in Position	"I'm in an entry level position" (P81)
		"Length of time in current position" (P21)
Employer	Red Tape	"Working in federal government, there is a high red-tape process to onboard student interns, and we cannot guarantee quick access to internal drives and systems with security clearances required" (P118)
	Not Allowed	"My company does not allow interns to chart on residents (and have me co-sing their notes) so having an intern shadow me seems a waste of a day" (P145)

Open Code	Properties	
		"Department head is not supportive of that role" (P119)
	Required	"Being a preceptor is not a choice at my facility. It is required" (P57)
		"I can't choose – it became part of the job I had been doing: interns were brought in and then I either had to precept or quit (I had no say – the internship pays the hospital money so it's a money-making program (sic) but it brings more job duties and stress upon me with the same productivity expectations for no extra money or benefit" (P137)
Incentives	Money	"My gardener makes a better hourly wage than I do (sic) and I have a MS degree" (P170)
		"As a private practice owner, I am not compensated in any way for additional time/energy spent with interns. It would be nice if internship programs provided some financial support or other compensation for our time" (P174)
	Keep Current Skills	"Wanted to stay abreast with current research" (P63)
		"Wanting to keep up with the profession" (P13)
Space	Small Office	"Space limit at my work" (P41)
		"My 32 hours per week position does not have space for an intern to work other than at my desk/computer" (P65)
	Insufficient Resources	"Availability of computers" (P84)
		"Limited computer space for students" (P159)
		"Sometimes access to computer is limited, last time limited access to EMR so that was challenging" (P189)

Note. P = Participant, OT = over-time, LTC = long-term care, EMR = electronic medical record.

Online Questionnaire Question 6.3 asked: "Describe the three most important resources a preceptor would need to successfully provide supervised practice to a nutrition and dietetics student." The most important resources to successfully provide preceptorship, as identified by

the online questionnaire participants, included time, space, support, incentives, references, and skills, as detailed in Table 48.

Table 48

RQ1 Online Questionnaire 6.3: Most Important Resources to Successfully Provide Preceptorship

Open Code	Properties	
Time	Decreased Workload	"Workload balance/time and if no workload relief is granted then additional compensation for increased workload" (P214)
		"Balanced work load to prevent burnout" (P154)
	Time to Teach	"A learning environment that allows a preceptor to spend quality time with there (sic) 'student' vs worrying about their large work load" (P150)
Space	Dedicated Work Space	"… Space within their usual work environment to meet one-on-one with the students" (P38)
		"Enough space for an intern" (P73)
Support	Coworkers/Peers	"Having a dietetic technician to do some of the things RDs can do" (P171)
		"Support from coworkers and the workplace team" (P154)
	Administration/Management	"The most important is support for being a Preceptor from your workplace leadership" (P122)
		"Adequate staffing based on senior leadership understanding that Nutrition is important and not just nursing. Nurses rule the system, which is fine, but they need to support the clinical support disciplines in kind" (P169)
	Information Technology	"Technology (laptops, printers)" (P48)
		"Adequate equipment to precept (computers)…" (P57)

Open Code	Properties	
	Program Director	"Support from program directors on how to provide feedback" (P17)
		"List of expectations for learning experiences and understanding of paperwork" (P43)
		"Communication with program director" (P21)
	Mentorship	"Mentor for the preceptor to check in with re: how/what to do/best practices" (P199)
		"A network with preceptors to provide support" (P73)
Incentives	Compensation	"Paying the preceptor might be enticing to some preceptor (sic)… Offer more CE for taking on an intern" (P207)
		"Compensation (financial and/or professional CEUs)" (P35)
References	Curriculum	"Detailed learning competencies" (P49)
		"Clear instructions and everything that needs to be covered" (P138)
	Preceptor Guidebook/Orientation	"Guidebook. Evaluations. Expectations" (P22)
		"Orientation for preceptors" (P23)
Skills	Preceptor Willingness	"A willingness to teach" (P87)
		"Staff who are willing to have them" (P90)
		"Energy and passion are curial to successful precepting" (P19)
	Student Willingness	"Willingness from student" (P21)
		"Interest in practice field by student" (P39)
	Student Experience	"Students with a STRONG educational base when they arrive" (P2)

Open Code	Properties	
		"Well prepared interns" (P176)

Note. P = Participant, CE and CEU = continuing education unit.

Online questionnaire question 6.4 stated: "What can a program director/course instructor do to make the role of the preceptor easier?" Participants identified five different resource areas, detailed in Table 49, that a program director could provide that would make preceptorship an easier role to fill. These topics included communication, student readiness, support, references, and compensation.

Table 49

RQ1 Online Questionnaire 6.4: Program Resources to Make Precepting Easier

Open Code	Properties	
Communication	Orientation	"Provide some sort of orientation (prerecorded or live) of the program, student expectations, and assignments on the rubric" (P216)
	Check-in	"An email to touch base and provide their contact information – it is awkward asking the DI for the information when something goes wrong" (P216)
	Feedback Opportunities	"Provide opportunities for feedback from providers" (P13)
Student Readiness	Courses	"Assess them before they get to us! Undergraduate programs vary widely in the student's preparation and it would be nice to know just how much they know. Some have never had medical terminology, some have never written a PES statement, and some can't do basic algebra" (P10)
	Student Professionalism	"Communication is key! Stress the importance of contacting your preceptor well before your rotation to their students so appropriate accommodations can be made for the student, remind students that preceptors are volunteering

Open Code	Properties	
		their time to teach while also keeping their full work load so to be respectful of that time and BE ON TIME…" (P16)
Support	Less Paperwork	"Not require them to go over the homework. Just allow the students to get experiential learning and complete competencies along side (sic) the RDN doing her job" (P88)
	Contracts	"Minimize the burden on the preceptor for getting contracts and arrangements in place" (P35)
	Availability	"… Be available to answer questions/hear concerns on the interns that are placed with the preceptor" (P212)
	Flexibility	"Give preceptors flexibility when working with students. I appreciate when educators provide a solid outline of which competencies an intern should accomplish during a rotation, but when directors create schedules/projects/rubrics to meet the competencies that are too rigid and don't allow for the unique opportunities that site may present. This usually creates more work for me as a preceptor and forces me to prioritize some "busy work" projects that are mandated by the internship rather than finding projects that would be beneficial to my organization" (P79)
	Part-Time Options	"Offer part time internship options for precepting facilities if time is an issue, intern isn't there every day and RDs will have time each week to catch up on work" (P46)
References	Digital Forms	"Provide organized, electronic forms/evaluations" (P38)
	Syllabus	"Helpful guidelines/syllabus" (P87)
	Competencies/Assignments	"Ideas that will help meet different competencies" (P63)
	Rubrics	"Well defined rubrics/learning outcomes" (P33)

Open Code	Properties	
Compensation	Money	"Discuss with RD's employer to ensure she has the time to work with students, arrange for some type of compensation ie (sic) overtime, earn time off, bonus, etc. gift card" (P48)
	Access to Resources	"University service/resource offered to preceptors for compensation" (P141)

Note. P = Participant, DI = dietetic intern, PES = problem/etiology/signs and symptoms (nutrition diagnosis statement).

The OSFG and interview question 3 asked: What are the main challenges that you associate with fulfilling the preceptor role? The four nutrition professionals who desire to be preceptors and participated in the OSFG discussed the main challenges that they associated with the role of a preceptor. As shown in Table 50, they identified the primary challenges of time and curriculum, which supports the data from the online questionnaire. They also identified the lack of consistency of a defined schedule from day-to-day.

Table 50

OSFG Question 3: Challenges of the Preceptor Role

Open Code	Properties	
Time	Length of Rotation	"The biggest challenge is trying to fit everything I do into two weeks and hope that they get enough out of each area to, you know, help them learn" (P2)
	Insufficient Time	"One of the challenges… is finding time to both take care of your patients and to teach or managing like a schedule and kind of fitting everything in" (P3)
	Daily Variety	"I think the biggest challenge is you really don't know working in clinical what your day is going to look like. So, you could be having so many patients on a particular day, and then you have the intern. Like I said, with age and experience you learn how to manage the students and your workload, but then

Open Code	Properties	
		I have, you know, sort of colleagues who are really new and they get overwhelmed" (P4) "Every day is different in my foodservice operation as well, and some weeks it's crazy busy and some weeks it's slow" (P3)
Support	Curriculum	"Some of our programs give us, like, no direction which I kind of prefer because then it can allow for some of these things that have come up and especially with all the craziness as of recent. But some of our programs have, like, very strict standards and specific projects and things that have to be done. And oftentimes that can make more work for me and our staff" (P3) "Over the years, we've had the standard projects that we give to all interns or students that we bring in, but we over the years haven't received a good feedback with regards to the task or being mundane, or they're not learning from these experiences. And so, we identify at the beginning of the year some key projects, and people have an opportunity to opt for those experiences that would resonate with them most" (P5)

Note: P = Participant.

The participant of the interview, who does not wish to be a preceptor, identified perceived self-competence and space as the primary challenges of becoming a preceptor. These align with the data from the online questionnaire, and examples of quotes can be found in Table 51.

Table 51

Interview Question 3: Challenges of the Preceptor Role

Open Code	Properties	Examples of Participant's Words
Preceptor Competency	Time in Position	"I guess the challenge would be being, like, an adequate trainer. I don't want to, I don't want to, like, stink at it and not be able to teach them well. Um, so

Open Code	Properties	Examples of Participant's Words
		I guess that's what my own personal concern for my shortcomings" (P1)
Space	Dedicated Work Space	"Space, actually. I'm quite literally, my office is, um, it is a little bit bigger than a closet. So, you know, you can't fit two people in there; not too well. I'm not sure if you'd be able to work effectively in that little space" (P1)

Note: P = Participant.

Research Question 2: What solutions do nutrition and dietetics professionals identify to combat preceptor shortages within ACEND accredited programs?

Questions 6.5 and 6.6 in the online questionnaire and question 5 through 6 of the OSFG/interview evaluated qualitative variables pertaining to potential solutions to combat preceptor shortages through open-ended questions. See Appendix H for the online questionnaire and Appendix I for the OSFG/interview questions.

Qualitative Data

Solutions

Solutions were explored through the OSFG/interview questions 4 through 5, and the online questionnaire questions 6.5 to 6.6. See Appendix H for the online questionnaire questions and Appendix I for the OSFG questions.

The online questionnaire question 6.5 asked: "What solutions do you identify to combat preceptor shortages within ACEND-accredited programs? Participants identified a variety of potential solutions to combat preceptor shortages. These solutions, as outlined in Table 52, included items that could be addressed through ACEND and CDR standards, various modes of support and encouragement, incentives, and college and university practices. Demographic information for the quoted online questionnaire participants is detailed in Appendix N.

Table 52

RQ2 Online Questionnaire 6.5: Solutions to Combat Preceptor Shortages

Open Code	Properties	
ACEND/CDR Standards	Standardize Guidelines	"Provide standardized guidelines for the role of the preceptor so there is not variation in expectations by each school" (P4)
	Increase CPE	"I think the recent decision to give CERPs to preceptors is a step in the right direction" (P16)
		"15 CEs over 5 years is an insult to the job, let's actually show the appreciation for folks willing to put in the extra time and effort to train future dietitians" (P17)
	Decrease Fees	"… free membership with ACEND for precepting? It would be nice if there were a way to be paid without having students go more into debt" (P148)
	Literature for Employer	"Create literature to share with employers about ways to support employees who choose to be preceptors" (P66)
		"Maybe advertising interns as the tremendous benefit that they are… help with billing, office tasks, publicity, social media, etc. They can help increase the productivity of a business" (P91)
	Grants	"Maybe ACEND can consider grants being made available to those who will support these programs" (P75)
	Accept Telehealth	"Telehealth may provide some great options for distance and otherwise" (P91)
	Increase Virtual Hours	"Need to find virtual presentation and preceptors who are clever in virtually" (P126)
		"Offer virtual preceptor options" (P184)

Open Code	Properties	
	Specialty Credential	"Consider a certification course and preceptor credentials title" (P221)
Support/Encouragement	Decrease Workload	"It would also be nice if some of the preceptor's work load could be taken off while teaching a student (sic) so they have the time to dedicate to that student" (P16)
	Adequate Staffing	"I feel that often staffing is so tight that dietitians feels (sic) stressed to complete their job duties w/in the allotted time, adding a student adds to this load and that is not always appreciated by administration" (P198)
	Recognition	"Compensation and/or recognition by employer that precepting demands time and effort which impacts productivity" (P155)
	Legal/HR	"Large corporations make it difficult to precept. Legal departments get involved to obtain students" (P64)
		"In our clinic, the human resource process of getting the student cleared (ie. (sic) Background checks) was a big hurdle. I think it would be a good idea to reach out to human resource departments to identify liability issues that I think might be a big reason why many companies are not willing to take on students. They have to go through "new employee" training which can be extensive" (P220)
Incentives	Monetary	"RDs are underpaid and undervalued, because of this aspect some RDs don't want to help out because they feel it is not "worth it" (P87)
		"Offer incentives for employees (ie. (sic) Money, additional PTO days, etc (sic)) to take on the role of preceptor" (P78)
	Reference Books	"Perhaps consider a service or resource (book) from the college/university itself as compensation to preceptor" (P141)

Open Code	Properties	
	Scholarships	"Pay differential while precepting or scholarship money for preception (sic)" (P123)
Colleges/Universities	Student Readiness	"Educational program (sic) do not produce students who are ready for internships therefore preceptors are educating on basics. They should have completed a multitude of case studies and be ready for real interaction and problem solving" (P2)
	Decrease Program Capacity	"Reduce capacity for bachelors and internship programs" (P12)
	Saturation	"I am in a very 'saturated' market…… several long-time existing programs plus I often receive calls from students in distance programs asking for the opportunity to complete rotations at my hospital. Currently, we only take students from programs within the state" (P23)
	Encourage Alumni to Precept	"Have internships stay in touch with recent graduates and ask their alum to support preceptorship for their new batch of interns" (P91)
		"Recruit recent graduates" (P172)

Note. P = Participant, CERPs/CE = continuing education credits, PTO = paid time off.

OSFG/Interview question 4 inquired: "What solutions do you identify to combat preceptor shortages within ACEND-accredited programs?" The four participants of the OSFG, as detailed in Table 53, supported the findings of the online questionnaire's qualitative data and identified incentives/compensation and the reduction of the "red tape" required to onboard a student. In addition, they suggested recruiting recently retired and competent nutrition practitioners to help lighten the load, and to establish a suggested preceptor to student ratio.

Table 53

OSFG Question 4: Solutions to Preceptor Shortage

Open Code	Properties	
Incentives	Compensation	"If you're a preceptor, you get so much money off of going to FNCE, or something to motivate people… Or money off of your state membership fees to your Academy" (P2)
	Free Resources from the Academy and ACEND	"Have resources from the Academy, from ACEND, about, like, how to be a great preceptor… Going into this as younger RDs who are like, 'do we have enough knowledge to actually be effective preceptor and mentor, when we were like, literally just in your shoes?' So, having those types of resources, I think, would again help recruit so that we can have a workforce that feels like 'I can be a competent, confident preceptor'" (P3)
Support	Red Tape	"Hospitals got very strict with students coming back in as interns, even though we are teaching hospitals, you know, I think they were able to come in, but they have a lot of other criteria they had to meet. And I think sign more stuff in the contract… contracts are so overwhelming for the program" (P2)
	Preceptor to Student Ratio	"What's happening in this program is that there's one preceptor and four or five students. And they each have their own set of patients that are taking care of. So, what we are feeling, as you know, clinicians, is that they're not getting the real experience from the point of view, they're saying they're just seeing about a couple of patients a day because the preceptor can only check and guide five different students with different patients, even if you give them two each, it's like eight, but still a lot when you know they're in the beginning of the rotation" (P4)
Recruitment	Recruit Retirees	"One of the things, certainly being much more mature person in the group, reaching back to some of those people that have really retired. So, you're bringing in students and they're volunteering in a sense, but sometimes you need volunteers and they may not necessarily be staff. And so, we have tried that, it can work, and individuals that certainly that are competent,

Open Code	Properties	
		but recently retired, enjoy precepting with those type of experiences" (P5)

Note: P = Participant.

Table 54 details how the participant of the interview, who does not wish to be a preceptor, identified incentives/compensation as a potential solution to the preceptor shortage within ACEND-accredited programs. This aligns with the qualitative data from the online questionnaire. In addition, she identified advertising as a means to impact professionals who may be on the fence about becoming a preceptor, and a mentorship opportunity to connect seasoned and new preceptors.

Table 54

Interview Question 4: Solutions to Preceptor Shortage

Open Code	Properties	
Incentives	Compensation	"Maybe a reduction on membership rate."
	Mentorship	"Advice from previous preceptors, people that were preceptors, and that they would give you some pointers, tips, or like, (sic) techniques that they've used that have been helpful" (Participant 1)
Recruitment	Advertising	"Reaching out to people that haven't necessarily been preceptors but haven't expressed disinterest. You know? Maybe they just aren't sure what steps would be. So, advertising, reaching out to people" (Participant 1)

Note: P = Participant

Online Questionnaire Question 6.6 stated: "There currently isn't an industry standard regarding preceptor to student ratio within ACEND-accredited programs. Explain the ratio you think would promote an optimal preceptor-student experience." The majority (49.7%) of online questionnaire respondents listed one preceptor to one student as an ideal ratio. Followed by 1:2

(17.2%), 2:1 (13.5%), 1:3+ (12.9%), and no industry standard recommended (6.7%). See Table 55 for frequencies and table 56 for participant quotes regarding preceptor to student ratios.

Table 55

RQ2 Online Questionnaire 6.6 Recommended Preceptor to Student Ratios

	Ratio	Frequency	Percent	Valid Percent
Valid	1:1	81	35.5	49.7
	1:2	28	12.3	17.2
	1:3+	21	9.2	12.9
	2+:1	22	9.6	13.5
	No Standard	11	4.8	6.7
	Total	163	71.5	100.0
Missing	System	65	28.5	
Total		228	100.0	

Table 56

RQ2 Online Questionnaire 6.6: Preceptor to Student Ratios Narrative

Open Code	Properties	
Defined	1:1	"The reason for this being that the more one on one time you have the more deep (sic) you can go into skills, education, etc. In my experience when I have more than 1 student inevitably one rises above the other while one hangs back. It's human nature. In addition (sic) it is hard to spread projects out evenly to allow for the most diversified experience" (P65)
	1:2	"No more than 1 preceptor to 2 students at a time. Especially if the preceptor is a full-time employee" (P75)
	1:3+	"5 students to one preceptor feels optimal. I personally was in a clinical rotation where this ratio existed and felt that the preceptor was able to adequately address all of our questions, provide feedback and administer efficient lecture-style lessons when we needed it. The preceptor did not seem strained, was punctual and enthusiastic" (P154)
	2:1	"One student to 2 dietitians. This allows for time for dietitians to work without an intern by rotating days or weeks and prevents burnout. Depending on the setting and length of

Open Code	Properties	
		rotation more dietitians could be appropriate to diversify interns (sic) exposure" (P53)
Undefined	No standard	"I don't think there should be a standard, this will only enhance the current problem of not enough preceptors to a higher level" (P2)

Note: P = Participant

OSFG/Interview question 5 inquired: "What suggestions do you have for alternate experiences, or alternate activities, to meet the supervised practice hours required of ACEND-accredited programs?" As outlined in Table 57, the four participants of the OSFG who desire to be preceptors, listed accepting more alternative sites as a potential way to meet the supervised practice needs of students. This aligned with the qualitative online questionnaire data. Additionally, establishing alternative assignments, accepting distance hours, and establishing emergency preparedness guidelines that all programs can use. Also listed was providing an opportunity for the student to give the preceptor feedback.

Table 57

OSFG Question 5: Alternate Experiences to Meet Supervised Practice Requirements

Open Code	Properties	
ACEND/CDR Standards	Establish Emergency Preparedness Curriculum	"I think, the nice thing is that at least the COVID experience has shown us that there's no, I guess, nothing is really an alternate experience so that we can find value in giving you valuable things to do, so no matter, like whether you're working from home, whether you're in a school cafeteria" (P3)
	Distant/Virtual Hours	"If a particular dietitian is not feeling well, or something's happened in the hospital, like they're closed for COVID, they have alternate, you know, study assignments or, you know, some presentations that they have to make, some posters, or something

Open Code	Properties	
		that they can take care of so that they meet those supervised practice hours and they get counted" (P4)
Setting	Non-Traditional Sites	"We have those legislative offices where I think would be great experiences for students to be involved in policy and learning how to talk to Legislators" (P5)
Preceptor Competence	Feedback Opportunity	"When I was in my internship, after every rotation as an intern we evaluated our preceptors and gave them feedback on like, how we learned, and what we wanted to see differently... the program where I'm at now, they don't do anything like that… I think it would make me a better preceptor, but also help them learn better" (P2)
		"You need to know whether you're doing your job, too" (P4)
		"I haven't had a lot of internship programs that have come through that have had any sort of evaluation for the preceptor part of it. And I would love to see that" (P3)

Note: P = Participant.

The participant of the interview, who does not desire to be a preceptor, identified increasing the acceptance and availability of supervised practice at alternative sites, as shown in Table 58. This corroborates the online questionnaire feedback.

Table 58

Interview Question 5: Alternate Experiences to Meet Supervised Practice Requirements

Open Code	Properties	Examples of Participant's Words
Setting	Non-Traditional Sites	"I know that there were a couple areas that in my internship we didn't necessarily have, like, a rotation in… specifically eating disorders was something that I noticed that was kind of like, not necessarily heavily covered. And, I'm not sure if there's any sort of, like, legally with that or if, like, people don't feel comfortable. I can imagine that would be kind of something that someone might not really want too many people in on.

Open Code	Properties	Examples of Participant's Words
		But, let's see, I would have, I guess, liked to see more psychiatric care" (P1)

Note: P = Participant.

Conclusions

The nutrition professionals that participated with the online questionnaire identified seven overall categories that impacted their decision to be a preceptor. Unsurprisingly, those who self-identified as a current preceptor with a desire to continue precepting scored higher than all other categories. Those practitioners who were aware of the preceptor database and had added their name to the database, in addition to those who were aware of the 15 CPEs for preceptorship every 5 years, and the 8 CPEs of online preceptor training all scored higher on their overall willingness, satisfaction, and access to tools and supports needed to successfully fulfill the role of preceptor. Although it was not statistically significant, those who served as a preceptor for 40-52 weeks out of the year were most likely to be willing and satisfied within the role.

Participants identified time, space, compensation, altruism, and support as the main topics that impact their decision on whether or not to fulfill the important role of preceptorship. Incentives such as recognition and compensation (i.e., increased wages or access to resources such as textbooks, library databases, and/or decreased membership fees) were identified as ways to increase willingness to perform preceptor duties. Solutions to preceptor shortages included increased CPE options for preceptorship, grant availability to cover the extra expense of students, and accepting more nontraditional supervised practice experiences (i.e., telehealth/remote work, research, industry, and eating disorder clinics). The ratio of one preceptor to one student was preferred by the majority of respondents.

This chapter detailed the statistical findings of the quantitative data obtained through the online questionnaire, and the qualitative data gathered through the open-ended questions within the online questionnaire and through the interview and focus group sessions. The next chapter will provide a summary of the findings, an interpretation of the results, the impact of this study for recruiting and retaining preceptors within ACEND accredited programs, and recommendations for further research.

CHAPTER 5. CONCLUSIONS AND RECOMMENDATIONS

Registered Dietitians (RDs) and Dietetic Technicians, Registered (DTRs) are nutrition experts who attended programs approved by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) and that are credentialed through the Commission on Dietetic Registration (CDR) (Slawson et al., 2013; Academy of Nutrition and Dietetics, 2019d, 2019a). There are two program pathways to the RD and DTR degrees. RDs can go through a bachelor's coordinated program (CP) in which 1,200 hours of supervised practice is built into the program, or through a bachelor's didactic program (DPD) with an additional requirement for an external 1,200 hours of supervised practice experience must be completed before the graduate is eligible to take the registration exam through CDR.

According to ACEND (2019b), there are 62 CPs, 213 DPDs, and 261 Dietetic Internships (DIs). There will ultimately be more students enrolled in DPDs due to their availability. Entrance into external supervised practice experiences is a very competitive process in which a little under half of eligible DPD graduates are ultimately unmatched. ACEND requires all programs to disclose information regarding the supervised practice requirement on their webpages. Students who enter into DI programs are aware that they will need external supervised practice after graduation from their program in order to be eligible to take the CDR credentialing exam to earn the title of RD.

A past-president of Academy of Nutrition and Dietetics stated, "One of the most pressing issues facing our Academy and our profession is the shortage of internships… we need preceptors to work with potential interns" (Crayton, 2016, p. 561). Since there is a shortage of nutrition professionals who are willing to be preceptors, the competitive process of being matched can remediate students who are not as strong as their counterparts who may find greater

success in the supportive role of the DTR credential. Of note, there are also master's degree programs that are available with built-in supervised practice (Accreditation Council for Education in Nutrition and Dietetics, 2016c, 2016d, 2016e).

ACEND (2019b) reported a total of 31 DT programs. DTR education can be granted through the traditional associate's degree pathway with 450 hours of supervised practice included or the 2009 pathway that granted unmatched graduates of DPD programs to take the DTR exam (Accreditation Council for Education in Nutrition and Dietetics, 2016b, 2019a). Although this alternative pathway to the DTR credential is a great option for unmated bachelor's degree students, it is an additional 2 years' time and money to obtain the same practice credential as the traditional pathway's associate's degree with supervised practice.

There is a notable shortage of nutrition and dietetics professionals in the field who are willing to fulfill the role of preceptor (Crayton, 2016). A preceptor is a practitioner who serves as faculty for students/interns during supervised practice by overseeing practical experiences, providing one-on-one training, and modeling professional behaviors and values" (Commission on Dietetic Registration, 2020d, p.1). Providing preceptorship is generally an unpaid task that is added to the daily work demands of nutrition and dietetics professionals. Therefore, it is an added responsibility that does not necessarily equate into increased wages or recognition. Preceptorship does have perks, such as earning up to 15 continuing professional education (CPEs) for being a preceptor. However, not all nutrition professionals are aware of these perks.

Every year, program directors across the nation face the challenge of finding preceptors to provide supervision for the 1,200 hours within CPs or for DIs associated with DPDs, and 450 hours for DT programs. This study aimed to examine willingness, satisfaction, and challenges associated with the preceptor role, as well as potential solutions to the preceptor shortage as

identified by practicing RDs and DTRs through an online questionnaire followed by a focus group and interview. The online questionnaire was sent to 5,000 nutrition professionals and was completed by 228 participants for a response rate of 4.56%. The focus group was comprised of four nutrition professionals who desired to be in the role of preceptor, and the interview was conducted with a single participant who was willing to discuss the reasons behind not wanting to be a preceptor. It is important to note that since there were only 3 participants who identified as men, gender-based comparisons could not be made.

Summary of the Findings

The framework of this study was Homan's (1958) social exchange theory that has an economic lens and states that an activity will cease if perceived costs of the exchange outweigh the potential benefits. The following sections will detail a cumulative breakdown of the data gathered during both phases of this mixed-methods study.

Both quantitative and qualitative data were gathered with the online questionnaire. Quantitative data were obtained through 14 demographic questions. There were thirty-seven 7-point Likert scales regarding willingness, satisfaction, tools, and supports, followed by 6 closed-ended questions regarding willingness, awareness of the preceptor database and potential CPEs for preceptorship. Lastly, the willingness to participate in the OSFG. Qualitive data were obtained through 5 open-ended qualitative questions regarding solutions to challenges or barriers, perceptions of preceptor duties, and the ideal student-to-preceptor ratio.

Qualitative data were obtained through 5 open-ended questions in the online synchronous focus group (OSFG) and one-on-one interview. The goal of this phase was to provide triangulation for the online questionnaire data. The data were analyzed under the paradigm of

pragmatism which accounts for everyone having their own viewpoint of a single reality which provided an avenue to look into problems and solutions (Creswell and Creswell, 2018).

Research Question 1: What factors impact the nutrition and dietetics professionals' willingness and satisfaction in providing supervised practice experience as preceptors in ACEND accredited programs?

About 70% of the respondents to the online questionnaire were nutrition professionals who were willing to be a preceptor versus 30% who had no desire to fulfill this role. This section will outline the factors that impact the decision on whether or not to become a nutrition and dietetics preceptor and the challenges that are associated with the role.

Demographic Factors

Preceptor Category. Unsurprisingly, nutrition and dietetics professionals who desire to be preceptors were more willing to perform this task and felt they had sufficient support and tools for successful preceptorship than those who do not desire to be preceptors. Participants who were willing to be a preceptor reported greater satisfaction in the role, and access to the tools and support they thought was necessary to fulfill the role successfully. This supports Bear and Hwang's (2015) findings that those who currently mentor or have in the past are more willing than their counterparts who have never provided mentorship or have had bad experiences as a mentor or mentee to perform this important task.

Age & Marital Status. Although every age group reported willingness to be a preceptor, it was interesting to note that willingness was most prevalent in the 20 to 25 year-old practitioners versus the participants aged 26 to 70 years. This could be due to a recent positive experience with the need for preceptorship to meet their own personal educational goals which is supported by Allen, Russel, and Maetzke (1997) and Bear and Hwang (2015). Another potential

reason for this increase in willingness for younger professionals could be that they are filling entry-level positions that do not provide the same level of stress as supervisory or managerial positions. A little more than 75% of respondents within this age group reported being single (never married) which could indicate fewer family obligations that restrain their available time.

Practitioners who responded to the online questionnaire that they preferred not to identify what their marital status was scored statistically significantly higher than those who were married or in a domestic partnership indicating a greater satisfaction in the preceptor role. This is interesting, but it is not helpful in identifying why they scored higher in satisfaction than their counterparts. All practitioners, regardless of age and marital status, should be recruited into roles of preceptorship. However, based off of the data in this study, it would be prudent to focus recruitment efforts on recently credentialed practitioners between 20-25 years of age. This could be accomplished through discussing the importance of preceptorship while they are still students. Also, providing students with mentorship opportunities (i.e., with younger cohorts) could help them feel more comfortable and competent within the mentorship role.

Weeks Served as Preceptor. Nutrition professionals who served in some capacity as a preceptor over the past year had statistically significant higher scores in willingness, in having the sufficient tools and support to successfully fulfil the preceptor role than those who had not served as a preceptor. This indicates a greater willingness to precept and access to the tools and support needed to fulfill the role. It is interesting to note that the highest level of willingness to perform preceptor duties was identified in professionals who completed these duties for 27-39 weeks of the year. This could be in part due to allotted time that would allow them to perform their normal job duties without the constraint or stress of a student (Chung & Kowalaski, 2012; Fogarty et al., 2001; Arnold et al., 2016). For the promotion of optimal willingness to fulfill

preceptor role, employers and program directors should consider supporting practitioners with approximately 1/3 of the year where they are not actively precepting, according to these data.

Awareness of Available Supports. Awareness of the Academy of Nutrition and Dietetics' preceptor database impacted willingness and perception of support within the online questionnaire. Professionals who had added their name to the preceptor database also reported a higher level of willingness to perform preceptor duties than those who had not. However, a little less than 65% of participants were unaware of the preceptor database and almost 90% had not added their name to the database for potential students to utilize. DeWolf and collaborators (2010) identified that if professionals feel they are recognized and supported, they will be more likely to be a preceptor.

The preceptor database is free to access by program directors and students within ACEND accredited programs. It is readily available on the Preceptors and Mentors webpage of the Academy of Nutrition and Dietetics (Academy of Nutrition and Dietetics, 2021a). In their study of state public health and human services management, Moynihand and Pandey (2007) found that public service motivation is strongly positively related to professional association membership. Academy membership is voluntary and not all CDR-registered nutrition professionals or students within ACEND-accredited programs are members, so this resource would not be available to them. The awareness of the preceptor database could be built into nutrition and dietetics programs as well as provided with annual registration cards through the CDR. Outreach by the Academy and ACEND could also be beneficial in increasing awareness and utilization of the preceptor database. Moreover, the preceptor database is considered a "perk" of Academy membership, but with the shortage of preceptors available to help students complete their supervised practice requirement it could be beneficial to the profession to make

this list open-access to all CDR-registered professionals and students within ACEND-accredited programs free of charge. Professionals may feel that the availability of the database is a supportive tool and in turn this could increase willingness and satisfaction within the role of preceptorship.

Another support that almost 55% of respondents were unaware of was the potential to earn up to 15 CPE per 5-year recertification cycle for providing preceptorship. Professionals who were aware of this CPE allowance were more willing to be a preceptor, were more satisfied in the role of preceptor, and felt they had the support needed to successfully perform preceptor duties. Moreover, a little over 60% were also unaware of the 8 CPE online preceptor training that is available through the CDR. Just like it occurred with CPEs, awareness of the preceptor training module was associated with greater willingness to precept, satisfaction within the role, and practitioners felt they had the tools and support they needed to succeed as a preceptor.

Ragins and Scandura (1994) identified that perceived costs vs. benefits impact willingness to provide mentorship. This aligns with Homan's (1958) social exchange theory. Continuing education was identified in previous studies as a factor that impacts willingness and satisfaction within the preceptor role (Arnold et al., 2016; Winham et al., 2014). Increasing awareness of these "free" CPEs could potentially tip the balance of "cost vs. benefits" and impact a practitioner's decision to become a preceptor. Awareness of these resources could be initiated while the individual is still a student within an ACEND-accredited program. Program directors and faculty could build awareness into courses and provide information with program exit packets upon graduation. As stated previously, not every RD and DTR is a member of the Academy of Nutrition and Dietetics, but they are all registered through the CDR. CDR could

provide outreach of these resources within mailings, emails, and include this information within the annual registration dues packets.

Open to Hosting Online Supervised Practice. Slightly over 50% of respondents to the online questionnaire stated they were open to hosting the supervised practice of an online student who lives in the professional's geographic location. Online students are students of accredited nutrition and dietetics programs who are obtaining their degree through distance education. This would mean that there is the potential for oversaturation of nutrition students who would be seeking preceptorship, especially if there is a brick-and-mortar college in the preceptor's area that is also offering degrees that would lead to the DTR or RD credentials. Professionals who were willing to fill the preceptor role for an online student that lives in their area were more willing to fulfill the preceptor role than their counterparts and reported greater satisfaction within the role. Personal satisfaction can be an important aspect for recruitment and retention of preceptors according to DeWolf and contributors (2010). Therefore, recruiting professionals who identify personal satisfaction within the role of preceptorship as well as nurturing that level of satisfaction needs to be a priority for program directors.

Employment Status. Not surprisingly, professionals who were employed full-time felt they had increased access to support than professionals who were self-employed. Some supports full-time professionals may enjoy are managerial support, set work hours, and benefits such as paid time off which all may be functioning in favor of their willingness to precept. Various studies show support by management such as feedback, available tools to successfully do the job, and workload adjustments are vital in the decision to be a preceptor (Bear & Hwang, 2015 & 2016; Eby et al., 2016; DeWolf et al., 2010).

There could be a lack of worth put onto preceptorship if a person is self-employed because there is no monetary support or external supports associated with fulfilling the role other than the potential to earn up to 15 CPEs in a 5-year recertification cycle. Preceptorship could be viewed as an extra duty in an already full timeframe of self-employment. Moreover, the preceptor database currently allows search options based on distance from a particular zip code and the area of expertise of the professional (e.g., community, management, medical nutrition therapy, etc.). Adding an option for potential preceptors to list their availability as part- or full-time could help both the students and the professional identify if the experience would be a good fit for both parties.

Another item to consider is the insurance coverage required with many college and university supervised practice contracts. For example, a facility that is hosting a student within a health and human services program within the Minnesota State Colleges and Universities system must have a minimum of $2M per claim and $3M aggregate of professional liability insurance and commercial general liability insurance (Minnesota State, 2021). This could be an unattainable expectation for a person in private practice. Solutions to this hurdle could include the establishment of grants either locally through the college or university, or nationally through The Academy, ACEND, or CDR.

Challenges

The qualitative data support the identification of several themes that highlighted the challenges faced by potential preceptors and that helped better guide program coordinators in strategizing to increase the recruiting of preceptors. These themes included time, setting, expectations, altruism, appreciation, preceptor competency, employer expectations, support,

incentives, space, resources, and skills. This section will dig deeper into each of these themes and discuss the implications when compared to previous research.

Time. Time was identified as a factor that impacts the preceptorship decision. Professionals that felt their available work hours were already stretched to capacity by their assigned workload reported less willingness to perform preceptor duties. This is supported by the results of multiple studies (Ragins & Scandura, 1994; Arnold et al., 2016; Chung & Kowalaski, 2012; Fogarty et al., 2001; Dewolf et al., 2010). As Chung and Kowalsaski (2012) identified in the field of nursing, a professional will choose not to be a preceptor if there is insufficient time to complete their job duties; this study supports that nutrition and dietetics professionals will make that same decision.

Workloads exceeding available time during a normal work day will greatly impact the professional's ability to take on the responsibilities of teaching a student. Many facilities may also employ the nutrition and dietetics professional on a part-time basis which further enforces the restraints on time to serve in this important preceptor role. Furthermore, the length of the rotation could be too long or too short to make the process worthwhile. Supervised practice experiences within ACEND-accredited programs can range from as little as 8-16 hours per site to the entire 1,200 hours for dietitian students and 450 hours for dietetic technician students in one location. The expectations vary depending on the program type (i.e., the external internship for DPD students, CPs, and DT programs) and the individual program's plans to meet the ACEND accreditation standards. Supervised practice experiences are not in a "cookie-cutter" format from program to program. Therefore, potential preceptors may feel that the experience is "more trouble than it is worth" if there are multiple hours required for facility orientation and training

and the rotation is only two weeks in length; and if a person is employed part-time, it could be too time-consuming to complete preceptor duties in addition to their regular routine.

For those employed either part- or full-time, the lack of time can be compounded if downsizing is present. In healthcare, “doing more with less” can be a common theme. Professionals who are self-employed could feel this lack of time on a more personal level because they are often the only person employed by their business. Bear and Hwang (2016) identified that downsizing negatively affects the professional’s perception of support and will therefore influence their decision not to perform mentorship duties.

It is important to note that in the upcoming future education model (FEM) for dietitians, scheduled to go into effect by 2024, will include a master’s degree requirement to be eligible for the registration exam. FEM programs will not have a set number of supervised practice hours. Instead, they will require competency-based education with the mindset that licensure of many states will still require 900 to 1,200 hours of supervised practice depending on the state (Academy of Nutrition and Dietetics, 2021d). Appendix C describes the licensing requirements of each U.S. state that requires licensure. Therefore, a complete overhaul on the number of supervised practice hours that are required within ACEND-accredited programs is not a realistic recommendation. However, accepting alternative experiences such as increased simulation or virtual/telehealth options could be an easy solution to alleviate some of the in-person time constraint for preceptors. Moreover, the number of hours required for supervised practice is not out of line with other allied healthcare professions, illustrated by the required 1,050 required for a physical therapist (Commission on Accreditation in Physical Therapy Education, 2020).

Setting. High acuity levels, also referred to as the level of care that patients require, were identified as a challenge for preceptorship. Some practitioners may want to be a preceptor, but

they work in specialized fields with advanced training that would not be appropriate for entry-level students. The populations served may also be more sensitive, such as eating disorder clinics, resulting in patients who are uncomfortable with the presence of a student in their nutrition counseling sessions. Respondents claim student interest in their work setting can also impact their decision on whether or not to provide preceptorship. There was a theme in which preceptors believe that students often are not invested in the rotation unless they are interested in finding a position in that area after they are credentialed. An example of this would be a student "going through the motions" of completing a foodservice management rotation when they know that they want to work in clinical nutrition. If the student is not invested in the rotation, this could lead to a bad mentoring experience which has been found to decrease future willingness and satisfaction within the mentorship role (Eby et al., 2010). Program directors and course instructors should discuss the importance of each supervised practice rotation, so students can experience the "big picture" of the nutrition and dietetics field. Typical rotations in food and nutrition programs include foodservice management, community nutrition, and clinical nutrition. Some programs also offer staff relief or alternative options in an area of the student's interest. Each rotation needs to be treated with the same enthusiasm and dedication as the last.

Practitioners who work remotely stated that their ability to provide preceptorship is limited. Increasing access to and support for remote experiences, such as telehealth, could lead to increased access to supervised practice thereby decreasing preceptor shortages. Gibson and colleagues (2020) reported that students in nurse practitioner programs met most of their competency requirements through telehealth opportunities. This could potentially be transferred to nutrition and dietetics specialties. Telehealth and remote supervised practice opportunities could also be beneficial to the nontraditional student who is working full-time to support their

family in addition to pursuing their education by opening the scheduling possibilities to weekends and evenings if they coincide with the preceptor's schedule; in addition to students who live in or want to provide services in rural or underserved areas.

Lastly, nutrition professionals who work as dietetics faculty within higher education stated that they are unable to provide preceptorship. However, there is nothing stated in the ACEND accreditation standards that would bar professionals in education from performing preceptorship duties. Therefore, this population could be an untapped resource for the preceptorship of master's and doctoral students who have an interest in pursuing employment within higher education. This could potentially benefit both the student who has an interest in higher education and the professional because the intern can help alleviate some of the faculty member's workload after the initial training period. Colleges and universities could explore the option of a teaching assistantship that coincides with ACEND competencies to foster these benefits. As with the typical clinical, management, and community rotations, not every competency will apply to a supervised practice experience within an institution of higher education. However, many competencies could be met in that setting. See Appendix O for ACEND competencies that could potentially be met through supervised practice within an institution of higher education. Another way to encourage internships in academia could be through a clear statement on the ACEND website and the Academy's "Preceptors and Mentors" webpage.

Expectations. Nutrition professionals stated that the college or university assigned projects need to be useful and beneficial to both the student and the facility. Unnecessary projects place an additional burden onto the preceptor that could influence their decision on whether to stay in that role. Examples of assignments that are often required include case studies

within clinical rotations, quality improvement studies within foodservice management rotations, and public speaking and nutritional outreach with community rotations. This can become a grey area between preceptor expectations as illustrated through one participant stating that they expect "detailed competencies/assignment; goals and objectives" from the program, and another stated:

> "give preceptors flexibility when working with students. I appreciate it when educators provide a solid outline of which competencies and (sic) intern should accomplish during a rotation, but when directors create schedules/projects/rubrics to meet the competencies that are too rigid and don't allow for the unique opportunities that a site may present. This usually creates more work for me as a preceptor which forces me to prioritize some 'busy work' projects that are mandated by the internship rather than finding projects that are beneficial to my organization."

This supports Homan's (1958) social exchange theory as well as Eby and colleagues (2010) in that the work needs to be mutually beneficial and costs cannot outweigh the rewards of the exchange. For CP and DT programs that typically have rotations occurring at various points throughout the program, providing the preceptor with a background of the student's previous courses can also lead to a more positive experience because the preceptor will have a better idea of the student's current competency level. DPD students finish all coursework and graduate from their program before entering into an internship. So, students will have varying competency levels and past course completions depending on the program type and setup.

Altruism & Appreciation. Nutrition professionals are part of the service and healthcare industry, which tends to attract professionals who want to help society at large. Unsurprisingly, practitioners reported altruism as a reason that impacts their decision on preceptorship. Giving

back to the profession was detailed as liking to do something that helps future practitioners and support the growth of the profession.

Almost a quarter of respondents indicated that they strongly disagreed with the statement "I am fairly compensated by my employer to perform preceptor duties" and this affected their overall satisfaction within this role. Appreciation was a challenge that was identified by professionals in this study. If respondents felt unappreciated or burned out, they were less likely to partake in the role of preceptor. This corroborates the findings of Arnold et al. (2016) in that lack of appreciation was a major barrier to preceptorship. They also found that non-preceptors valued compensation over altruism. Therefore, it is important to note that most preceptorship opportunities are not compensated in addition to normal wages indicating that altruism can only stretch so far.

Preceptor Competency. It is interesting to note that self-perceived insufficient preceptor competency with entry-level practitioners was identified in this study was a common occurrence. This was interesting because the younger participants of 20 to 25 years of age who would typically be newly credentialed and working in entry-level positions reported the greatest willingness to fill the preceptor role. Moelter and colleagues (2017) concluded that preceptor training should be continuous and ongoing to recruit and retain preceptors. The potential for orientation could be instrumental in helping a newly credentialed practitioner feel comfortable in the preceptor role. Amirehsani and colleagues (2019) found that allegiance to an academic program can increase willingness to be a preceptor. With this considered, program directors and course instructors could discuss preceptor shortages and build preceptor orientation into courses throughout the program that emphasize newly credentialed graduates are competent to provide mentorship to entry-level students in need of supervised practice. This simple addition could

increase the perceived self-competency of a potential preceptor and encourage a long-lasting allegiance to their institution of higher education which could in turn increase their willingness to be a preceptor for students from their alma mater.

Program directors and course instructors could also increase awareness of the aforementioned 8 CPE online preceptor training provided by the CDR to combat this perceived challenge of insufficiency. The newly credentialed practitioner could then gain their first 8 CPEs after graduation for free and increase their level of competency to fulfil the preceptor role for a student in need of supervised practice. Of note, RDs require 75 CPEs and DTRs require 50 CPEs every 5-year recertification cycle (Commission on Dietetic Registration, 2020b).

Employer. It is concerning that some respondents who reported that preceptorship was required within their current position also reported the highest number of weeks served in this role within the year and the lowest levels of willingness to precept and satisfaction in the role of preceptor. Moreover, they reported insufficient access to the tools and support needed to succeed in the role of preceptor. Allen and Eby (2003) found that mentors who were reluctantly recruited or coerced into the role of mentorship had decreased intrinsic motivation, or satisfaction, within the role. If employers require preceptorship as a condition of employment and the professional is unwilling to fulfill this duty, it could create a less-than-favorable experience for both the preceptor and preceptee.

Negative experiences as either a mentor or mentee can decrease the likelihood of future mentorship according to Allen and collaborators (1997) which could in turn decrease the preceptor pool in the future. If preceptorship is to be a requirement for employment, this information needs to be shared by employers within the job description and interview process with potential employees during hiring. If preceptorship is a new task added to a current position,

the professional who does not desire to become a preceptor should be provided with an opportunity to discuss their concerns with their employer. There is an opportunity to remedy the professional's misgivings regarding preceptorship if there is open employee-management communication. For example, if the employee does not want to fill the role of preceptorship due to a heavy workload, there could be an opportunity to discuss a delegation of some duties in order to free time for the professional to work with students. However, if preceptorship is not something that the nutrition professional wants to do, and delegation of duties is not an option, then the professional should search for other employment options that would not require preceptorship.

The additional challenge of "red tape" or bureaucratic onboarding tasks such as contract negotiation, background studies, and immunization verification can further complicate the ability to provide preceptorship for a student in need. It also needs to be noted that opposite to the situation above where an employer requires preceptorship, some employers may forbid the practice. Both of these challenges support research by Nasser and associates (2011) that found human resource barriers impacted the willingness to be a preceptor.

Contract negotiation can be simplified through a dedicated employee within the institution of higher learning acting as the liaison between the department and the facility. Standardized contracts can also promote a smoother negotiation experience. It should be noted that as described above, the insurance requirements of standardized contracts could also be a hindrance to this process. National and state background studies as well as immunization verification can be conducted through auditing organizations, such as CastleBranch, which places the control of initiating the background studies and uploading vaccination verification

with the students and in turn alleviates the pressure on institutions of higher education and healthcare facilities from performing these tasks (CastleBranch, 2021).

Incentives. Many participants stated that if their employer offered monetary compensation for preceptorship duties, such as an increased wage differential or increased access to paid time off, then they would be more willing to provide preceptorship services. In the absence of employer incentives, there is the potential for the educational program to provide a stipend for preceptorship. However, in an era of insufficient funding in higher education most programs seek ways to do "more with less" in order to avoid program closures and do not have the extra funds available to pay preceptors. There is currently no published data on the number of nutrition and dietetics programs accredited by ACEND that provide a monetary stipend to the preceptors who serve their program.

Monetary incentives are a finite resource. Therefore, it is important to examine other means to incentivize potential preceptors to fill the role. This study identified the non-monetary opportunity to keep current with their clinical skills by interacting with students who are learning the most recent competencies. As discussed above, access to up to 15 CPEs per 5-year recertification cycle could be an incentive to preceptorship and is supported by the findings of Winham and collaborators (2014). Other non-monetary incentives identified in the study includes adjusted workloads, recognition, and access to the college or university's online databases, which aligns with the findings of Amirehsani and colleagues' study on nurse practitioner preceptorships (2019).

Space, Support, and Insufficient Resources. Limited space was a major challenge identified within this study on whether or not a professional will provide preceptorship services. Many respondents reported that they had very small offices that could not accommodate the

additional workspace demand of another person and their computer which would be required to allow for proper medical charting within the electronic medical records of patients. Furthermore, participants of this study reported that the cost of additional computers and access to electronic medical records or ordering systems along with information technology services was prohibitive to the facility's budgets. Space could be considered one of the tools a professional would need to succeed in the role of preceptorship, so a lack of space could be interpreted as a lack of institutional support towards preceptorship which can in turn decrease the execution of said activity. If preceptorship is an employment requirement, then employers must assure that there is adequate space and technological resources available for the employee and the student to coexist within the department.

Peer support is also an important factor that influences the decision to precept. A typical supervised practice experience results in consistent one-on-one time between the student and the professional throughout the beginning of the practicum. After the student is comfortable with the facility and the software required within the department, then greater independence is generally granted by the preceptor. During this time, the preceptor assigns tasks for the student to complete and is available to help with questions and guidance as needed. Respondents stated that support from their team to help pick up the slack and cover for time spent with a student is crucial to the perceived success of the preceptorship experience. This is supported by Bear and Hwang (2015) in that if an employee feels supported and appreciated then there is a higher likelihood of satisfaction in the mentoring role. In order for the practitioner to feel supported in the preceptor role, the overall climate of the facility and the department regarding students and preceptorship must be positive in nature with an emphasis on teamwork. Therefore, professionals that are employed in facility administration and management positions must encourage, emulate, and

recognize teamwork and supportive roles as the “norm” to foster an environment of support within individual departments.

Support could also be in the form of less paperwork required by the curriculum of the educational program, a seamless contract process, availability of the program director or instructor for the communication of questions, the provision of part-time options for preceptorship, and flexibility in assignments that could meet ACEND competencies. An example of this support can be highlighted through program directors opting to include examples of activities that could meet different ACEND competencies and allow for customization dependent on the facility’s needs instead of requiring a rigid set of assignments in which there is no room for deviation. Paperwork could then be decreased through electronic rubrics for the confirmation of student competency within a task. Lastly, open lines of communication between the preceptor and instructor or program director needs to be emphasized early through the preceptor orientation, and often through touchpoint calls or emails regarding the student and overall experience. DeWolf and collaborators (2010) reinforce the idea that if a preceptor feels supported and there is an open line of communication, then they will be more likely to be satisfied and continue within the preceptor role.

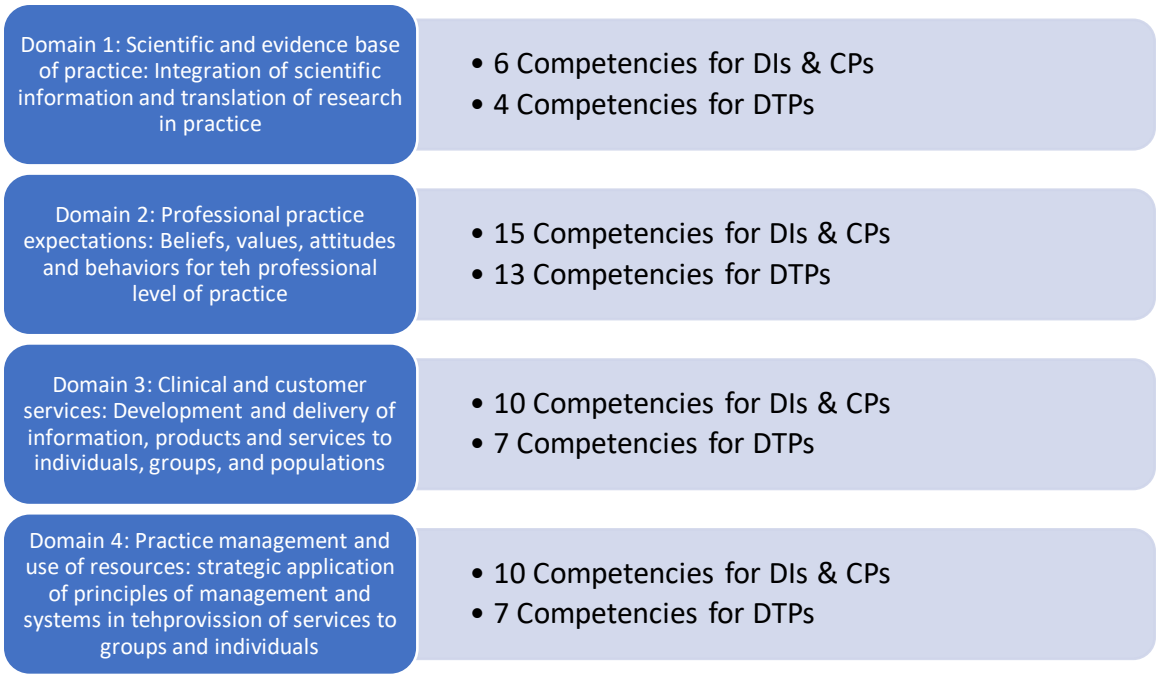
Resources. Participants identified that access to references impacts the perception of challenges toward the role of preceptor. Practitioners reported the need for a clear curriculum such as a detailed syllabus and rubrics to assess competencies to help overcome challenges of preceptorship. Fischer and colleagues (2006) also found that specific objectives and clear expectations were crucial for successful preceptorship. However, it is interesting to note that some participants reported that they were not provided with any flexibility within the syllabus which had the opposite effect and made the supervised practice experience more complicated

than it needed to be. A “happy medium” needs to be established between the provided syllabus and rubrics and the facility’s ability to tailor assignments to make them mutually beneficial.

There are four competency domains within ACEND-accredited programs. Within the domains, there are a total of 41 competencies for dietitian programs, and 31 competencies for dietetic technician programs, as illustrated in Figure 9. An example of a flexible community presentation grading rubric with ACEND competencies can be viewed in Appendix P.

Figure 9

Domains & Competencies Required in ACEND-Accredited Programs



Access to a preceptor guidebook and orientation was also deemed as an important factor to overcome the challenges of this role. The provision of effective preceptor training can alleviate some anxiety of the nutrition professional by providing clear expectations, policies, and procedures. This supports Moelter and associates (2017) conclusion that initial preceptor training through orientation to the program and expectation as well as continuous or annual training

provided by the program director or course instructor should occur to retain and recruit preceptors.

Skills. Participants identified that various skills can impact the challenges associated with the role of preceptor. A preceptor must have a willingness to teach as supported by Bear and Hwang (2015) and Allen and Eby (2003). The student must be willing to learn and present with a strong educational base when they arrive. It is important for the program director or course instructor to assure student preparedness before they enter supervised practice. If a student is reluctantly participating in the supervised practice and are not prepared for the experience it could lead to an unfavorable situation which could impact the professional's desire to precept in the future (Arnold et al., 2016).

Research Question 2: What solutions do nutrition and dietetics professionals identify to combat preceptor shortages within ACEND accredited programs?

Solutions

There were five overlapping themes identified within the online questionnaire and the OSFG/interview phases: ACEND/CDR standards, support and encouragement, incentives, colleges and universities, and suggested preceptor to student ratios. This section will address the proposed solutions to combat preceptor shortages as identified by the nutrition and dietetics professional participants.

ACEND/CDR Standards. Participants suggested that standardized guidelines, or a handbook, for the preceptor role could encourage program consistencies from school to school. Currently, the Academy hosts a "preceptors and mentors" website that includes information such as how to become a preceptor, explanation of national preceptor month and outstanding preceptor awards, as well as a link to the 8 CPEs preceptor training available through the CDR

(Academy of Nutrition and Dietetics, 2021a). However, there is not a downloadable document available to preceptors or program directors. ACEND and the Academy could develop a preceptor handbook that details the available resources, policies, and trainings regarding preceptorship that is updated yearly. Best practices could also be identified and detailed within the handbook. Additionally, sample letters to employers detailing the important role of the preceptor and suggested compensation could be included. This proposed resource could be free-of-charge for any nutrition professional who is considering filling the role of preceptor.

Data indicated that although the decision to offer CPEs for performing preceptor duties was a "step in the right direction," (P16) some preceptors felt that the 15 CPEs were not sufficient for the amount of work that goes into the position. One preceptor (P17) went so far as to say "15 CEs over 5 years is an insult to the job, let's actually show the appreciation for folks willing to put in the extra time and effort to train future dietitians." It must be noted that until 2017, CPEs were not available for preceptorship (Academy of Nutrition and Dietetics, 2021a). The CPEs were initiated, in part, as an incentive to encourage and recruit preceptors. However, the process to verify the CPE could be considered arduous by professionals because a preceptor confirmation and self-reflection form must be completed by the preceptor, signed by the program director, and kept for 2 years after the applicable 5-year recertification cycle to which it was applied. The current awarded CPEs include 1 CPE for 1-25 contact hours, 2 CPEs for 26-50 hours, and 3 CPEs for 51 or more hours. With many practitioners serving in a preceptorship capacity for greater than 51 hours per year, this would justify increasing the CPEs available for preceptorship.

Decreased fees as a "perk" of preceptorship was a common thread throughout both phases of this study. Respondents listed numerous ideas within this category such as free or

decreased Academy of Nutrition and Dietetics membership fees, discounted entrance fees for the annual Food and Nutrition Conference and Expo (FNCE) meetings, free access to Academy resources such as the Evidence Analysis Library or the Nutrition Care Manual, and opening opportunities for grants to cover the costs of preceptorship. Grants could benefit any nutrition and dietetics professional, but they could also be an attractive incentive for those who are working in private practice who do not have employer support for these important duties.

Participants identified the expansion of supervised practice sites and alternative experiences to meet supervised practice competencies as a solution to preceptor shortage. If ACEND approved telehealth or distance options for preceptorship, professionals in these areas of practice could potentially alleviate part of the current preceptor shortage. Virtual hours and preceptors could be an unexplored and untapped treasure trove to meet student needs and help students compete in virtual employment settings once they are credentialed. As described earlier, nurse practitioners have successfully met competencies through distance/virtual telehealth supervised practice options (Gibson et al., 2020).

Additionally, increased simulation within ACEND accredited programs could be considered. Programs that produce dietitians are already allotted 300 hours of simulation and dietetic technician programs allow up to 100 hours of simulation that would reduce the number of preceptor-required supervised practice hours within the respective programs (ACEND, 2016b). Simulation has a proven track record to meet competencies (Thompson, 2015). Increasing the approved amount of virtual and simulation hours could also help mitigate the shortage of preceptors by decreasing the number of hours students would need to complete within their facilities.

Lastly, participants felt that a board-certified specialty credential for preceptorship should be available through the CDR. CDR currently offers board-certified specialty credentials that require a minimum of 2-years in practice and the successful completion of a standardized exam in each of the following specialties: gerontological nutrition, oncology nutrition, obesity and weight management, pediatric nutrition, pediatric critical care nutrition, renal nutrition, and sports dietetics. Practitioners who wish to pursue a specialty credential must pay an initial $350 fee to confirm eligibility, and the credential is valid for 5-years after the successful completion of the exam. If the professional desired to keep the specialty credential, they would need to resubmit for eligibility, pay another exam fee, and retake the board certification exam before the end of the 5-year cycle. There is also 75 CPEs awarded for the successful completion of the specialty exams (Commission on Dietetic Registration, 2021a).

Professionals felt that the specialty credential could offer them opportunities to advance their career and compensation bargaining options, thus making the benefits of preceptorship outweigh the perceived costs. All of the board-certified specialty credentials require the $350 fee because there are costs associated with the development and implementation of exams. However, if a board-certified specialty credential in preceptorship was established, a discounted fee should be considered as an incentive to encourage the continuation within this role due to preceptor shortages.

Support/Encouragement. Participants identified ways that their employer could support and encourage their role as a preceptor which would impact their decision to fill this role. First, participants from across the employment spectrum of clinical nutrition, foodservice management, and community nutrition reported that a decreased workload and adequate staffing could encourage preceptorship. Allowing professionals time to complete their duties while also

mentoring students, in addition to providing backup to cover the excess patient load due to preceptorship, would alleviate much of the stress and time constraints associated with this role.

Workloads can vary greatly from institution to institution, and even between departments. For example, a nutrition professional who is working in an intensive care unit will see fewer patients per day than their counterpart who is working in an acute-care/short-stay inpatient setting. This is due to the acuity, or complexity, of the patient load. Moreover, a practitioner working within public health and the Women, Infants, and Children program can be scheduled to see a new participant every 30 minutes throughout the day resulting in the assessment and counseling of up to 16 families per day. Hosting a student cuts into the productive hours in a day, especially in the beginning of the experience. However, after the student has established a comfort level within the facility's tasks, they can potentially help decrease the workplace demands of their preceptor. This can be illustrated through a participant of the study stating that students eventually become peers towards the end of their supervised practice experience: "Eventually they come to me, and sometimes we hire them… that's really satisfying to see that you may train somebody, and they've come and joined you as one of your own." Therefore, adjusting workloads as appropriate could be a well-received solution to prove employer support within the role of preceptorship.

The employer should provide recognition for preceptorship. As established by Bear and Hwang (2016), Eby and associates (2016), and Arnold and collaborators (2016), when employees feel appreciated and valued, then they are more likely to be satisfied within the role of preceptor or mentor. Ideas for recognition could include a preceptor of the month award, a certificate of recognition for their employment file, and vouchers for additional paid time off. One participant who worked in management shared that they offer points within their

organization for performing preceptorship duties that could add up to opportunities to advance employment and wage categories.

Lastly, streamlining the onboarding process for interns could be viewed as a solution to preceptor shortages. Oftentimes, a professional is willing and able to host a supervised practice experience for a student in need but is thwarted by the contract and orientation processes. Common contract issues can include the length of the agreement, insurance requirements, and the complicated process of proposed wording changes to a standardized contract that can take many months to approve through the institution of higher education's and the facility's legal departments. Assuring a smooth contract process through utilizing dedicated employees from each site could alleviate this stress and allow the professional to focus on preparing to provide a smooth supervised practice experience.

Incentives. Participants identified that monetary incentives would be a solution to preceptor shortages. It was noted that participants often felt that their credentials were undervalued and the amount of work that preceptorship entails would be more of a cost than they receive in rewards for the task. Pay differential for preceptorship could be a solution to combat preceptor shortage and create a positive view of this task within the workplace. For example, one healthcare collaborative in Oregon offers a $2.50/hour precepting pay differential for registered nurses who are preceptors (Legacy Health, 2016). This differential could easily apply to other healthcare professionals within the facility. If a pay differential was not available for preceptorship, participants encouraged employers to offer other incentives such as additional PTO days that are prorated to the amount of preceptorship that occurred. Of interest, Arnold and collaborators (2016) identified that people without a precepting background valued compensation over altruism. Therefore, if preceptorship is important to employers, providing

monetary incentives such as pay differentials or additional paid time off could sway a non-preceptor to step into this role.

The nutrition professionals that participated in this study also encouraged colleges and universities to implement scholarships for preceptors that serve the students in their programs. Increasing access to reference books was also an important incentive that colleges and universities could provide to their preceptors. A desk copy of a text book could be provided to the college through the publisher and this would allow the college to share the resource while students are actively participating in their supervised practice hours. Opening the library databases to preceptors is also a cost-effective means to provide up-to-date resources that can improve the supervised practice experience in a mutually beneficial way.

Respondents also reinforced the incentive of free resources from the Academy of Nutrition and Dietetics and ACEND. The creation of a preceptor guidebook could fill this gap on identifying best practices as a preceptor. Moreover, providing free access to the Nutrition Care Manual based on CDR registration as an RD or DTR could help assure that all preceptors have the information they need to successfully guide students through up-to-date nutrition information. There are three care manuals available through the Academy of Nutrition and Dietetics: the standard Nutrition Care Manual has an annual cost of $194.99 for 1 to 4 users with Academy membership, and $362 for non-members; the Pediatric Manual is $194.99 or $128.99 added to a current nutrition care manual subscription for members, and $362 stand-alone subscription or $242 when added to a current subscription for non-members; and the Sports Nutrition Care Manual costs $79.99 for members and $199.99 for non-members (Academy of Nutrition and Dietetics, 2021b). This is a costly resource that should ideally be free-of-charge to all RDs and DTRs based upon CDR registration or as a perquisite of becoming an Academy

member. In absence of this, the provision of free access to the nutrition care manuals should be considered for professionals providing preceptorship services for students in ACEND-accredited programs. The Evidence Analysis Library is free to all Academy members and has a cost of $250 per year for non-members (Academy of Nutrition and Dietetics, 2021c). Again, if preceptorship is provided to students within ACEND-accredited programs, the Evidence Analysis Library should ideally be available to all RDs and DTRs performing this invaluable duty regardless of Academy membership. Lastly, the incentive of decreased Academy of Nutrition and Dietetics member fees for preceptorship could increase the pool of potential preceptors available to meet the need of students in ACEND accredited programs.

Colleges and Universities. Student readiness was identified as integral in assuring preceptors will want to continue in the role for future students. If the preceptor does not feel the student is ready for rotations, then they are more likely to feel that the cost outweighs the benefit of hosting the student's supervised practice hours. Eby and associates (2010) identified that good mentoring experiences are significantly stronger measures than bad experiences to affect the professional's willingness to mentor in the future. Program directors and course instructors must make sure that students are prepared before their supervised practice in order to promote a good experience for the preceptor. Preparation for rotations include assuring that the student is academically ready to exercise their didactic skills within the "real world," in addition to being socially prepared. It should go without saying, but students should be able to accept feedback graciously, show respect towards their preceptor and the interdisciplinary team members, and actively engage to show genuine interest and appreciation in the supervised practice experience.

Program directors and course instructors should also encourage their alumni to precept. The importance of preceptorship could be built into the program. The topic could be discussed in

multiple courses throughout the program. Training on how to be a good preceptee and what to expect from supervised practice could be implemented prior to the student entering the field. Program directors could emphasize that once they are registered as entry-level practitioners they have the competencies to guide a student through a supervised practice experience. By promoting the 8 CPE preceptor training upon graduation, this would also increase the graduate's awareness of the training. This study identified that willingness to precept, satisfaction within the role of preceptorship, and the perception that the participant had access to the appropriate tools and support to successfully complete this task were greater if there was an awareness of the 8 CPE of preceptor training from the CDR. It could also set the graduate up for success by providing their first 8 hours of CPEs for their registration cycle.

Access to resources can also be interpreted as an incentive. For example, a college or university could potentially provide access to the library databases while a practitioner is serving within the role of preceptor. This could allow the professional to have access to breaking research articles and best-practices that could help them become a better preceptor and nutrition practitioner.

Lastly, nutrition professionals who are either currently serving as preceptors or have served in the past recommend opportunities for feedback. They stated that often there is opportunity to give feedback on the student and on the program, but rarely there is opportunity to receive feedback about their performance from the college or university. Each program should have a rubric where the student is allowed to evaluate the preceptor. This evaluation would then be shared anonymously with the preceptor. Discussion from the focus group reiterated that this may be uncomfortable for the student if they were the only student to attend the site, but that evaluation is an important part of professionalism and they need to work on developing the skill

of providing and receiving constructive criticism while still in school. The participants stated that the evaluation could help them understand their personal strengths and weaknesses as a preceptor which would help them know where they need to focus in order to improve within the role.

Preceptor to Student Ratio. Almost half of the participants in this study identified the ideal preceptor to student ratio as 1:1. They felt this allowed for the best experience for the student and preceptor because it allowed time to answer the student's questions while still allowing the preceptor time to complete their normal daily tasks. To put this into perspective, ACEND (2019b) reported a total of 211 DT graduates, 1074 CP graduates, and 3796 dietetic internship graduates. This would result in a total of 5,938,950 hours of preceptorship if calculated utilizing 450 hours of supervised practice in DT programs and 1,200 hours for CP and DI programs.

The second most popular option was 1:2 (17.2%). Respondents answering with this ratio stated that they would not be able to accommodate more than 2 students at a time while still meeting their work requirements. They felt that the 1:2 ratio had some benefits because students can trouble-shoot off of each other and learn together while being guided at the same time by the nutrition professional. Therefore, the overwhelming suggestions of 1:1 followed by 1:2 preceptor-to-student ratio should be considered to promote maximum preceptor willingness and satisfaction.

Recommendations for Practice

Solutions to combat preceptor shortages can be organized into three areas: employers, institutions of higher education, and accrediting bodies/professional organizations. This section will detail the tactics that employers, colleges or universities, as well as the accreditation and

credentialing bodies can consider to lessen the preceptor shortages within ACEND accredited programs. See Figure 10 for an at-a-glance depiction of the recommendations for future practice.

Employers

Employers should consider pay differentials for preceptorship. If this is not a possibility, developing a point system for additional paid time off or career advancement steps could be considered. These monetary incentives are most attractive to professionals who do not desire to be preceptors due to their perceived costs vs. benefits ratio associated with the task of preceptorship. This differential or additional time off could promote a happier work environment and potentially decrease employee turnover due to increased job satisfaction levels.

If hosting students is part of the facility's mission, employers need to provide sufficient space and technology to successfully host a student. It could be beneficial to provide a different work space and assure that there is appropriate computer access to promote a smoother experience for both the employee and the student. This is especially true in clinical nutrition where there is extensive patient charting and care planning requirements.

Employers should encourage teamwork and workload shifts for the employee performing preceptorship duties. By alleviating the burden of some of the day-to-day tasks that would be required by the preceptor in their normal duties, it opens the door to more effective preceptorship since the professional will have the time to properly guide their student. If preceptorship is a required aspect of the position, employers must be sure to include this in all job postings and interview processes. In this way, potential employees can gauge if the position is right for them based on the job expectations. If hosting a student is not permissible and an employee desires to serve in this capacity, employers need to consider allowing preceptorship on a trial basis. If performing preceptor duties is important to a professional who thrives on altruism and giving

back to the profession, this simple acceptation could aid in the retention and satisfaction of the employee.

Colleges and Universities

Program directors and course instructors must assure student preparedness before they are approved to attend supervised practice experiences. An example that was shared by numerous participants of this study was to utilize online electronic medical record (EMR) simulations while the student is in didactic courses, such as EHR-Go (EHR-Go, 2020). In this way, the student will already be oriented to what to expect from an EMR before they set foot on their clinical supervised practice rotation. Students will also have practice in writing chart notes, assessments, and performing nutrition diagnoses in the form of problem/etiology/signs and symptoms (PES) statements.

A handbook specific to the program and an online orientation that can be accessed at the preceptor's convenience should be created and provided by the institution of higher education. With a standardized online training, all preceptors will receive the same information and will be set up for a successful experience. The handbook would assure that all pertinent information regarding the supervised practice expectations and guidelines was located in one place. This would promote a supportive environment between the preceptor and the college or university because the tools required for success, orientation and a handbook, would be easily accessible.

The program director or course instructor could provide desk copies of applicable texts and access to the institutional library databases. This would promote the use of current best practices and evidence-based information throughout the practicum. In addition, the nutrition professional would have free access to resources that may have been cost-prohibitive without

preceptorship. This is a low-cost perk that could provide greatly appreciated tools and resources to preceptors.

The importance of preceptorship should be built into nutrition and dietetics program courses. It is important to discuss the additional physical and emotional toll fulfilling the role of preceptorship can entail with students before they enter their supervised practice courses. Moreover, discuss how preceptorship is an additional duty that most professionals are not paid extra to perform. Appreciation, respect, and professionalism is an expectation of all nutrition and dietetics students when they enter their practicums. This could also be a means to recruit graduates as preceptors, especially if preceptor shortages are discussed within didactic courses. Alumni would be the perfect fit for preceptor recruitment since they are familiar with program expectations and have been on the student-side of the supervised practice arrangement which would allow for empathy as they guide the new students through the process.

Discussion and explanation of the preceptor database, CPEs available for preceptorship, and the 8 CPE of online preceptor training available through the CDR should also be initiated with students throughout the nutrition and dietetics program. Awareness of the available resources for preceptorship could impact the recent-graduate's decision on whether or not to be a preceptor.

Program directors should consider the implementation of a preceptor to student ratio that works for the professional and the program. This could promote a work-preceptor balance that provides satisfaction and continued willingness to fulfill the preceptor role. Preceptors should also be provided student evaluations of their experience. It was important to the preceptors of this study to receive feedback from their students, so they knew what they were doing well and

what their areas of improvement were. This also provides the student with valuable practice at giving constructive feedback which can help them in their professional duties after graduation.

Scholarships or tuition waivers for preceptors who serve the program's students should be considered. Scholarships could be initiated by the program's students conducting fund-raising efforts, or through outreach to alumni to support a preceptor scholarship fund. Tuition waivers may be a trickier suggestion because colleges and universities have many rules, regulations, and contracts to consider. However, this does not mean that the option should not be explored. Another idea to provide educational opportunities for alumni is to introduce an annual learning symposium that provides free CPEs. Students could present current research within the field of nutrition and dietetics, best practice updates, or their own research. This could be done in-person, virtually over platforms such as Zoom or Google Meet, or pre-recorded to be accessed at convenience.

Program directors should show appreciation to the professionals who serve as preceptors to their students. One way to do so would be to issue certificates of appreciation to the preceptor that can be displayed on the wall. Another way to show appreciation would be to write a letter of appreciation to the preceptor's supervisor regarding the supervised practice experience to be shared to their employee file. Lastly, the program director could provide the preceptor with a signed CDR preceptor confirmation and self-reflection form that reflects the number of CPEs provided by the supervised practice experience. By doing so, the program director is essentially erasing the challenge of professional unawareness of the free CPE for preceptorship and providing a "perk" for the consideration of continuation in this role.

ACEND/CDR/The Academy of Nutrition and Dietetics

There is a preceptor and mentor page available through the Academy. However, based on the feedback from this study's participants, it would be recommended to develop and disburse a free preceptor handbook that discusses best practices. Like the program-specific handbook, this could be a best practices resource that is updated regularly and available to all nutrition and dietetics professionals. In this way, everyone within the profession would have access to the same information and create an opportunity for consistency between programs and supervised practice sites.

Although the recently permitted practice of providing up to 15 CPEs per 5-year registration cycle is a step in the right direction, there should be further discussion and consideration regarding an increase in the number of CPEs granted for preceptorship each year. Many professionals are serving within this role for much more than 51 hours per year, which is the number of hours needed to obtain 3 CPEs per year for up to 15 CPEs per 5-year recertification cycle. Providing the same number of CPEs to professionals serving in this role most of the year as compared to only 51 hours per year is not reflective of the extra time and effort the professional spent in providing preceptorship to students in need of supervised practice.

Implement incentives such as free or reduced conference expenses, membership fees, and access to resources such as the Evidence Analysis Library and the Nutrition Care Manual. Providing a discount to attend the annual Food and Nutrition Conference and Expo (FNCE) for professionals who deliver preceptorship would increase access to the most recent information regarding the practice of nutrition and dietetics. This would aid in the professional's ability to

afford to attend this valuable conference. Drawings for free access to FNCE could also be considered for nutrition and dietetics professionals who provide preceptorship.

Membership to the Academy is voluntary and there is a wealth of information available to nutrition professionals as a perk of membership. A professional may not be a member of the Academy because it is cost-prohibitive to them. By providing a discount for preceptorship, Academy membership would increase, and the valuable information would be available to the preceptor. The professional would also then be eligible to join the dietetic practice groups which require Academy membership to access; the Nutrition Educators of Health Professionals and the Nutrition and Dietetics Educators and Preceptors practice groups could be of special interest to professionals who desire to fulfill the role of preceptorship but cannot afford Academy membership.

Opening access to the NCM and EAL to professionals who are preceptors could not only entice practitioners who are on the fence regarding preceptorship, but also provide them with best practices and standardized information. This not only benefits the preceptor and their individual practice, but the facility, the student's experience, the college's access to preceptors who have the tools they need to succeed, and to the entire nutrition and dietetics profession as a whole.

Consider developing a specialty practice credential for preceptors. This could be an excellent way to show support and recognition for the preceptor role. Preceptors could then become board-certified as nutrition and dietetics preceptors, which in turn could open possibilities for them to gain a higher wage that reflects their elevated competencies. It would also benefit the profession because practitioners who are board-certified preceptors could provide consistent best practice experiences for students. This could create an opportunity for the

student who becomes a professional to decide to provide preceptorship because they had a positive supervised practice experience.

Increase allowable simulation hours and expand supervised practice locations to promote the inclusion of telehealth and remote work. In the absence of program reform due to licensure restraints and a multitude of ACEND competencies that need to be met which require time and guidance, increased simulation hours and access to telehealth or remote supervised practice hours would be an excellent way to remove part of the burden of 1,200 hours for dietitian and 450 for dietetic technician supervised practice requirements. It is noted that rarely is the entirety of a supervised practice experience conducted within the same location with a singular preceptor. However, breaking the supervised practice requirements into even 3 sections such as clinical, management, and community still results in a number of hours being spent with one preceptor. By allowing greater acceptance of increased simulation hours within didactic courses with programs, such as EHR-Go, the student would prove comprehension of some competencies before entering their supervised practice experience and be stronger in their skills when they do begin with their hosting facility.

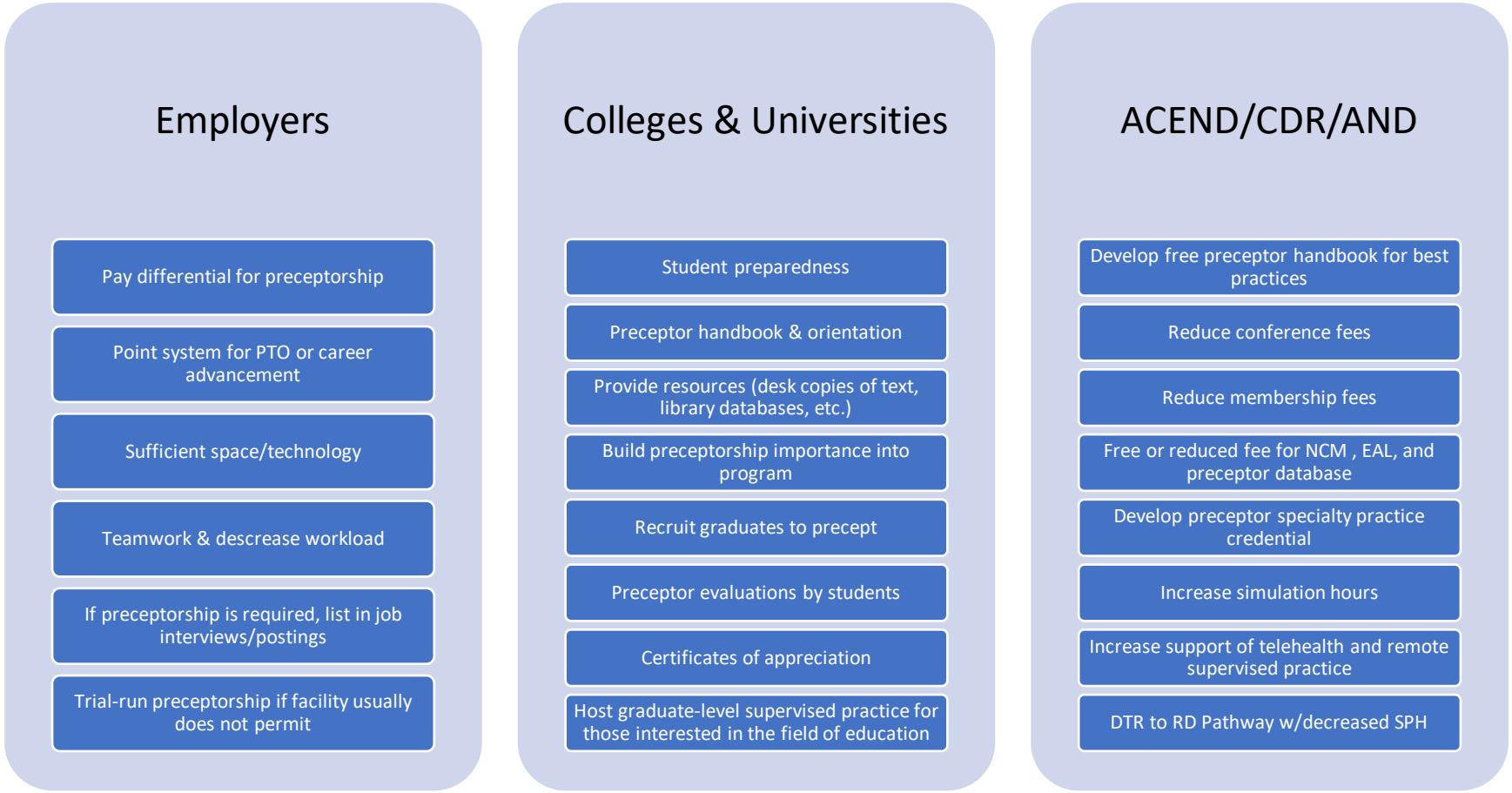
Currently, the preceptor database provided by on the Academy's preceptors and mentors website requires Academy membership to access. Requiring Academy membership limits the access to this potentially valuable tool. The Academy should consider free access to the preceptor database to benefit students within ACEND-accredited programs and increase visibility of nutrition and dietetics professionals who are willing to serve in this invaluable role which in turn could decrease preceptor shortages.

Lastly, ACEND should promote a DTR to RD career pathway in which the student could provide a portfolio of their competencies that would reduce the number of supervised practice

hours required within the dietitian program. Competencies within the portfolio could be obtained either through their supervised practice experience within the ACEND-accredited DT program, or through their life experience of working as a DTR. This could promote a career ladder for DTRs who want to further their education, but who find the supervised practice hours to be an unrealistic hurdle to their goals. It would also ease part of the burden of identifying a willing preceptor for that DTR to RD student for competencies they already possess.

Figure 10

Recommendations for Practice to Increase Preceptor Willingness and Satisfaction within ACEND-Accredited Programs



Note: PTO = paid time off; NCM = nutrition care manual; EAL = evidence analysis library; ACEND = Accreditation Council for Education in Nutrition and Dietetics; CDR = Commission on Dietetic Registration; AND = Academy of Nutrition and Dietetics; SPH = supervised practice hours.

Recommendations for Future Research

The logistics of beginning phase 1 of this study were impacted by a process change regarding gaining access to the distribution list that was utilized to disburse the electronic survey. Previously, the distribution list was provided by the Academy, and all participants would have been members. The new process tasked the CDR with providing the distribution list. This is a better representation of the profession because not everyone who is a RD or DTR is also an Academy member. However, in retrospect it would have been interesting to examine if Academy membership is also a factor that impacts the decision on whether or not nutrition and dietetics professionals provide preceptorship. In their study of state public health and human services management, Moynihand and Pandey (2007) found that public service motivation is strongly positively related to professional association membership. Therefore, future research on this topic should include a question on Academy membership.

Future research is needed to determine if there is a significant difference between the CDR pass-rate for DTRs and the professional practice competencies between graduates who completed the traditional associate's degree program with built-in supervised practice versus the DPD graduate with a bachelor's degree without supervised practice experience. Moreover, if an increased simulation allowance or greater acceptance of telehealth and remote supervised practice experiences is permitted, further studies would be needed to examine if the practice competencies and pass-rates of individuals participating in these opportunities differ from the tradition routes of supervised practice experiences.

Lastly, the majority of respondents were White women who held the RD credential. Future research should focus on the importance to identify factors that impact the decisions of nutrition professionals of color and/or men in order to encourage a greater understanding of

issues that affect minority members of the profession, and to promote greater diversity and inclusion within the profession.

Conclusions

RDs and DTRs are nutrition professionals who promote health and wellness through dietary interventions. Medical nutrition therapy for sick populations is also a core tenant of their professions. With 42% of adults and 18.5% of children aged 2 to 19 years qualifying as obese, and $147 billion dollars spent on obesity-related illnesses per year, the importance of the RD and DTR credentials are evident (CDC, 2017a; CDC, 2020a). Furthermore, CareerWise (2019a, 2019b) projects a nation-wide growth demand for DTRs (14.6%) and RDs (9.3%) by 2028. Supervised practice is a requirement for all RD programs and most DTR programs. A preceptor is “a practitioner who serves as faculty for students/interns during supervised practice by overseeing practical experiences, providing one-on-one training, and modeling professional behaviors and values” (Commission on Dietetic Registration, 2020d, p. 1). However, there is a notable shortage of professionals within the field who are willing to serve as preceptors to students. Without preceptors, most students will not be able to complete their program requirements that are needed to be eligible for their credentialing examination. This could affect the profession’s ability to meet the needs of the populations that they serve.

This pragmatic mixed-methods study adds to the knowledge base regarding preceptorship for ACEND-accredited programs through an online questionnaire and a subsequent OSFG and interview process. Participants identified the main factor that affect their decision to precept as their preceptor category with those claiming a desire to precept indicating greater willingness and satisfaction within the preceptor role than their unwilling counterparts; increased willingness was noted within the 20 to 25 year age range, making new graduates an ideal demographic to

focus preceptor recruitment efforts. Increased willingness to precept was noted for those who served 27-39 weeks as a preceptor in the previous year. This indicates that the allowance of at least 1/3 of the calendar year to be free of preceptor duties could be ideal to support the future willingness of the professional to fulfill this role.

Awareness of available supports such as the preceptor database, 15 CPEs per 5-year recertification cycle for precepting, and the 8 CPE online preceptor training available through the CDR impacted the practitioner's willingness to precept, satisfaction within the role, and perceived sufficient support and resources to fulfill the role successfully. Therefore, it would be important to discuss these resources within ACEND-accredited programs before students even enter into the field. Openness to hosting an online student in their area impacted preceptor willingness, as did employment status with those who were employed full-time showing greater willingness to precept than those who were self-employed. This indicates that recruitment for preceptors could have the greatest level of success with professionals who are working full-time. However, if incentives such as stipends or grants can be implemented, the self-employed professional would present an ideal untapped potential preceptor pool. Furthermore, nutrition practitioners who are serving as faculty within an ACEND-accredited program could provide a perfect supervised practice for graduate students who are interested in teaching within higher education in the future. This would not only benefit the student, but it would be beneficial to the faculty and the college through course and program assistantship at no additional cost to the institution of higher education.

The main challenge to preceptorship were reported as insufficient time and high acuity (i.e., medically challenging) settings. This indicates the need to adjust workloads to allow for the preceptor to have sufficient time to guide the student through their questions. Nontraditional

settings, such as working in industry, research, and education was also indicated as a challenge. Tailoring supervised practice experiences to fit these locations could increase access to professionals who are willing to perform preceptorship but feel they are unable to due to accreditation standards. Additionally, the expectation that the internship will be mutually beneficial with well-prepared students was stressed. Allowing for flexibility with assignments to meet ACEND-required competencies could be crucial to promote a mutually beneficial experience. Additionally, a lack of appreciation decreased willingness, perceived insufficient preceptor competency, employer requirements, lack of incentives such as compensation or PTO, insufficient space and support, insufficient resources such as technology, lack of references to successfully precept, and skills of both the student and the preceptor.

The identified solutions to combat preceptor shortages included updating ACEND/CDR resources to assure best practices and up-to-date information such as the development of a preceptor handbook and allowing for free or discounted access to the NCM, EAL, and preceptor database. Another solution was to develop a DTR to RD pathway that would decrease the number of supervised practice hours and provide a career ladder for DTRs who wish to advance their education. RDs and DTRs weigh the perceived costs and benefits of becoming a preceptor when they decide on whether or not fill this role. This is an illustration of Homan's (1958) social exchange theory. The only caveat that this research presents to the theory is when preceptorship is an employer-required task. Support and encouragement from employers, incentives such as increased wages, a preceptor pay differential and/or PTO could positively impact the perceived benefits associated with preceptorship and increase willingness and satisfaction within the role. College and/or university interventions, such as the provision of textbooks or access to the

institutional databases, and the establishment of ideal preceptor to student ratios could also be potential solutions to combat preceptor shortage.

Limitations of the study include self-selection for the completion of both phases of the study. There was also a lack of diversity in respondents, however the field of nutrition and dietetics is predominantly comprised of White women. It is also unknown if Academy of Nutrition and Dietetics membership was a factor in whether or not nutrition professionals choose to be preceptors. Future studies should include questions regarding Academy of Nutrition and Dietetics membership as well as seek to actively solicit input from minority members of the profession.

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Appendix A

Dietetic Technician Curriculum and Learning Activities Required Elements

Standard 5: Curriculum and Learning Activities

The Core Knowledge and Competencies must be the basis on which the program curriculum and learning activities are built within the context of the mission and goals of the program.

REQUIRED ELEMENTS:

5.1 The program's curriculum must be designed to ensure the breadth and depth of requisite knowledge and skills needed for entry-level practice as a nutrition and dietetics technician, registered.

a. The program's curriculum must include the following required components of the program's curriculum, including prerequisites:

1. General understanding of the scientific basis of nutrition and dietetics, exposure to research literature and application to technical practice
2. Oral and written communication skills sufficient for entry into technical practice
3. Principles and techniques of effective interviewing and education methods for diverse individuals and groups
4. Governance applicable to the technical level of nutrition and dietetics practice, such as the Scope of Nutrition and Dietetics Practice and the Code of Ethics for the Profession of Nutrition and Dietetics; and interprofessional relationships in various practice settings
5. Principles of medical nutrition therapy and the Nutrition Care Process including principles and methods of nutrition screening for referral to the registered dietitian nutritionist, collection of assessment data, nutrition interventions and monitoring strategies appropriate for the technician level of practice
6. Role of environment, food, nutrition and lifestyle choices in health promotion and disease prevention
7. Principles of applied food science and techniques of food preparation
8. Principles of procurement, production, distribution and service of food
9. Applied management principles required to deliver food and nutrition programs
10. Applied principles of human resource management
11. Legislative and regulatory policy related to nutrition and dietetics operations
12. Quality management of food and nutrition services;
13. Health care delivery (such as accountable care organizations, managed care, medical homes) and policies which impact technical practice of dietetics
14. Applied concepts of chemistry, anatomy, physiology, microbiology related to food safety, mathematics, fundamentals of nutrition and nutrition across the life span
15. Cultural competence and human diversity; human behavior, psychology, sociology or anthropology

(Accreditation Council for Education in Nutrition and Dietetics, 2016b, p. 9)

Appendix B

Coordinated Program Curriculum and Learning Activities Required Elements

Standard 5: Curriculum and Learning Activities

The Core Knowledge and Competencies must be the basis on which the program curriculum and learning activities are built and at least one concentration must be identified, all within the context of the mission and goals of the program.

REQUIRED ELEMENTS:

5.1 The program's curriculum must be designed to ensure the breadth and depth of requisite knowledge and skills needed for entry-level practice as a registered dietitian nutritionist.

a. The program's curriculum must include the following required components, including prerequisites:

1. Research methodology, interpretation of research literature and integration of research principles into evidence-based practice
2. Communication skills sufficient for entry into professional practice
3. Principles and techniques of effective education, counseling and behavior change theories and techniques
4. Governance of nutrition and dietetics practice, such as the Scope of Nutrition and Dietetics Practice and the Code of Ethics for the Profession of Nutrition and Dietetics; and interprofessional relationships in various practice settings
5. Principles of medical nutrition therapy and the Nutrition Care Process
6. Role of environment, food, nutrition and lifestyle choices in health promotion and disease prevention
7. Management theories and business principles required to deliver programs and services
8. Continuous quality management of food and nutrition services
9. Fundamentals of public policy, including the legislative and regulatory basis of nutrition and dietetics practice
10. Health care delivery systems (such as accountable care organizations, managed care, medical homes)
11. Coding and billing of nutrition and dietetics services to obtain reimbursement for services from public or private payers, fee-for-service and value-based payment systems
12. Food science and food systems, environmental sustainability, techniques of food preparation and development and modification and evaluation of recipes, menus and food products acceptable to diverse populations
13. Organic chemistry, biochemistry, anatomy, physiology, genetics, microbiology, pharmacology, statistics, logic, nutrient metabolism, integrative and functional nutrition and nutrition across the lifespan
14. Cultural competence and human diversity; human behavior, psychology, sociology or anthropology

(Accreditation Council for Education in Nutrition and Dietetics, 2016c, p. 9)

Appendix C

State Licensure Laws

Practice Exclusivity			
	Minimum Supervised Practice Requirements	Protected Titles	Statute Link
Alabama	None Listed	dietitian/nutritionist, dietitian, dietician, registered dietitian, registered dietician, nutritionist, D, RD, LD, LN	http://alisondb.legislature.state.al.us/alison/codeofalabama/1975/34-34-1.htm
Arkansas	900	dietitian, licensed dietitian	http://www.ardieteticslicbrd.net/docs/pdf/Act_392_1989.pdf
Delaware	900	licensed dietitian, licensed nutritionist, nutritionist, dietitian, LDN	http://www.ardieteticslicbrd.net/docs/pdf/Act_392_1989.pdf
District of Columbia	900	dietitian/nutritionist, licensed dietitian, licensed nutritionist, dietitian, nutritionist, LDN, LD, LN	https://doh.dc.gov/sites/default/files/dc/sites/doh/service_content/attachments/D.C.%20Municipal%20Regulations%20for%20Dietetics%20%28Chapter%2044%20Amended%208-18-17%29.pdf
Florida	900	dietitian, licensed dietitian, nutritionist, licensed nutritionist, nutrition counselor, licensed nutrition counselor	http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&Search_String=&URL=0400-0499/0468/Sections/0468.509.html
Georgia	900	dietitian, LD, licensed dietitian	https://sos.ga.gov/plb/acrobat/Laws/40_Dietitians_43-11A.pdf
Illinois	900	licensed dietitian nutritionist	http://ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1297&ChapAct=225%C2%A0ILCS%C2%A030/&ChapterID=24&ChapterName=PROFESSIONS+AND+OCCUPATIONS&ActName=Dietetic+and+Nutrition+Services+Practice+Act.
Iowa	None Listed	licensed dietitian, dietitian	https://www.legis.iowa.gov/docs/iac/rule/01-21-2015.645.81.6.pdf
Kansas	900	dietitian, licensed dietitian, LD	http://www.kslegislature.org/li_2018/b2017_18/statute/065_000_0000_chapter/065_059_0000_article/065_059_0006_section/065_059_0006_k/

Kentucky	None Listed	dietitian, nutritionist, licensed dietitian, certified nutritionist, LD, CN	http://bdn.ky.gov/Documents/LAWS%20AND%20REGULATIONS%20September%202018%20Booklet.pdf
Louisiana	900	dietitian, dietician, nutritionist	https://www.lbedn.org/index.cfm/practice-act
Maine	6 Months Full Time	dietitian	http://www.mainelegislature.org/legis/statutes/32/title32sec9907.html
	2 Months Full Time	licensed dietetic technician	
Maryland	900	licensed dietitian-nutritionist, dietitian-nutritionist, LDN, dietitian, licensed dietitian, D, LD, nutritionist, licensed nutritionist, LN	http://www.dsd.state.md.us/comar/comarhtml/10/10.56.01.06.htm
Minnesota	900	dietitian, licensed dietitian, nutritionist, licensed nutritionist, or any occupational title using the word "dietitian" or "nutritionist;" except that any RDN can use the title RD	https://mn.gov/elicense/a-z/?id=1083-231478#/list/appId//filterType//filterValue//page/1/sort//order/
Mississippi	None Listed	dietitian, dietician or nutritionist, the letters LD, LN; except that any RDN can use the title and RD	https://msdh.ms.gov/msdhsite/_static/resources/135.pdf
Missouri	None Listed	dietitian, LD	https://revisor.mo.gov/main/OneSection.aspx?section=324.210&bid=35463&hl=
Montana	None Listed	nutritionist, licensed nutritionist	https://leg.mt.gov/bills/mca/title_0370/chapter_0250/part_0030/section_0020/0370-0250-0030-0020.html
Nebraska	900	protection of medical nutrition therapist implied, but not directly stated	https://www.nebraska.gov/rules-and-regs/regsearch/Rules/Health_and_Human_Services_System/Title-172/Chapter-061.pdf
Nevada	1,200	LD, licensed dietitian or use the word dietetics to represent qualified to practice	https://www.leg.state.nv.us/NRS/NRS-640E.html

New Mexico	None Listed	dietitian, nutritionist	https://laws.nmonesource.com/w/nmos/Chapter-61-NMSA-1978#!fragment/zoupio-_Toc28704172/BQCwhgziBcwMYgK4DsDWszIQewE4BUBTADwBdoAvbRABwEtsBaAfX2zgCYAOAdgAYALAEYeHAJQAaZNlKEIARUSFcAT2gBydRIhxc2ADb6AwkjTQAhMm2EwuBIuVqAJnUKk67zNdsIAynlIAITUAJQBRABkwgDUAQQA5IzCJUjAAI2gIGzsQMTEgA
North Carolina	1000	dietitian/nutritionist, dietitian, nutritionist, licensed dietitian/nutritionist, LD, LN, LDN	https://www.ncbdn.org/media.ashx/generalstatuteupdated112118.pdf
North Dakota	None Listed	dietitian, registered dietitian, licensed dietitian, licensed registered dietitian, RD, LD, LRD, LN, licensed nutritionist	https://ndbodp.com/wp-content/uploads/2019/05/Chapter_43-44_2013-08-01.pdf
Ohio	None Listed	dietitian	http://codes.ohio.gov/orc/4759
Puerto Rico	None Listed	dietitian, nutritionist	https://advance.lexis.com/document/?pdmfid=1000516&crid=cd23dbca-49ea-4e0f-bd22-d024ee81cd48&pddocfullpath=%2Fshared%2Fdocument%2Fstatutes-legislation%2Furn%3AcontentItem%3A5D6S-8FR1-66SD-8075-00008-00&pdtocnodeidentifier=AAWACEAAH&ecomp=3d5dk&prid=fd884a37-18b1-4d9b-8548-6550e13f9124
Rhode Island	900	dietitian/nutritionist, LDN	http://webserver.rilin.state.ri.us/Statutes/TITLE5/5-64/5-64-6.HTM
South Carolina	None Listed	dietitian, licensed dietitian, LD	https://www.scstatehouse.gov/code/t40c020.php
South Dakota	900	nutritionist, dietitian, licensed nutritionist, LN; except that any RDN can use the title and RD	http://sdlegislature.gov/Statutes/Codified_Laws/DisplayStatute.aspx?Type=Statute&Statute=36-10B-6

Tennessee	900	dietitian/nutritionist, licensed dietitian, licensed nutritionist, LD, LN	https://advance.lexis.com/document/?pdmfid=1000516&crid=5d10018f-677f-4818-b3c6-a75ce4a957d3&pddocfullpath=%2Fshared%2Fdocument%2Fstatutes-legislation%2Furn%3AcontentItem%3A50G5-6KJ0-R03N-R344-00008-00&pdtocnodeidentifier=ACKAAZAAI&ecomp=3d5dk&prid=6df3cfd8-bd92-44d1-8586-91c5e2ab051a

Licensure of Title Only or Certification			
	Minimum Supervised Practice Requirements	Protected Titles	Statute Link
Alaska	900	dietitian, licensed dietitian, nutritionist, licensed nutritionist, or an occupational title using the word dietitian or nutritionist	https://www.commerce.alaska.gov/web/portals/5/pub/DietitianStatutes.pdf
Connecticut	None Listed	Connecticut certified dietitian-nutritionist, Connecticut certified dietitian, Connecticut certified nutritionist, CD-N, CD, CN	https://www.cga.ct.gov/current/pub/chap_384b.htm
Hawaii	900	licensed dietitian, LD	https://www.capitol.hawaii.gov/hrscurrent/Vol10_Ch0436-0474/HRS0448B/HRS_0448B-0005.htm
Idaho	None Listed	dietitian, licensed dietitian (LD), registered dietitian (RD), registered dietitian nutritionist (RDN), or any other combination of terms that include the title dietitian	https://legislature.idaho.gov/statutesrules/idstat/Title54/T54CH35/SECT54-3506/
Indiana	900	certified dietitian, CD	http://iga.in.gov/legislative/laws/2016/ic/titles/025/articles/14.5/
Massachusetts	900	licensed dietitian/nutritionist	https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXVI/Chapter112/Section203

New Hampshire	900	licensed dietitian, dietitian	http://www.gencourt.state.nh.us/rsa/html/XXX/326-H/326-H-mrg.htm
New York	None Listed	certified dietitian, certified dietician, certified nutritionist	http://www.op.nysed.gov/prof/diet/article157.htm
Oklahoma	None Listed	licensed dietitian, LD; registered dietitian, RD unless CDR reg	http://www.okmedicalboard.org/dietitians/download/815/LDLAW-NEW-1116.pdf
Oregon	900	licensed dietitian, LD	https://www.oregonlegislature.gov/bills_laws/ors/ors691.html
Pennsylvania	900	licensed dietitian-nutritionist, LDN	https://www.legis.state.pa.us/CFDOCS/Legis/PN/Public/btCheck.cfm?txtType=HTM&sessYr=2017&sessInd=0&billBody=H&billTyp=B&billNbr=2721&pn=4256
Texas	900	licensed dietitian, LD, registered dietitian, RD; except that any RDN can use the title and RD	https://www.tdlr.texas.gov/diet/dietlaw.htm#701254
Utah	None Listed	dietitian, dietician, certified dietitian, CD, the letter D	https://le.utah.gov/xcode/Title58/Chapter49/58-49-S4.html?v=C58-49-S4_1800010118000101
Vermont	900	any words that imply holder is a certified dietitian	https://legislature.vermont.gov/statutes/section/26/073/03385
Washington	900	certified dietitian, certified dietician, certified nutritionist, D, CD, or CN	https://app.leg.wa.gov/RCW/default.aspx?cite=18.138.030
West Virginia	900	dietician, licensed dietician, dietitian, licensed dietitian	https://www.wvbold.com/Portals/WVBOLD/docs/Laws/wvcode.pdf
Wisconsin	900	dietitian, certified dietitian, registered dietitian, any representation that person is certified or licensed as a dietitian	https://docs.legis.wisconsin.gov/statutes/statutes/448/V/78
Wyoming	900	licensed dietitian, LD	https://drive.google.com/file/d/0Bzbn-PHKrODrT1g2VXQ2cEJhYnc/view

Title Protection Without Formal State Regulation			
	Minimum Supervised Practice Requirements	Protected Titles	Statute Link

California	900	dietitian, dietician, registered dietitian, registered dietician, registered dietitian nutritionist, RD, RDN	https://codes.findlaw.com/ca/business-and-professions-code/bpc-sect-2585.html
	450	dietetic technician, registered; DTR	
*Colorado	1,200	dietitian, licensed dietitian, LD	http://www.leg.state.co.us/clics/clics2012a/csl.nsf/fsbillcont/DE51EBF15E2BB0C487257981007E046F?Open&file=1060_01.pdf
Virginia	None Listed	dietitian, nutritionist, alone or in any combination with licensed, certified, or registered	https://www.dhp.virginia.gov/bhp/leg/Chapter%2027.1%20Dietitians%20and%20Nutritionists.docx

* Licensure bill proposed and awaiting rule.

No Licensure of Practice or Title			
	Minimum Supervised Practice Requirements	Protected Titles	Statute Link
Arizona	N/A	N/A	N/A
Michigan	N/A	N/A	N/A
New Jersey	N/A	N/A	N/A

Appendix D

IRB Approval Email

From: Wenger, Karla
To: Suarez-Sousa, Ximena P; Brekken, Angie K; Brekken, Angie K
Cc: Karch, Lisa I
Subject: IRB Exempt Approval
Date: Sunday, August 4, 2019 10:45:20 AM
Attachments: image007.png

Date:	8/4/19
Principal Investigator:	Ximena Suarez-Sousa
Co-Investigator(s):	Angela Brekken
Title of Study:	The recruitment of preceptors in Accreditation Council for Education in Nutrition and Dietetics (ACENS) Accredited Nutrition and Dietetics

Thank you for submitting your IRB Exempt Status Proposal. Your proposal has been reviewed and approved **Exempt research** under 45 CFR 46.104**.** You may proceed with your study after August 4, 2019.

The IRB will not conduct subsequent reviews of this protocol unless changes to the protocol occur. Any changes to the protocol will require a formal application to, and approval of, the IRB prior to implementation of the change. IRB applications are available on the Minnesota State University Moorhead IRB webpage: https://www.mnstate.edu/irb/

Best of Luck to you with your research!

Lisa Karch

Lisa Karch, Ph. D.
Interim Dean
Graduate & Extended Learning
Minnesota State University Moorhead

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mnstate.edu/graduate | **facebook** | **twitter**

Appendix E

NIH Certificate of Completion

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Angela Brekken** successfully completed the NIH Web-based training course "Protecting Human Research Participants."

Date of Completion: 08/29/2018

Certification Number: 2893771

NIH National Institutes of Health
Office of Extramural Research

Appendix F

Informed Consent Letter - Survey

Participation in Research

Title: The Recruitment of Preceptors in Accredited Nutrition and Dietetics Programs: A Survey on Challenges, Willingness, and Satisfaction

Purpose: The purpose of this research is to explore how available tools and resources impact a preceptor's, or potential preceptor's, willingness and satisfaction to provide supervised practice for nutrition and dietetics students in Accreditation Council for Education in Nutrition and Dietetics (ACEND) accredited programs.

Study Information: This study will explore what tools and support preceptors, or potential-preceptors, feel they require in order to be successful in their supervised practice experiences. Data will be collected via an online survey tool that will be distributed electronically to randomly selected Registered Dietitians (RDs) and Dietetic Technicians, Registered (DTRs). Participants will have a choice to submit their contact information to be considered for further focus group activity. If participants choose to provide their contact information for the focus group, their identifying information will not be tied to the survey results. The investigator will be looking for trends in the data which can potentially help program directors recruit and retain preceptors to meet nutrition and dietetics student's supervised practice needs.

Time: Participants will commit to complete the electronic survey in this study of their own will via electronic survey link distributed via email. This study will take place between September 2020 and May 2021. It will take about 15-25 minutes to complete the online survey. The total estimated time commitment for a participant who provides contact information, and is selected, for focus group activities is one hour.

Risks: Participation in the study will require RDs and DTRs to answer anonymous online survey questions. Participants can choose to provide contact information to be eligible for focus group activities that will protect the anonymity of the participants through the utilization of pseudonyms. The outcome of the study is unknown. There is no cost to participate in the survey or focus group, and there are no foreseeable risks to participate in the study.

Benefits: This study will support the improvement of supervised practice experiences for ACEND accredited nutrition and dietetics programs.

Confidentiality: All gathered information will be kept confidential and all responses will be anonymous, meaning that no one, not even the research team, will know how participants answered the survey questions. If a participant chooses to provide contact information to be eligible for focus group activity, this information will not be tied to their survey answers. Focus group participants will only be identified utilizing pseudonyms. Any future presentation of

survey data will be as group means and other descriptive and inferential statistics, with no identifiers included.

Participation or Withdrawal: Participation in this study will be voluntary. Participants may choose not to participate and may stop at any time.

Contact: If you have any questions about the study, you may contact any member listed below:

Angela Brekken, MS, RD, LD, FAND
Co-Investigator
Ph. 218-793-2484
Email: brekkenan@mnstate.edu

and/or

Ximena P. Suarez-Sousa, Ph.D.
Principal Investigator
Assistant Professor, School of Teaching and
Learning, Lommen 211C
College of Education and Human Services
Minnesota State University Moorhead
Ph. 218-477-2007
Email: suarez@mnstate.edu

Any questions about your rights may be directed to Lisa Karch, Ph.D. Chair of the MSUM Institutional Review Board, at 218-477-2699 or by lisa.karch@mnstate.edu.

“I have been informed of the study details and understand what participating in the study means. I understand that my identity will be protected and that I can choose to stop participating in the study at any time. By providing my electronic signature and clicking into the survey, I am providing my informed consent to be a participant in this study. I am at least 18 years of age or older.”

Appendix G.

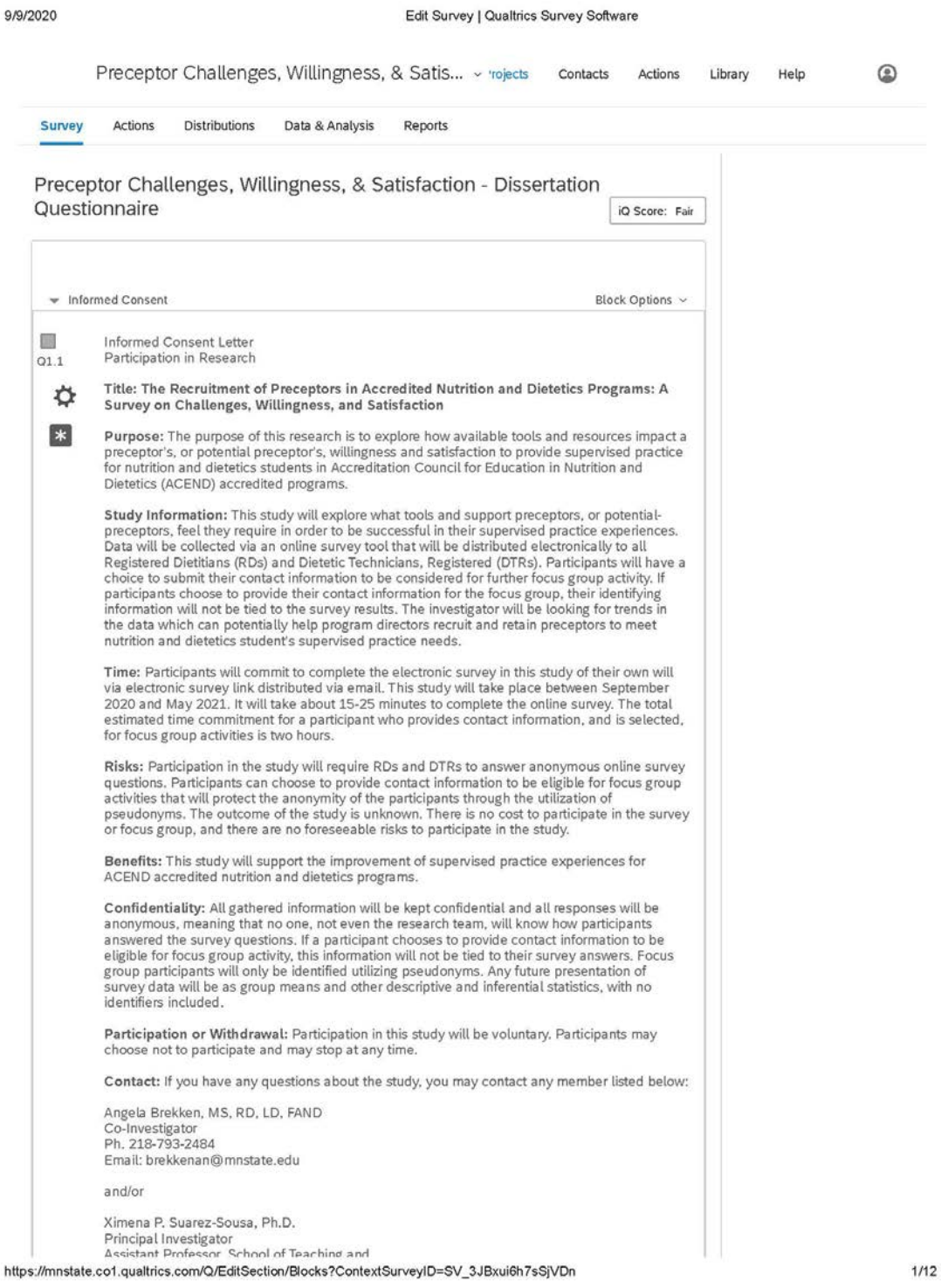
Registration Examination for Dietetic Technicians First Time Candidates

	Total Eligible	Total Tested & Percentages *	Percent Passing										
			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Pathway 1 (Traditional Associate Degree)	3932	2497 64%	56% 113 Pass 88 Fail	67% 149 Pass 75 Fail	65% 168 Pass 92 Fail	61% 173 Pass 110 Fail	62% 167 Pass 103 Fail	72% 174 Pass 69 Fail	68% 196 Pass 92 Fail	65% 146 Pass 78 Fail	65% 126 Pass 67 Fail	64% 101 Pass 56 Fail	63% 89 Pass 53 Fail
Pathway 2 (DPD + Supervised Practice)	22	19 86%	63% 5 Pass 3 Fail	50% 3 Pass 3 Fail	50% 1 Pass 1 Fail	0%	100% 1 Pass 0 Fail	0%	100% 2 Pass 0 Fail	0%	0%	0%	0%
Pathway 3 (DPD Only)	10,776	5454 51%	66% 42 Pass 22 Fail	65% 188 Pass 101 Fail	66% 296 Pass 153 Fail	63% 362 Pass 212 Fail	67% 361 Pass 176 Fail	74% 405 Pass 140 Fail	73% 480 pass 178 Fail	72% 495 pass 193 fail	70% 417 pass 179 fail	68% 375 Pass 173 Fail	65% 320 Pass 170 Fail

*Percentages reflect the total number of first-time examinees compared to the total eligible population from 2009 to 2019.

Appendix H

Electronic Survey Questions



9/9/2020 Edit Survey | Qualtrics Survey Software

Preceptor Challenges, Willingness, & Satis... ▾ 'rojects Contacts Actions Library Help

Survey Actions Distributions Data & Analysis Reports

Preceptor Challenges, Willingness, & Satisfaction - Dissertation Questionnaire

iQ Score: Fair

▾ Informed Consent Block Options ▾

Q1.1 Informed Consent Letter
Participation in Research

Title: The Recruitment of Preceptors in Accredited Nutrition and Dietetics Programs: A Survey on Challenges, Willingness, and Satisfaction

Purpose: The purpose of this research is to explore how available tools and resources impact a preceptor's, or potential preceptor's, willingness and satisfaction to provide supervised practice for nutrition and dietetics students in Accreditation Council for Education in Nutrition and Dietetics (ACEND) accredited programs.

Study Information: This study will explore what tools and support preceptors, or potential-preceptors, feel they require in order to be successful in their supervised practice experiences. Data will be collected via an online survey tool that will be distributed electronically to all Registered Dietitians (RDs) and Dietetic Technicians, Registered (DTRs). Participants will have a choice to submit their contact information to be considered for further focus group activity. If participants choose to provide their contact information for the focus group, their identifying information will not be tied to the survey results. The investigator will be looking for trends in the data which can potentially help program directors recruit and retain preceptors to meet nutrition and dietetics student's supervised practice needs.

Time: Participants will commit to complete the electronic survey in this study of their own will via electronic survey link distributed via email. This study will take place between September 2020 and May 2021. It will take about 15-25 minutes to complete the online survey. The total estimated time commitment for a participant who provides contact information, and is selected, for focus group activities is two hours.

Risks: Participation in the study will require RDs and DTRs to answer anonymous online survey questions. Participants can choose to provide contact information to be eligible for focus group activities that will protect the anonymity of the participants through the utilization of pseudonyms. The outcome of the study is unknown. There is no cost to participate in the survey or focus group, and there are no foreseeable risks to participate in the study.

Benefits: This study will support the improvement of supervised practice experiences for ACEND accredited nutrition and dietetics programs.

Confidentiality: All gathered information will be kept confidential and all responses will be anonymous, meaning that no one, not even the research team, will know how participants answered the survey questions. If a participant chooses to provide contact information to be eligible for focus group activity, this information will not be tied to their survey answers. Focus group participants will only be identified utilizing pseudonyms. Any future presentation of survey data will be as group means and other descriptive and inferential statistics, with no identifiers included.

Participation or Withdrawal: Participation in this study will be voluntary. Participants may choose not to participate and may stop at any time.

Contact: If you have any questions about the study, you may contact any member listed below:

Angela Brekken, MS, RD, LD, FAND
Co-Investigator
Ph. 218-793-2484
Email: brekkenan@mnstate.edu

and/or

Ximena P. Suarez-Sousa, Ph.D.
Principal Investigator
Assistant Professor, School of Teaching and

https://mnstate.co1.qualtrics.com/Q/EditSection/Blocks?ContextSurveyID=SV_3JBxui6h7sSjVDn 1/12

Learning, Lommen 211C
College of Education and Human Services
Minnesota State University Moorhead
Ph. 218-477-2007
Email: suarez@mnstate.edu

Any questions about your rights may be directed to Lisa Karch, Ph.D. Chair of the MSUM Institutional Review Board, at 218-477-2699 or by lisa.karch@mnstate.edu.

"I have been informed of the study details and understand what participating in the study means. I understand that my identity will be protected and that I can choose to stop participating in the study at any time. By providing my electronic signature and clicking into the survey, I am providing my informed consent to be a participant in this study. I am at least 18 years of age or older."

Clicking the "Agree" button below is equivalent to your electronic signature. If you do not wish to complete the survey, simply close the internet browser.

○ Agree

Add Block

Demographics Block Options

Q2.1

Section 1: Demographics

Directions: This section of the survey will gather information about your personal and educational background. Please answer the questions with the prompts provided to the best of your ability.

Definitions: Use the following definitions as you answer questions in section 1.

DTR/NDTR: Dietetic Technician, Registered and Nutrition and Dietetics Technician, Registered (used interchangeably).

RD/RDN: Registered Dietitian and Registered Dietitian Nutritionist (used interchangeably).

Preceptor: A practitioner who serves as faculty for students/interns during supervised practice by overseeing practical experiences, providing one-on-one training , and modeling professional behaviors and values

Current Preceptor: Currently providing preceptorship to a nutrition and dietetics student within a supervised practice setting.

Former Preceptor: Previously provided preceptorship to a nutrition and dietetics student within a supervised practice setting.

Non-Preceptor: Have not provided preceptorship to a nutrition and dietetics student.

Q2.2

Age

0 10 20 30 40 50 60 70 80 90 100

Click to write Choice 1

Q2.3

Gender

- Female
- Male
- Nonbinary
- Prefer not to answer

Q2.4

Ethnicity

- White
- Hispanic or Latino
- Black or African American
- Native American or American Indian
- Asian or Pacific Islander
- Other
- Prefer not to answer

Q2.5

State of residence

Alabama

Q2.6

Marital Status

- Single (never married)
- Married
- In a domestic partnership
- Divorced
- Widowed
- Prefer not to answer

Q2.7

Education Pathway

- Dietetic Technician Program (With Built-In Supervised Practice)
- Coordinated Baccalaureate Program (With Built-In Supervised Practice)
- Combined Coordinated Baccalaureate and Graduate Program (With Built-In Supervised Practice)
- Didactic Baccalaureate Program (No Supervised Practice)
- Didactic Baccalaureate Program (With External Supervised Practice)
- Didactic Baccalaureate Program (With External Combined Graduate Degree and Supervised Practice)
- Other

Q2.8

Credentials (select all that apply)

- [ ] DTR or NDTR
- [ ] RD or RDN
- [ ] Graduate (MS, MBA, etc.)
- [ ] Doctorate (PhD, EdD, etc.)
- [ ] Other

Q2.9

Employment status

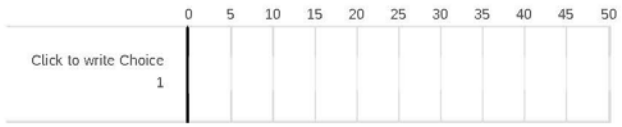
- ○ Employed full-time (40 hours or more per week)
- ○ Employed part-time (less than 40 hours per week)
- ○ Unemployed (currently looking for work)
- ○ Unemployed (currently not looking for work)
- ○ Retired
- ○ Self-Employed
- ○ Unable to work

Condition: Retired Is Selected. Skip To: End of Survey.

Condition: Unable to work Is Selected. Skip To: End of Survey.

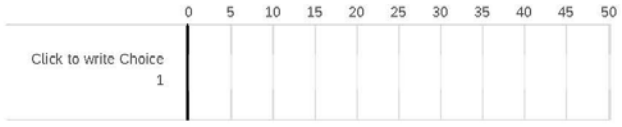
Q2.10

Years in practice



Q2.11

Years in current position



Q2.12 Area of practice (select all that apply)

- ☐ Clinical (non-administration)
- ☐ Clinical Administration
- ☐ Foodservice (non-administration)
- ☐ Foodservice Administration
- ☐ Combined Clinical and Foodservice (non-administration)
- ☐ Combined Clinical and Foodservice Administration
- ☐ Community/Public Health
- ☐ Education
- ☐ Private Practice
- ☐ Business and Industry
- ☐ Research
- ☐ Other

Q2.13 Select the category that best fits your current situation

- ○ Current Preceptor - desire to continue precepting
- ○ Current Preceptor - no desire to continue precepting
- ○ Former Preceptor - desire to precept again
- ○ Former Preceptor - no desire to precept again
- ○ Non-Preceptor - desire to become a preceptor
- ○ Non-Preceptor - no desire to become a preceptor

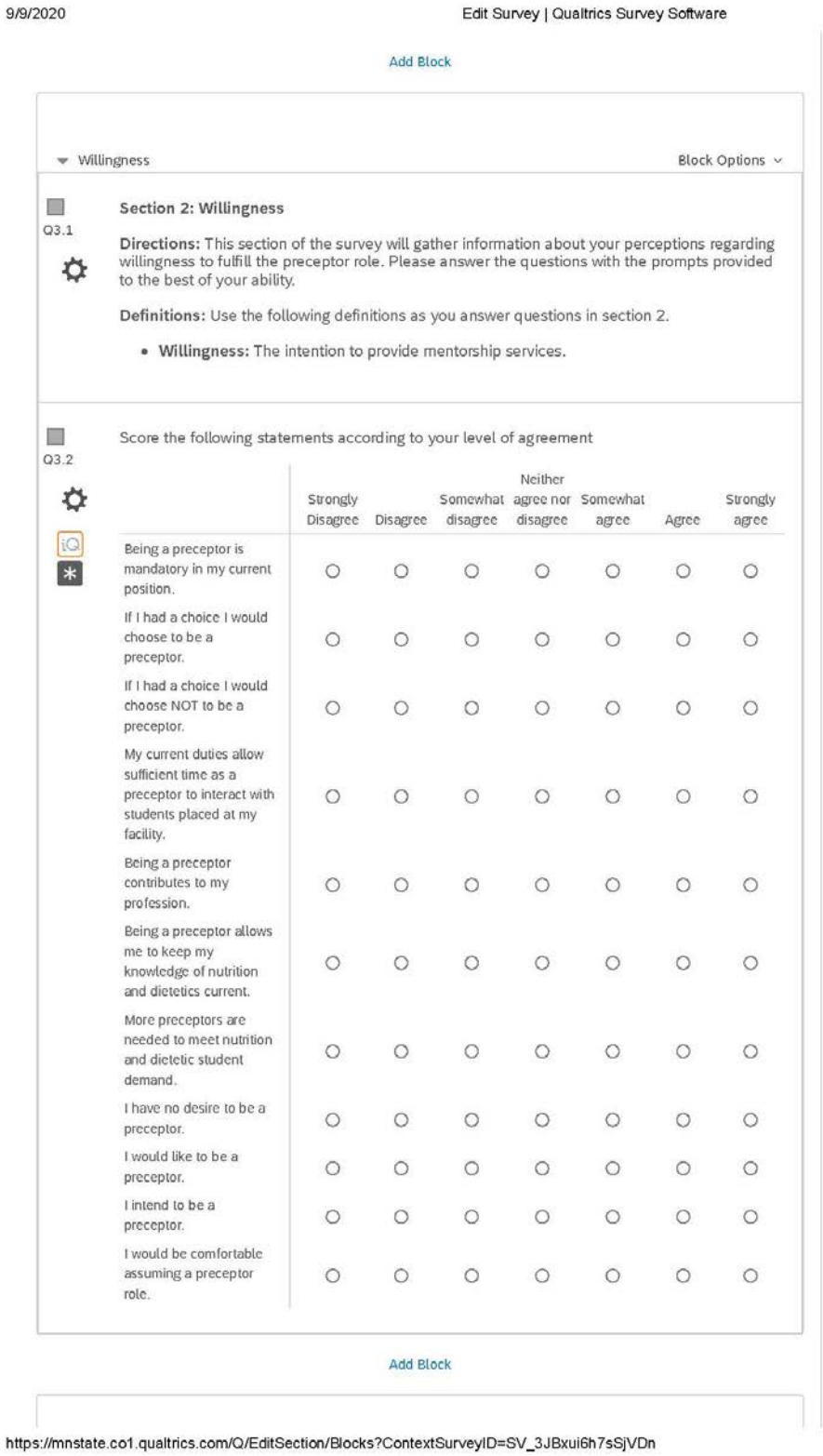
Q2.14 Weeks served as a preceptor in the preceding year

0 5 10 16 21 26 31 36 42 47 52

Click to write Choice 1

Q2.15 Which of the following programs have you provided preceptorship services? (select all that apply)

- ☐ Traditional Dietetic Technician
- ☐ Online Dietetic Technician
- ☐ Traditional Coordinated Bachelor's Degree
- ☐ Online Coordinated Bachelor's Degree
- ☐ Traditional Dietetic Internship
- ☐ Online Dietetic Internship
- ☐ Traditional Combined Graduate Degree and Dietetic Internship
- ☐ Online Combined Graduate Degree and Dietetic Internship
- ☐ Other
- ☐ × None of the Above



9/9/2020 Edit Survey | Qualtrics Survey Software

Add Block

Willingness Block Options

Q3.1

Section 2: Willingness

Directions: This section of the survey will gather information about your perceptions regarding willingness to fulfill the preceptor role. Please answer the questions with the prompts provided to the best of your ability.

Definitions: Use the following definitions as you answer questions in section 2.

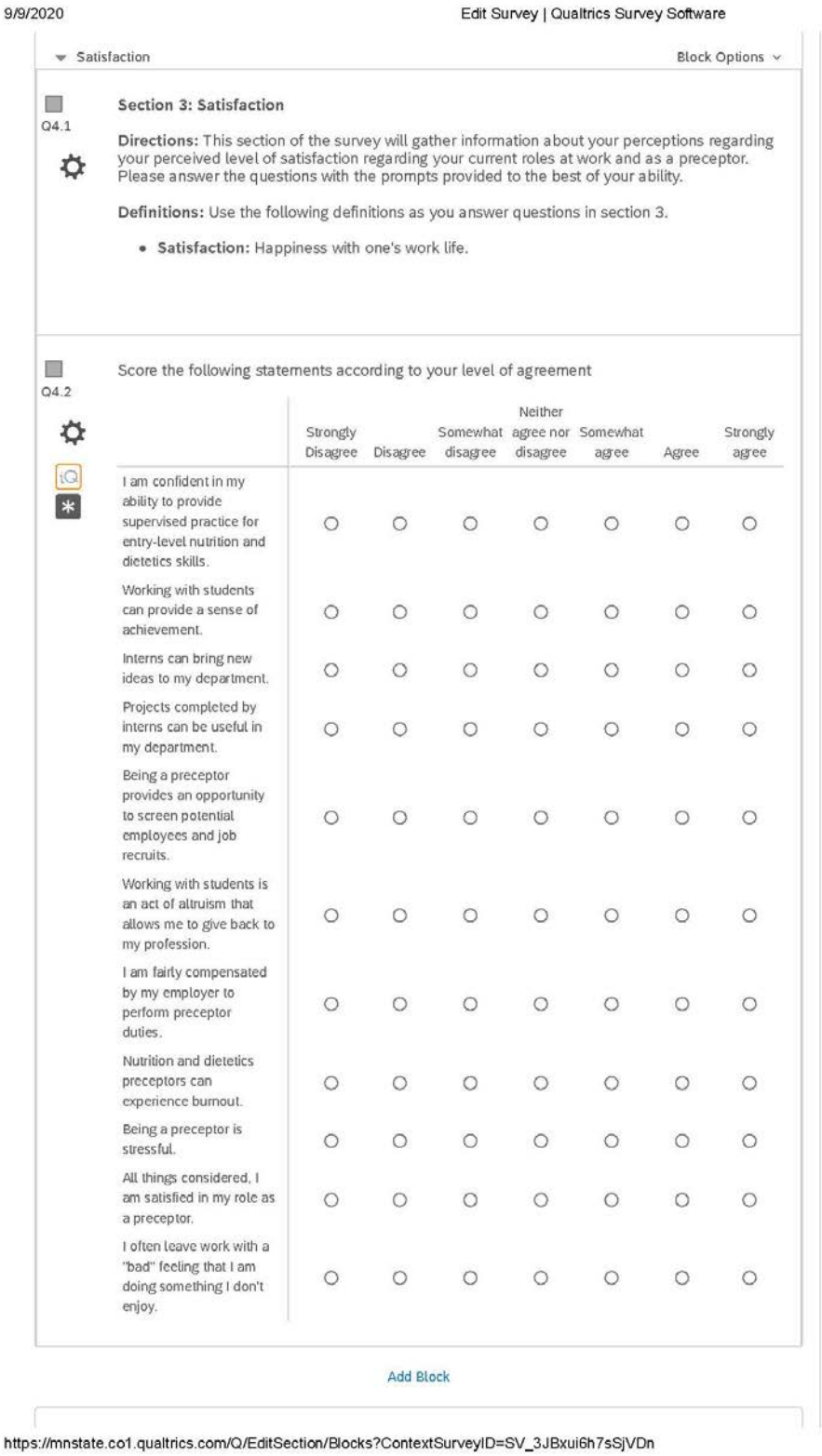
- **Willingness:** The intention to provide mentorship services.

Q3.2

Score the following statements according to your level of agreement

	Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Being a preceptor is mandatory in my current position.	○	○	○	○	○	○	○
If I had a choice I would choose to be a preceptor.	○	○	○	○	○	○	○
If I had a choice I would choose NOT to be a preceptor.	○	○	○	○	○	○	○
My current duties allow sufficient time as a preceptor to interact with students placed at my facility.	○	○	○	○	○	○	○
Being a preceptor contributes to my profession.	○	○	○	○	○	○	○
Being a preceptor allows me to keep my knowledge of nutrition and dietetics current.	○	○	○	○	○	○	○
More preceptors are needed to meet nutrition and dietetic student demand.	○	○	○	○	○	○	○
I have no desire to be a preceptor.	○	○	○	○	○	○	○
I would like to be a preceptor.	○	○	○	○	○	○	○
I intend to be a preceptor.	○	○	○	○	○	○	○
I would be comfortable assuming a preceptor role.	○	○	○	○	○	○	○

Add Block



9/9/2020 Edit Survey | Qualtrics Survey Software

Satisfaction Block Options

Q4.1

Section 3: Satisfaction

Directions: This section of the survey will gather information about your perceptions regarding your perceived level of satisfaction regarding your current roles at work and as a preceptor. Please answer the questions with the prompts provided to the best of your ability.

Definitions: Use the following definitions as you answer questions in section 3.

- **Satisfaction:** Happiness with one's work life.

Q4.2

Score the following statements according to your level of agreement

	Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am confident in my ability to provide supervised practice for entry-level nutrition and dietetics skills.	○	○	○	○	○	○	○
Working with students can provide a sense of achievement.	○	○	○	○	○	○	○
Interns can bring new ideas to my department.	○	○	○	○	○	○	○
Projects completed by interns can be useful in my department.	○	○	○	○	○	○	○
Being a preceptor provides an opportunity to screen potential employees and job recruits.	○	○	○	○	○	○	○
Working with students is an act of altruism that allows me to give back to my profession.	○	○	○	○	○	○	○
I am fairly compensated by my employer to perform preceptor duties.	○	○	○	○	○	○	○
Nutrition and dietetics preceptors can experience burnout.	○	○	○	○	○	○	○
Being a preceptor is stressful.	○	○	○	○	○	○	○
All things considered, I am satisfied in my role as a preceptor.	○	○	○	○	○	○	○
I often leave work with a "bad" feeling that I am doing something I don't enjoy.	○	○	○	○	○	○	○

Add Block

https://mnstate.co1.qualtrics.com/Q/EditSection/Blocks?ContextSurveyID=SV_3JBxui6h7sSjVDn 7/12

Resources Block Options

Q5.1

Section 4: Resources

Directions: This section of the survey will gather information about your perceptions regarding the resources (tools and support) required to fulfill the preceptor role. Please answer the questions with the prompts provided to the best of your ability.

Definitions: Use the following definitions as you answer questions in section 4.

- **Factors:** The items that impact decisions regarding preceptorship.

Q5.2

Factors/Tools

Score the following statements according to your level of agreement.

	Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Adequate staff is available within my facility to assist in supervised practice of students.	○	○	○	○	○	○	○
Adequate time is available within my facility to assist in supervised practice of students.	○	○	○	○	○	○	○
Adequate space is available within my facility to assist in supervised practice of students.	○	○	○	○	○	○	○
Adequate technology is available within my facility to assist in supervised practice of students.	○	○	○	○	○	○	○
The program director/course instructor provides sufficient assignment detail within the syllabus to adequately provide supervised practice to students.	○	○	○	○	○	○	○
The program director/course instructor provides sufficient written guidelines (rubrics) to evaluate students.	○	○	○	○	○	○	○
The program director/course instructor provides sufficient orientation/expectations to adequately provide supervised practice to students.	○	○	○	○	○	○	○

Q5.3

Factors/Support

Score the following statements according to your level of agreement.

	Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
My employer values the role of the preceptor.	○	○	○	○	○	○	○
My employer values my feedback regarding the role of the preceptor.	○	○	○	○	○	○	○
My peers value the role of the preceptor.	○	○	○	○	○	○	○
My peers value my feedback regarding the role of the preceptor.	○	○	○	○	○	○	○
The program director/course instructor values my role as a preceptor.	○	○	○	○	○	○	○
The program director/course instructor values my feedback regarding my role as a preceptor.	○	○	○	○	○	○	○
I can contact the program director/course instructor for answers to questions regarding any aspect of the supervised practice I am providing.	○	○	○	○	○	○	○
The program director/course instructor returns my calls or emails in a timely fashion.	○	○	○	○	○	○	○

Add Block

Narrative Block Options

Q6.1

Section 5: Narrative

Directions: This section of the survey will gather qualitative information about your perceptions regarding the the preceptor role. Please answer the questions with the prompts provided to the best of your ability.

- **Challenges:** Obstacles that impair or prevent the completion of a task.
- **Solutions:** Potential answers to perceived drawbacks associated with the role of the preceptor.

Q6.2 Describe the top three reasons that impact your choice on whether or not to be a preceptor.

Q6.3 Describe the three most important resources a preceptor would need to successfully provide supervised practice to a nutrition and dietetics student.

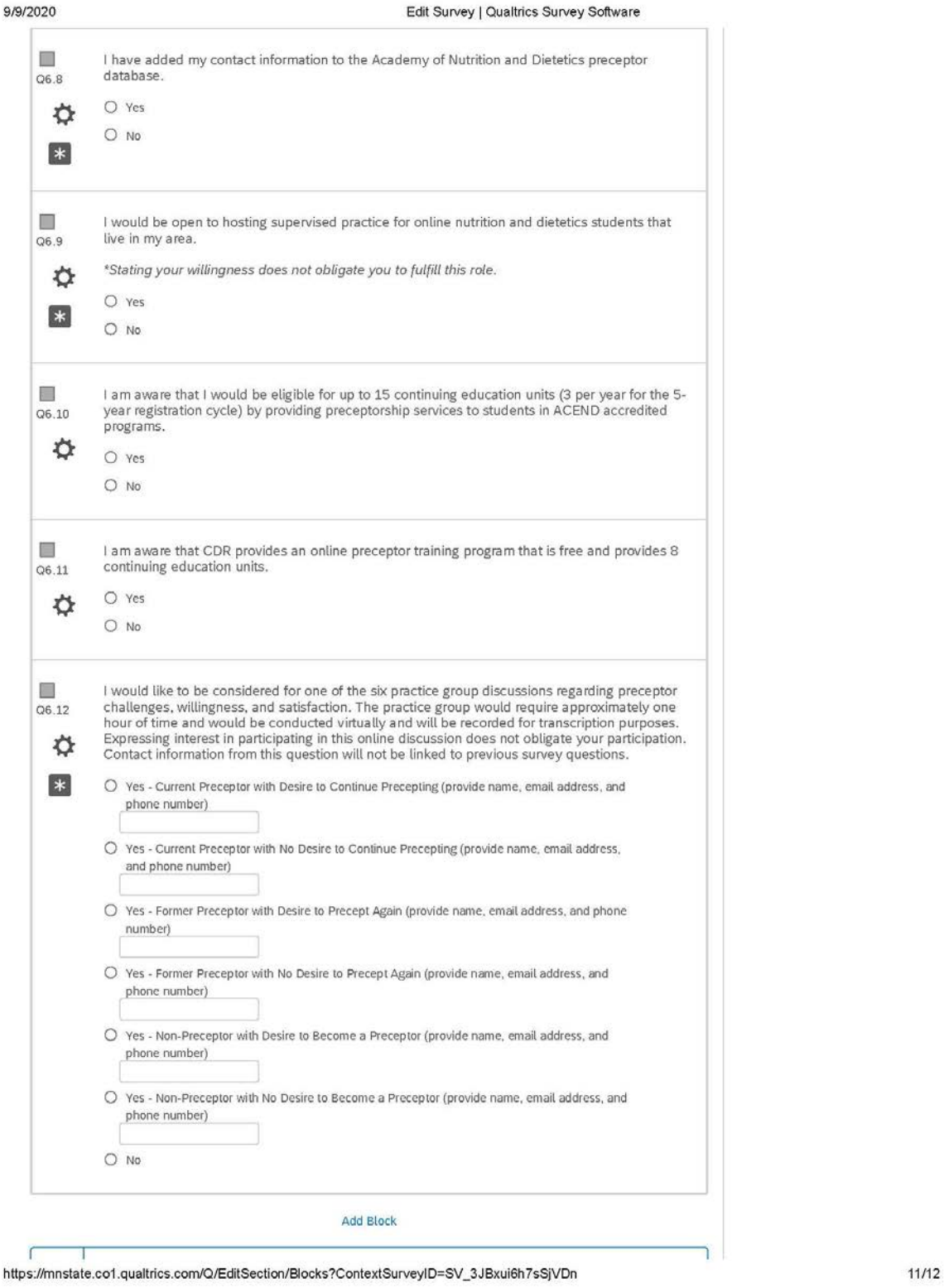
Q6.4 What can a program director/course instructor do to make the role of the preceptor easier?

Q6.5 What solutions do you identify to combat preceptor shortages within ACEND-accredited programs?

Q6.6 There currently isn't an industry standard regarding preceptor to student ratio within ACEND-accredited programs. Explain the ratio you think would promote an optimal preceptor-student experience.

Q6.7 I am aware of the Academy of Nutrition and Dietetics preceptor database.

- Yes
- No


9/9/2020
Edit Survey | Qualtrics Survey Software
Q6.8
I have added my contact information to the Academy of Nutrition and Dietetics preceptor database.
Yes
No
Q6.9
I would be open to hosting supervised practice for online nutrition and dietetics students that live in my area.
*Stating your willingness does not obligate you to fulfill this role.
Yes
No
Q6.10
I am aware that I would be eligible for up to 15 continuing education units (3 per year for the 5-year registration cycle) by providing preceptorship services to students in ACEND accredited programs.
Yes
No
Q6.11
I am aware that CDR provides an online preceptor training program that is free and provides 8 continuing education units.
Yes
No
Q6.12
I would like to be considered for one of the six practice group discussions regarding preceptor challenges, willingness, and satisfaction. The practice group would require approximately one hour of time and would be conducted virtually and will be recorded for transcription purposes. Expressing interest in participating in this online discussion does not obligate your participation. Contact information from this question will not be linked to previous survey questions.
Yes - Current Preceptor with Desire to Continue Precepting (provide name, email address, and phone number)
Yes - Current Preceptor with No Desire to Continue Precepting (provide name, email address, and phone number)
Yes - Former Preceptor with Desire to Precept Again (provide name, email address, and phone number)
Yes - Former Preceptor with No Desire to Precept Again (provide name, email address, and phone number)
Yes - Non-Preceptor with Desire to Become a Preceptor (provide name, email address, and phone number)
Yes - Non-Preceptor with No Desire to Become a Preceptor (provide name, email address, and phone number)
No
Add Block
https://mnstate.co1.qualtrics.com/Q/EditSection/Blocks?ContextSurveyID=SV_3JBxui6h7sSjVDn
11/12

Appendix I

Focus Group Questions

1. Please share your thoughts regarding factors that impact your willingness to fulfill the preceptor role for students enrolled in ACEND-accredited programs.

2. What factors impact your satisfaction to fulfill the preceptor role?

3. What are the main challenges that you associate with fulfilling the preceptor role?

4. What solutions do you identify to combat preceptor shortages within ACEND-accredited programs?

5. What suggestions do you have for alternate experiences, or alternate activities, to meet the supervised practice hours required of ACEND-accredited programs?

Appendix J

Pilot Email Script

Hello. I am working on my dissertation for a doctoral degree in educational leadership through Minnesota State University, Moorhead. As part of my dissertation, I will be conducting a study to learn more about nutrition and dietetics professionals and their willingness, satisfaction, and perceived challenges and solutions towards fulfilling a preceptor role for the supervised practice component of ACEND accredited programs.

You have previously mentioned your willingness to help with the pilot process for this study. I am piloting the online questionnaire for readability, navigability, and flow purposes. The questionnaire is expected to take about 25 minutes to complete. There are 13 demographic questions; one 14-part question regarding willingness; one 9-part question regarding satisfaction; one 16-part question regarding tools; one 9-part question regarding support; five open-ended and qualitative/narrative questions; and 4 miscellaneous questions. Along with the survey link, you will receive an evaluation form to guide you through the process of reviewing each item.

The pilot survey link is as follows: INSERT LINK HERE

Additionally, you will find the five-question qualitative/narrative focus group interview questions attached. Please provide your feedback on the understandability and flow of the interview questions.

If possible, please provide your commentary for both the online survey questionnaire and the 5-question focus group questionnaire by Friday, February 28th.

Thank you for your willingness to help me conduct the pilot stage of my doctoral dissertation.

Appendix K

Pilot Questionnaire Feedback

The Recruitment of Preceptors in Accredited Nutrition and Dietetics Programs: A Survey on Challenges, Willingness, and Satisfaction

Instructions: Please utilize the link that was provided in the email.
You do not have to complete the survey with factual answers, but I ask that you provide your feedback on the readability, navigability, and flow of the questionnaire. Please pay attention to spelling and formatting. Feel free to leave feedback boxes empty if you do not have comments on that specific item. If possible, return this form to me by Friday, February 28th.

Informed Consent	**Feedback**
Q0: Informed Consent Letter	#2: It might be helpful to add headings or bolding to make it easier to read through all of the text on the page. I had to read the consent part twice to figure out that it was a text box on the bottom of the screen and that the expectation was that I should add my signature. It might be helpful to add clarifying language to that section. #4: Very professionally outlined! Might you need to include NDTR or RDN as descriptors in addition to DTR and RD? (aside- thanks Academy, for the confusing options- not only to profession but to public) ;) #5: Is it right to assume you will give check-box options here, such as age ranges to check from, etc.?
Demographics	**Feedback**
Q1: Age	#4: Love your sliding age range scale ☺
Q2: Gender	
Q3: Ethnicity	
Q4: State	
Q5: Marital Status	#4: Should 'prefer not to answer' be an option here as well to be consistent?
Q6: Education Pathway	#2: Showing my ignorance here, but is it possible there is another pathway? Would "other" be warranted here?
Q7: Credentials	
Q8: Employment Status	
Q9: Years in Practice	
Q10: Years in Current Position	
Q11: Area of Practice	
Q12: Preceptor Category	
Q13: Weeks Served	

Section Comments	
#2: Section Comments –With all of the sections, it looks like it's possible to skip questions without answering them. Was that your intent? Would it make sense to force answers?	
Willingness	
Q14.01: Being a preceptor is mandatory in my current position	#4: Might you wish to offer a statement to highlight service (altruism in precepting)? Something like 'being a preceptor brings me joy in giving back through service to the future of our profession.' #5: It seems with this section, there would be a yes/no choice for Q14.01, where, with a yes response, participants continue with this line of questioning and a "no" should send them on a different path.
Q14.02: If I had a choice I would always choose to be a preceptor	#5: For Q14.02 and 14.03, does the word "always" have a significance? Do you think some participants will think there should be a "sometimes" option?
Q14.03: If I had a choice I would always choose not to be a preceptor	#4: Maybe capitalize "NOT"- it appeared at first to be repeat question from previous until I read again.
Q14.04: My current duties allow sufficient time to interact with students	#1: I was a little confused by the term student here. Are you talking about student interns? I probably am just confused as I am in education and interact with "students" every day. However, I am most likely not allowed to be a preceptor (although I am unsure of this – it seems unethical for me to be a preceptor).
Q14.05: Being a preceptor contributes to my profession	
Q14.06: Being a preceptor allows me to keep my knowledge of nutrition and dietetics current	
Q14.07: More preceptors are needed to meet nutrition and dietetics student demand	
Q14.08: I am confident in my ability to provide supervised practice for entry-level nutrition and dietetics skills	#4: I would follow up with a question that says "I am NOT confident in my ability…." (similar to the 2 part question for 14.02 and 14.03)
Q14.09: I have no desire to be a preceptor	#5: Up until now, it seems the participant definitely is a preceptor because they let you know in Q14.01 that it is part of their job. Starting here with 14.09, it reads to me that the participant currently does not precept but has the choice to become one.

Q14.10: I would like to be a preceptor	#2: It's not clear to me how Q14.10 and Q14.11 are different. I might say I would like to because it really is my intent to do so…
Q14.11: I intend to be a preceptor	
Q14.12: I would be comfortable assuming a preceptor role.	

Section Comments

#4: I do think there is a certain personality in precepting that is valid to assess. Some preceptors love inspiring and seeing students transform, whereas others may be in a position that sees precepting as 'more work' to their already loaded duties.

May wish to ask a few personality descriptors using five traits (openness, conscientiousness, agreeableness, etc) Acronym OCEAN describes them. If we can understand who thrives in precepting, it may help understand who makes for agreeableness in taking on students, even without adequate supports from an environment.

Satisfaction

Q15.01: I believe I am a competent preceptor	#2: How is this item different than Q14.08. #3: Or, what if they haven't been one before? I believe I am or would be a competent preceptor? Just a thought?
Q15.02: When I work with students I get a sense of achievement	
Q15.03: Interns bring new ideas to my department	#3: Interns bring new ideas to my department (or current position)? Only because I don't have a department😊. I assume I am the minority here!
Q15.04: Projects completed by interns are useful in my department	
Q15.05: Being a preceptor provides an opportunity to screen potential employees and job recruits	
Q15.06: Nutrition and dietetics preceptors can experience burnout	#5: The way this question reads, it seems the answer is an automatic "yes"
Q15.07: Being a preceptor is stressful	
Q15.08: All things considered, I am satisfied in my role as a preceptor	
Q15.09: I often leave work with a "bad" feeling that I am	#1: This seemed out of place – or not pertaining to being a preceptor.

doing something I don't enjoy

Section Comments

#4: Would you wish to assess if the survey recipient was taught self-care in their professional training? Or if they practice regular self-care now? Or maybe a question that assesses their importance of modeling this for students?

Tools

Q16.01: Adequate staff is available to assist in supervised practice of students	#3: Clarification: Do you mean from the University or at one's current employment? #5: Initial thought that comes to my mind is: do you mean program staff (i.e. faculty) or facility staff.
Q16.02: Adequate time is available to assist in supervised practice of students	#3: Again, do you mean by the/your employer?
Q16.03: Adequate space is available to assist in supervised practice of students	
Q16.04: Adequate technology is available to assist in supervised practice of students	
Q16.05: The program director/course instructor provides sufficient assignment detail within the syllabus to adequately provide supervised practice to students	
Q16.06: The program director/course instructor provides sufficient written guidelines (rubrics) to evaluate students	
Q16.07: The program director/course instructor provides sufficient orientation/expectations to adequately provide supervised practice to students	

Section Comments

#4: What if you added a final question about the program director/course instructor is readily checking in to assure student is matching expectations?

Support

Q17.01: My employer values the role of the preceptor	
Q17.02: My employer values my feedback regarding the role of the preceptor	
Q17.03: My peers value the role of the preceptor	
Q17.04: My peers value my feedback regard the role of the preceptor	#4: Add 'ing' to regard.
Q17.05: The program director/course instructor values my role as a preceptor	
Q17.06: The program director/course instructor values my feedback regarding my role as a preceptor	
Q17.07: I can contact the program director/course instructor for answers to questions regarding any aspect of the supervised practice I am providing	
Q17.08: The program director/course instructor returns my calls or emails in a timely fashion	

Section Comments

#4: May wish to offer something like my employer honors my role of preceptor in my annual performance review (or additional compensation measures are offered for precepting…i.e. financial gain)

(Qualitative)

Q18: Describe the top three reasons that impact your choice on whether or not to be a preceptor.	#2: I didn't see a text box in which to enter answers for this item. #5: Is there a difference between the words "choice" and "decision"? Contrast the question as written to this: "Describe the top three reasons that influence your decision whether or not to become a preceptor".
Q19: Describe the most important resources a preceptor would need to	#2: I didn't see a text box in which to enter answers for this item.

successfully provide supervised practice to a nutrition and dietetics student.	#5: Might you want to add a number to this one too, i.e. "Describe the three most important resources…"
Q20: What can a program director/course instructor do to make the role of the preceptor easier?	#2: I didn't see a text box in which to enter answers for this item.
Q21: What do you identify as primary challenges impacting preceptorship within the nutrition and dietetics field?	#1: Perhaps you also want to ask a question about what barriers exist to personally being a preceptor. This is different that the profession. #2: I didn't see a text box in which to enter answers for this item.
Q22: What solutions or interventions do you feel could be implemented to meet the supervised practice requirement of ACEND accredited programs?	#2: I didn't see a text box in which to enter answers for this item. #5: Not sure why I don't like the phrase "do you feel", and I am confused here with the words "solutions" and "interventions" Consider this: What suggestions do you have for alternate experiences (or could say alternate activities) to meet the supervised practice hours required of ACEND-accredited programs?
Section Comments	
Misc.	
Q23: I am aware of the Academy of Nutrition and Dietetics preceptor database.	
Q24: I have added my contact information to the Academy of Nutrition and Dietetics preceptor database.	#2: If they haven't done so but want to, this doesn't tell them where or how to do so.
Q25: I would be open to hosting supervised practice for online nutrition and dietetics students who live in my area.	#2: Are they committing to something here? If they say yes, what does that indicate? Are they signing up for something?
Q26: I would like to be considered for one of the two practice group discussions regarding preceptor	#1: This question was numbered as #24 instead of #26. #2: I was a little thrown by the term "practice" in this question. Is there a way to provide more information about

challenges, willingness, and satisfaction. This practice group would require approximately on hour of time and would be conducted virtually. Contact information from this question will not be linked to previous survey questions.	what is intended here. I understand that you are talking about clinical practice – perhaps use that terminology to be clear. Also, instructions regarding what you want them to do if they say yes should be added to the question itself and be included in the answer choices just so it's not missed. The box provided is small and will make it difficult to add all of the information you've requested. Perhaps add a branched question. If they choose any of the "yes" answers, then a new question appears for name, email, etc. #4: Typo- 'one' hour of time ☺
Section Comments	

Feedback Key and Credentials

#1	Ph.D. level RD in education
#2	M.S. level allied health professional in education
#3	M.S level RD in private practice
#4	M.S. level RD in clinical setting
#5	M.S. level RD in education

Appendix L

Pilot Focus Group Questions Feedback

The Recruitment of Preceptors in Accredited Nutrition and Dietetics Programs: A Survey on Challenges, Willingness, and Satisfaction

Instructions: Please review the following focus group questions. There will be two one-hour long focus groups that consist of 4-6 participants who self-identified within the following categories:

- Nutrition professional with a desire to be a preceptor.
- Nutrition professional with no desire to be a preceptor.

The focus groups will be asked the same questions.
You do not have to provide narrative for the questions, but I ask that you provide your feedback on the understandability and flow of the interview questions. Feel free to leave feedback boxes empty if you do not have comments on that specific item. If possible, return this form to me by Friday, February 28th.

Question	**Feedback**
Q01: Explain your feelings on being a preceptor for a nutrition and dietetics student's supervised practice experience.	#1: This question is a bit vague – Feelings regarding what about precepting? Just anything? You might want to ask a different opening question – Can you explain why you identified (with the categories above the selected them into the focus group). I don't see anything on barriers either even though the next questions ask about support/tools/solutions etc. I would ask a question about barriers to the profession and personally being a preceptor. I would also read through the quantitative survey and see if there is a variable you would want to be explained more – you can always add this to the focus group as you would have some preliminary quantitative results. #2: For some reason, the phrase "explain your feelings" struck me as negative and made me feel defensive as if I had to defend my feelings. It might be just me, but as an opening question, it seemed to dig too deep too fast. If someone has strong negative feelings due to a bad experience, they could derail or dominate your whole conversation and turn off those who have a desire to get involved.

	Are you looking for what are the positives and negatives of precepting in terms of satisfaction or willingness? I'm not sure what the question is looking for and can imagine it might confuse some in your group. #3: Clear and concise. #4: May need feeling prompter sheet (in my experience, people often share 'thoughts' and do not have words to describe feelings) or another option is continuum scale varying the ranges of emotions (content 1; overjoyed 5); perhaps qualitative doesn't anchor scales however. I am learning from you Angie! #5: Is there a reason why all of the questions ask for "feelings"? I wonder if there is a better way to word each of these questions (without feelings). For example, could Q01 be phrased something like: Explain your reason(s) for self-identifying into the category you indicated on being a preceptor for a nutrition and dietetics student's supervised practice experience.
Q02: What support do you feel the nutrition and dietetics preceptor would require in order to effectively provide supervised practice?	#3: Good. #4: May wish to add the word kind (i.e. what **KIND** of support…) May wish to replace feel with '**believe'** May also consider what their supportive experiences included while being precepted (to highlight successes) #5: For example: What support does the nutrition and dietetics preceptor require in order to provide an effective supervised practice experience?
Q03: What tools do you feel the nutrition and dietetics preceptor would require in order to effectively provide supervised practice?	#4: Replace 'feel' with **advocate** I am unsure if qualitative need to use the word 'feel'- I just know many report thoughts or beliefs vs. actual feelings when asked. #5: For example: What tools are required for the nutrition and dietetics preceptor to provide an effective supervised practice experience?
Q04: What solutions or interventions do you feel could be implemented to	#4: Some preceptors may not even know what these requirements are, therefore be unable to answer fully.

meet the supervised practice requirement of ACEND accredited programs?	#5: Reference to solutions or interventions has me stumped. If I were part of a focus group, I would not know where you are going with this question.
Q05: Is there anything else you feel is important to discuss regarding nutrition and dietetics preceptor challenges, willingness, and satisfaction?	#4: Not sure if I would include challenges here as the survey intent was to focus on willingness and satisfaction primarily. ☺ #5: For example: Is there anything else you would like to add pertaining to nutrition and dietetics preceptor challenges, willingness and satisfaction?

Feedback Key and Credentials

#1	Ph.D. level RD in education
#2	M.S. level allied health professional in education
#3	M.S level RD in private practice
#4	M.S. level RD in clinical setting
#5	M.S. level RD in education

Appendix M

ACEND Database Request

Request for Use of CDR Database

Angela Brekken, MS, RD, LD, FAND

Minnesota State University Moorhead

Dissertation Proposal for Partial Completion of the Requirements for the EdD Degree

April 24, 2020

Table of Contents

Request for Use of CDR Database

I am a doctoral student within Minnesota State University's Educational Leadership program. My proposed dissertation title is *The recruitment of preceptors in accredited nutrition and dietetics programs: A survey on challenges, willingness, and satisfaction*. I intend to utilize the randomly selected 5,000 Registered Dietitian (RD) and Dietetic Technician, Registered (DTR) distribution list provided by the Academy of Nutrition and Dietetics and the Commission on Dietetic Registration to distribute my online questionnaire tool. The following document will provide this study's proof of compliance towards the requirements for use of CDR database information.

Alignment with Academy & CDR Mission and Vision Statements

This research aligns with the Academy's mission and vision because preceptors are a critical and required component in the educational process that is required to prepare the new nutrition and dietetics professionals. These new professionals are needed to accelerate global health and well-being through the transformative power of food in nutrition.

The CDR mission and vision are also reflected in this research. Preceptors are a required component for the majority of ACEND accredited nutrition and dietetics programs and their resulting CDR credentialing exams. Preceptors help students apply their didactic coursework within a safe and supportive setting. Students, in turn, become competent entry-level nutrition professionals who are ready to meet the needs of the public they serve. The examination of preceptor challenges, satisfaction, and willingness are vital components in the development and maintenance of a pool of nutrition and dietetics professionals who are available to perform this mentorship role for students.

Alignment with the Academy's Strategic Plan

The Academy strategic plan focuses on three areas: prevention and well-being, health care and health systems, and food and nutrition safety and security. Some listed strategies associated with these focus areas include expanding food and nutrition research, serving as a primary resource for experiential training, and increasing the pool of educators who are doctorate prepared. This research supports the Academy's strategic plan because preceptors provide nutrition and dietetics students with experiential learning. They essentially volunteer their time towards to the advancement of the nutrition profession. It is critical that the factors which impact their willingness and satisfaction to fill the preceptor role are examined. This research is also adding to the available body of literature regarding nutrition and dietetics and preceptorship. Ultimately, the research will also result in a registered dietitian educator with a terminal leadership degree.

Compliance with Generally Accepted Research Standards

This study will utilize an online questionnaire followed by a series of online synchronous focus groups. Research questions will explore the factors that impact the nutrition and dietetics professional in providing supervised practice experience as preceptors in ACEND accredited programs, and what solutions nutrition and dietetics professionals identify to combat preceptor shortages within ACEND accredited programs. Through the utilization of this mixed methods concurrent triangulation design, there is an opportunity to benefit from focus group clarification of the online questionnaire findings. This will provide well-rounded results that reflect the perceptions of each preceptor status subgroup of the nutrition and dietetics professional participants. Online synchronous focus groups (OSFG) occur much like in-person focus group. OSFG are real-time and participants join via an electronic platform. For this study, Zoom

software will be utilized. Benefits to OSFG include the elimination of the need to travel, participants can join from the comfort of their office or home, increased diversity of focus group participants, and the software will record the session.

Minnesota State University Moorhead's Accreditation Status

Minnesota State University Moorhead (2020) is accredited by the Higher Learning Commission and is a member of the North Central Association of Colleges and Schools. The EdD in Educational Leadership program is not accredited with the ACEND. However, the researcher is an RD and is the program director for an ACEND accredited dietetic technician program. This research will directly help ACEND accredited program directors understand the needs of preceptors which can potentially increase the pool of available preceptors for nutrition and dietetics programs.

Proposed Research Conforms with Research Design Standards

Under the paradigm of pragmatism, a mixed methods concurrent triangulation approach will be utilized for this study. First, an electronic questionnaire was developed and will be distributed to 5,000 randomly selected credentialed RDs and DTRs via a distribution list that is available free of charge for graduate-level research students.

Examples of quantitative questions as led by the literature could be: (a) age; (b) gender; (c) ethnicity; (d) years of experience; (e) full time or part time employment; (f) practice setting; (g) history as a preceptor; (h) education pathway; (i) credentials; (j) Likert scale that rates the willingness or intent to be a preceptor; (k) Likert scale that rates the importance of available support and resources within the workplace regarding students; (l) Likert scale that rates the stress and career satisfaction levels of the nutrition and dietetics professional; (m) Likert scale that rates the importance of program director support; etc.

Examples of qualitative survey questions include: (a) open-ended questions regarding the reasons that impact their decision to be a preceptor; (b) open-ended questions regarding the resources they feel are needed to successfully fill the role; (c) open-ended questions regarding what they feel program directors and employers could do to increase their willingness to be preceptors; (d) what they perceive an appropriate preceptor to student ratio would be, etc.

The research tool was developed based on the current literature and piloted for readability and navigability by four registered dietitians and one allied health professional. Based off the feedback, a progress bar was added to the Qualtrics survey tool to allow the participant to gauge where they are in the process of completion and to aid in minimizing survey fatigue. Section headings were added along with definitions of each constitutional variable being measured. Larger text-based answer boxes were added for the qualitative questions within the survey to allow the participant greater flexibility with answering and editing. Question wording was adjusted per pilot participant feedback.

The survey design was chosen due to the ability to reach a large amount of people across the United States in order to maximize the diversity and generalizability within the study's sample. The email distribution list available through the Commission on Dietetic Registration will result in a simple random sample. The nutrition and dietetics professionals will be voluntary participants and there will be no requirement or expectation for them to complete the online questionnaire. They may stop participating in the questionnaire at any time without consequence. There is no perceived risk associated with participating in the online questionnaire.

Then, a series of six online synchronous focus groups (OSFG) will be conducted. The OSFG will each take one hour and consist of 4-6 nutrition professionals per Lobe's (2017) best practice recommendations. This will provide opportunity to gain further qualitative data

regarding their experiences and attitudes with preceptorship. The design of the six focus groups was selected because it will allow for an opportunity to establish deeper insight into the different groups of nutrition professionals: current preceptor with desire to continue precepting; current preceptor with no desire to continue precepting; former preceptor with desire to precept again; former preceptor with no desire to precept again; non-preceptor with desire to become a preceptor; and non-preceptor with no desire to become a preceptor. Participants will be grouped into these six categories within the online questionnaire tool from Phase 1, which is also linked with the final survey question that asks if they would be interested in participating with the online synchronous focus group in Phase 2.

These qualitative OSFG sessions will be utilized to complement and triangulate the data found within the online survey process. This will allow for a more in-depth exploration of the research questions from different angles and allow for greater diversity since participants can join from their geographic location. The focus group will employ no more than 6 core questions per Fraenkel, Wallen, and Hyun's (2015) best practice recommendations.

The same five individuals who piloted the online questionnaire provided feedback regarding the question order and progression for the online synchronous focus group script. Question wording and the order of questions was edited to allow for smoother progression regarding question topics.

Letter of Dissertation Chair Support

MINNESOTA STATE UNIVERSITY MOORHEAD

College of Education and Human Development
Department of Leadership and Learning
218.477.2007
suarez@mnstate.edu

June 3, 2020

Dear Council on Research Survey Review Subcommittee Members,

My name is Ximena Suarez-Sousa, and I am Angela Brekken's dissertation chair at Minnesota State University Moorhead's Doctoral and Educational Leadership program. Angela intends to utilize a distribution list provided by you to perform an online questionnaire which will be followed by a series of online synchronous focus groups. Utilization of your distribution list is a vital component for her research. Please accept this letter of support for Angela's use of your distribution list for her proposed dissertation entitled: The recruitment of preceptors in accredited nutrition and dietetics programs: A survey on challenges, willingness, and satisfaction.

Please contact me with questions or concerns regarding Angela's research.

Respectfully Submitted,

Ximena Suarez-Sousa, PhD
Lommen Hall 211C
1104 7th Avenue South
Moorhead, MN 56563
Ph: 218-477-2007 Email: suarez@mnstate.edu

Sample of Electronic Survey Questions

Informed Consent

Q1.1.
Informed Consent Letter
Participation in Research

Title: The Recruitment of Preceptors in Accredited Nutrition and Dietetics Programs: A Survey on Challenges, Willingness, and Satisfaction

Purpose: The purpose of this research is to explore how available tools and resources impact a preceptor's, or potential preceptor's, willingness and satisfaction to provide supervised practice for nutrition and dietetics students in Accreditation Council for Education in Nutrition and Dietetics (ACEND) accredited programs.

Study Information: This study will explore what tools and support preceptors, or potential-preceptors, feel they require in order to be successful in their supervised practice experiences. Data will be collected via an online survey tool that will be distributed electronically to all Registered Dietitians (RDs) and Dietetic Technicians, Registered (DTRs). Participants will have a choice to submit their contact information to be considered for further focus group activity. If participants choose to provide their contact information for the focus group, their identifying information will not be tied to the survey results. The investigator will be looking for trends in the data which can potentially help program directors recruit and retain preceptors to meet nutrition and dietetics student's supervised practice needs.

Time: Participants will commit to complete the electronic survey in this study of their own will via electronic survey link distributed via email. This study will take place between August 2019 and May 2021. It will take about 15-25 minutes to complete the online survey. The total estimated time commitment for a participant who provides contact information, and is selected, for focus group activities is two hours.

Risks: Participation in the study will require RDs and DTRs to answer anonymous online survey questions. Participants can choose to provide contact information to be eligible for focus group activities that will protect the anonymity of the participants through the utilization of pseudonyms. The outcome of the study is unknown. There is no cost to participate in the survey or focus group, and there are no foreseeable risks to participate in the study.

Benefits: This study will support the improvement of supervised practice experiences for ACEND accredited nutrition and dietetics programs.

Confidentiality: All gathered information will be kept confidential and all responses will be anonymous, meaning that no one, not even the research team, will know how participants answered the survey questions. If a participant chooses to provide contact information to be eligible for focus group activity, this information will not be tied to their survey answers. Focus group participants will only be identified utilizing pseudonyms. Any future presentation of survey data will be as group means and other descriptive and inferential statistics, with no identifiers included.

Participation or Withdrawal: Participation in this study will be voluntary. Participants may choose not to participate and may stop at any time.

Contact: If you have any questions about the study, you may contact any member listed below:

Angela Brekken, MS, RD, LD, FAND
Co-Investigator
Ph. 218-793-2484
Email: brekkenan@mnstate.edu

and/or

Ximena P. Suarez-Sousa, Ph.D.
Principal Investigator
Assistant Professor, School of Teaching and Learning, Lommen 211C
College of Education and Human Services
Minnesota State University Moorhead
Ph. 218-477-2007
Email: suarez@mnstate.edu

Any questions about your rights may be directed to Lisa Karch, Ph.D. Chair of the MSUM Institutional Review Board, at 218-477-2699 or by lisa.karch@mnstate.edu.

"I have been informed of the study details and understand what participating in the study means. I understand that my identity will be protected and that I can choose

to stop participating in the study at any time. By providing my electronic signature and clicking into the survey, I am providing my informed consent to be a participant in this study. I am at least 18 years of age or older."

Please provide your electronic signature below.

Demographics

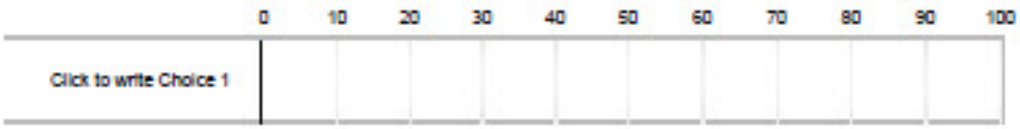
Q2.1. Section 1: Demographics

Directions: This section of the survey will gather information about your personal and educational background. Please answer the questions with the prompts provided to the best of your ability.

Definitions: Use the following definitions as you answer questions in section 1.

- **DTR/NDTR:** Dietetic Technician, Registered and Nutrition and Dietetics Technician, Registered (used interchangeably).
- **RD/RDN:** Registered Dietitian and Registered Dietitian Nutritionist (used interchangeably).
- **Preceptor:** An individual teaching-learning method in which an inexperienced person (student) is assigned to a competent and experienced person (preceptor) in a one-on-one teaching and learning relationship so that the inexperienced person can participate in day-to-day practice with a teacher, resource person, and role model immediately available within the practice setting.
- **Current Preceptor:** Currently providing preceptorship to a nutrition and dietetics student within a supervised practice setting.
- **Former Preceptor:** Previously provided preceptorship to a nutrition and dietetics student within a supervised practice setting.
- **Non-Preceptor:** Have not provided preceptorship to a nutrition and dietetics student.

Q2.2. Age



Q2.3. Gender

- Female
- Male
- Nonbinary
- Prefer not to answer

Q2.4. Ethnicity

- White
- Hispanic or Latino
- Black or African American
- Native American or American Indian
- Asian or Pacific Islander
- Other
- Prefer not to answer

Q2.5. State of residence

Q2.6. Marital Status

- Single (never married)
- Married
- In a domestic partnership
- Divorced
- Widowed
- Prefer not to answer

Q2.7. Education Pathway

- Dietetic Technician Program
- Coordinated Baccalaureate Undergraduate Program
- Didactic Baccalaureate Undergraduate Program with Post-Graduate External Supervised Practice
- Didactic Baccalaureate Program with Post-Graduate External Combined Master's and Supervised Practice
- Didactic Baccalaureate Program without Supervised Practice

Q2.8. Credentials (select all that apply)

- DTR or NDTR

- [ ] RD or RDN
- [ ] Graduate (MS, MBA, etc.)
- [ ] Doctorate (PhD, EdD, etc.)
- [ ] Other

Q2.9. Employment status

- ( ) Employed full-time (40 hours or more per week)
- ( ) Employed part-time (less than 40 hours per week)
- ( ) Unemployed (currently looking for work)
- ( ) Unemployed (currently not looking for work)
- ( ) Retired
- ( ) Self-Employed
- ( ) Unable to work

Q2.10. Years in practice

	0	5	10	15	20	25	30	35	40	45	50
Click to write Choice 1											

Q2.11. Years in current position

	0	5	10	15	20	25	30	35	40	45	50
Click to write Choice 1											

Q2.12. Area of practice (select all that apply)

- [ ] Clinical (non-administration)
- [ ] Clinical Administration
- [ ] Foodservice (non-administration)
- [ ] Foodservice Administration
- [ ] Combined Clinical and Foodservice (non-administration)
- [ ] Combined Clinical and Foodservice Administration
- [ ] Community/Public Health

- [ ] Education
- [ ] Private Practice
- [ ] Business and Industry
- [ ] Research
- [ ] Other

Q2.13. Select the category that best fits your current situation

- ○ Current Preceptor - desire to continue precepting
- ○ Current Preceptor - no desire to continue precepting
- ○ Former Preceptor - desire to precept again
- ○ Former Preceptor - no desire to precept again
- ○ Non-Preceptor - desire to become a preceptor
- ○ Non-Preceptor - no desire to become a preceptor

Q2.14. Weeks served as a preceptor in the preceding year

	0	5	10	16	21	26	31	36	42	47	52
Click to write Choice 1											

Willingness

Q3.1. **Section 2: Willingness**

Directions: This section of the survey will gather information about your perceptions regarding willingness to fulfill the preceptor role. Please answer the questions with the prompts provided to the best of your ability.

Definitions: Use the following definitions as you answer questions in section 2.

- **Willingness:** The intention to provide mentorship services.

Q3.2. Score the following statements according to your level of agreement

	Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Being a preceptor is mandatory in my current position. (1)	○	○	○	○	○	○	○

	Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
If I had a choice I would choose to be a preceptor. (2)							
If I had a choice I would choose NOT to be a preceptor. (3)							
My current duties allow sufficient time as a preceptor to interact with students placed at my facility.(4)							
Being a preceptor contributes to my profession. (5)							
Being a preceptor allows me to keep my knowledge of nutrition and dietetics current.(6)							
More preceptors are needed to meet nutrition and dietetic student demand.(7)							
I have no desire to be a preceptor. (8)							
I would like to be a preceptor. (9)							
I intend to be a preceptor. (10)							
I would be comfortable assuming a preceptor role. (11)							

Satisfaction

Q4.1. Section 3: Satisfaction

Directions: This section of the survey will gather information about your perceptions regarding your perceived level of satisfaction regarding your current roles at work and as a preceptor. Please answer the questions with the prompts provided to the best of your ability.

Definitions: Use the following definitions as you answer questions in section 3.

- **Satisfaction:** Happiness with one's work life.

Q4.2. Score the following statements according to your level of agreement

	Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am confident in my ability to provide supervised practice for entry-level nutrition and dietetics skills. (1)							

	Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Working with students can provide a sense of achievement. (2)							
Interns can bring new ideas to my department. (3)							
Projects completed by interns can be useful in my department. (4)							
Being a preceptor provides an opportunity to screen potential employees and job recruits.. (5)							
Working with students is an act of altruism that allows me to give back to my profession. (6)							
I am fairly compensated by my employer to perform preceptor duties. (7)							
Nutrition and dietetics preceptors can experience burnout. (8)							
Being a preceptor is stressful.(9)							
All things considered, I am satisfied in my role as a preceptor. (10)							
I often leave work with a "bad" feeling that I am doing something I don't enjoy. (11)							

Resources

Q5.1. Section 4: Resources

Directions: This section of the survey will gather information about your perceptions regarding the resources (tools and support) required to fulfill the preceptor role. Please answer the questions with the prompts provided to the best of your ability.

Definitions: Use the following definitions as you answer questions in section 4.

- **Factors:** The items that impact decisions regarding preceptorship.

Q5.2. Factors/Tools

Score the following statements according to your level of agreement.

	Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

	Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Adequate staff is available within my facility to assist in supervised practice of students. (1)							
Adequate time is available within my facility to assist in supervised practice of students. (2)							
Adequate space is available within my facility to assist in supervised practice of students. (3)							
Adequate technology is available within my facility to assist in supervised practice of students. (4)							
The program director/course instructor provides sufficient assignment detail within the syllabus to adequately provide supervised practice to students. (5)							
The program director/course instructor provides sufficient written guidelines (rubrics) to evaluate students. (6)							
The program director/course instructor provides sufficient orientation/expectations to adequately provide supervised practice to students. (7)							

Q5.3. **Factors/Support**

Score the following statements according to your level of agreement.

	Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
My employer values the role of the preceptor. (1)							
My employer values my feedback regarding the role of the preceptor. (2)							
My peers value the role of the preceptor. (3)							
My peers value my feedback regarding the role of the preceptor. (4)							
The program director/course instructor values my role as a preceptor. (5)							
The program director/course instructor values my feedback regarding my role as a preceptor. (6)							
I can contact the program director/course instructor for answers to questions regarding any aspect of the supervised practice I am providing. (7)							
The program director/course instructor returns my calls or emails in a timely fashion. (8)							

Narrative

Q6.1. **Section 5: Narrative**

Directions: This section of the survey will gather qualitative information about your perceptions regarding the the preceptor role. Please answer the questions with the prompts provided to the best of your ability.

- **Challenges:** Obstacles that impair or prevent the completion of a task.
- **Solutions:** Potential answers to perceived drawbacks associated with the role of the preceptor.

Q6.2. Describe the top three reasons that impact your choice on whether or not to be a preceptor.

Q6.3. Describe the three most important resources a preceptor would need to successfully provide supervised practice to a nutrition and dietetics student.

Q6.4. What can a program director/course instructor do to make the role of the preceptor easier?

Q6.5. What solutions do you identify to combat preceptor shortages within ACEND-accredited programs?

Q6.6. There currently isn't an industry standard regarding preceptor to student ratio within ACEND-accredited programs. Explain the ratio you think would promote an optimal preceptor-student experience.

Q6.7. I am aware of the Academy of Nutrition and Dietetics preceptor database.

- Yes
- No

Q6.8. I have added my contact information to the Academy of Nutrition and Dietetics preceptor database.

- Yes
- No

Q6.9. I would be open to hosting supervised practice for online nutrition and dietetics students that live in my area.

**Stating your willingness does not obligate you to fulfill this role.*

- Yes
- No

Q6.10. I would like to be considered for one of the six practice group discussions regarding preceptor challenges, willingness, and satisfaction. The practice group would require approximately one hour of time and would be conducted virtually and will be recorded for transcription purposes. Expressing interest in participating in this online discussion does not obligate your participation. Contact information from this question will not be linked to previous survey questions.

- Yes - Current Preceptor with Desire to Continue Precepting (provide name, email address, and phone number)
- Yes - Current Preceptor with No Desire to Continue Precepting (provide name, email address, and phone number)

- Yes - Former Preceptor with Desire to Precept Again (provide name, email address, and phone number)
- Yes - Former Preceptor with No Desire to Precept Again (provide name, email address, and phone number)
- Yes - Non-Preceptor with Desire to Become a Preceptor (provide name, email address, and phone number)
- Yes - Non-Preceptor with No Desire to Become a Preceptor (provide name, email address, and phone number)
- No

Sample of Focus Group Questions

1. Please share your thoughts regarding factors that impact your willingness to fulfill the preceptor role for students enrolled in ACEND-accredited programs.

2. What factors impact your satisfaction to fulfill the preceptor role?

3. What are the main challenges that you associate with fulfilling the preceptor role?

4. What solutions do you identify to combat preceptor shortages within ACEND-accredited programs?

5. What suggestions do you have for alternate experiences, or alternate activities, to meet the supervised practice hours required of ACEND-accredited programs?

Copy of Cover Email/Letter

Hello. My name is Angela Brekken and I am a Registered Dietitian pursuing a doctorate in Educational Leadership through the University of Minnesota Moorhead. I am conducting my research on preceptor challenges, willingness, and satisfaction. You do not have to currently be a preceptor, or have history in this role, as my study is trying to gain information regarding the perceptions and experiences of non-, past-, and current-preceptors alike. You will find the Informed Consent information and a link to the online survey below. Thank you for your consideration.

Informed Consent

Participation in Research

Title: The Recruitment of Preceptors in Accredited Nutrition and Dietetics Programs: A Survey on Challenges, Willingness, and Satisfaction

Purpose: The purpose of this research is to explore how available tools and resources impact a preceptor's, or potential preceptor's, willingness and satisfaction to provide supervised practice for nutrition and dietetics students in Accreditation Council for Education in Nutrition and Dietetics (ACEND) accredited programs.

Study Information: This study will explore what tools and support preceptors, or potential-preceptors, feel they require in order to be successful in their supervised practice experiences. Data will be collected via an online survey tool that will be distributed electronically to randomly selected Registered Dietitians (RDs) and Dietetic Technicians, Registered (DTRs). Participants will have a choice to submit their contact information to be considered for further focus group activity. If participants choose to provide their contact information for the focus group, their identifying information will not be tied to the survey results. The investigator will be looking for trends in the data which can potentially help program directors recruit and retain preceptors to meet nutrition and dietetics student's supervised practice needs.

Time: Participants will commit to complete the electronic survey in this study of their own will via electronic survey link distributed via email. This study will take place between September 2020 and May 2021. It will take about 15-25 minutes to complete the online survey. The total estimated time commitment for a participant who provides contact information, and is selected, for focus group activities is one hour.

Risks: Participation in the study will require RDs and DTRs to answer anonymous online survey questions. Participants can choose to provide contact information to be eligible for focus group activities that will protect the anonymity of the participants through the utilization of pseudonyms. The outcome of the study is unknown. There is no cost to participate in the survey or focus group, and there are no foreseeable risks to participate in the study.

Benefits: This study will support the improvement of supervised practice experiences for ACEND accredited nutrition and dietetics programs.

Confidentiality: All gathered information will be kept confidential and all responses will be anonymous, meaning that no one, not even the research team, will know how participants answered the survey questions. If a participant chooses to provide contact information to be eligible for focus group activity, this information will not be tied to their survey answers. Focus group participants will only be identified utilizing pseudonyms. Any future presentation of survey data will be as group means and other descriptive and inferential statistics, with no identifiers included.

Participation or Withdrawal: Participation in this study will be voluntary. Participants may choose not to participate and may stop at any time.

Contact: If you have any questions about the study, you may contact any member listed below:

Angela Brekken, MS, RD, LD, FAND
Co-Investigator
Ph. 218-793-2484
Email: brekkenan@mnstate.edu

and/or

Ximena P. Suarez-Sousa, Ph.D.
Principal Investigator
Assistant Professor, School of Teaching and
Learning, Lommen 211C
College of Education and Human Services
Minnesota State University Moorhead
Ph. 218-477-2007
Email: suarez@mnstate.edu

Any questions about your rights may be directed to Lisa Karch, Ph.D. Chair of the MSUM Institutional Review Board, at 218-477-2699 or by lisa.karch@mnstate.edu.

“I have been informed of the study details and understand what participating in the study means. I understand that my identity will be protected and that I can choose to stop participating in the study at any time. By providing my electronic signature and clicking into the survey, I am providing my informed consent to be a participant in this study. I am at least 18 years of age or older.”

INSERT QUALTRICS SURVEY LINK HERE

IRB Approval

From: Wenger, Karla
To: Suarez-Sousa, Ximena P; Brekken, Angie K; Brekken, Angie K
Cc: Karch, Lisa I
Subject: IRB Exempt Approval
Date: Sunday, August 4, 2019 10:45:20 AM
Attachments: image007.png

Date:	8/4/19
Principal Investigator:	Ximena Suarez-Sousa
Co-Investigator(s):	Angela Brekken
Title of Study:	The recruitment of preceptors in Accreditation Council for Education in Nutrition and Dietetics (ACENS) Accredited Nutrition and Dietetics

Thank you for submitting your IRB Exempt Status Proposal. Your proposal has been reviewed and approved **Exempt research** under 45 CFR 46.104**.** You may proceed with your study after August 4, 2019.

The IRB will not conduct subsequent reviews of this protocol unless changes to the protocol occur. Any changes to the protocol will require a formal application to, and approval of, the IRB prior to implementation of the change. IRB applications are available on the Minnesota State University Moorhead IRB webpage: https://www.mnstate.edu/irb/

Best of Luck to you with your research!

Lisa Karch

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Appendix N

Online Questionnaire Qualitative Participants Quoted

Participant	Gender	Ethnicity	Marital Status	Age	Area of Practice	Years in Practice	Years Pos.	Weeks Prec.	Willingness Comp. Score	Satisfaction Comp. Score	Factors/Tools Comp. Score	Factors/Tools Support	Total Score	Preceptor Category
2	F	W	DP	57	Clinical/FS Admin	35	19	2	52	66	28	47	193	FPD
4	F	H/L	MD	59	Other – Operational Excellence	38	8	0	59	68	39	52	218	FPND
10	F	W	MD	65	Clinical Non-Admin	37	34	19	56	59	33	47	195	CPD
12	F	W	S	31	Clinical Non-Admin	2	2	1	65	55	38	34	192	FPD
13	F	W	MD	38	Clinical Non-Admin	13	5	8	52	51	42	48	193	CPD
16	F	W	MD	32	Clinical Non-Admin	8	2	3	42	59	18	32	151	FPD
17	M	H/L	MD	34	Clinical Non-Admin	5	1	8	51	54	42	48	195	CPD
19	F	W	MD	61	Clinical Non-Admin	38	38	3	60	67	40	51	218	CPD
21	F	W	S	29	Clinical/FS Non-Admin	2	1	0	63	64	36	32	195	NPD
22	F	W	WD	29	Community/PH/Ed	5	5	20	51	54	38	38	181	CPD
23	F	W	MD	64	FS Admin	42	18	14	60	61	48	49	218	CPD
28	F	W	MD	35	Clinical Non-Admin/Community/PH/Ed	12	2	0	44	50	23	31	148	FPND
32	F	W	MD	34	Community/PH/Ed/Research	10	2	0	42	59	28	27	156	NPND
33	F	W	S	25	Clinical Non-Admin	1	0	0	58	55	24	40	177	NPD
35	F	W	DV	57	Clinical Non-Admin /Community/PH/Ed/Research	33	19	20	50	62	22	48	182	CPD
38	F	W	MD	52	Clinical Admin/Ed	28	9	0	52	58	36	50	196	FPND
39	F	W	MD	35	Clinical Non-Admin/PP	11	4	0	44	58	27	32	161	NPD
41	F	W	MD	33	Clinical/FS Admin	5	2	2	49	51	25	38	163	FPD
43	F	W	MD	60	Clinical Non-Admin/Ed/BI/Research	31	3	10	64	67	29	55	215	CPD
46	F	O	MD	31	Clinical/FS Non-Admin/Community/PH	5	2	2	55	58	33	38	184	CPD

Participant	Gender	Ethnicity	Marital Status	Age	Area of Practice	Years in Practice	Years Pos.	Weeks Prec.	Willingness Comp. Score	Satisfaction Comp. Score	Factors/Tools Comp. Score	Factors/Tools Support	Total Score	Preceptor Category
47	F	W	MD	52	Community/PH	15	2	0	54	61	42	50	207	NPD
48	F	H/L	MD	57	Clinical Non-Admin	24	10	0	45	58	26	34	163	NPND
49	F	H/L	DV	48	Clinical/FS Non-Admin/Ed/Research	20	4	0	40	60	28	32	160	NPND
50	F	W	MD	49	Education	27	10	0	46	63	28	44	181	FPD
53	F	W	S	25	Clinical Non-Admin	2	2	4	57	58	42	50	207	FPD
54	F	W	MD	65	Clinical Non-Admin	39	29	52	47	59	42	40	188	CPND
57	F	B/AA	DV	35	Clinical Non-Admin	5	4	5	57	58	17	43	175	CPD
63	F	A/PI	MD	42	Clinical Non-Admin/Community/PH	2	2	5	61	65	39	52	217	CPD
64	F	W	MD	29	Clinical Non-Admin	5	4	0	59	56	40	32	187	NPD
65	F	H/L	MD	30	Clinical/FS Admin/PP	5	2	0	55	57	25	33	170	CPD
66	F	W	MD	60	Clinical Non-Admin/PP	35	33	8	46	59	26	41	172	FPND
71	F	W	MD	32	PP	9	1	0	50	60	24	34	168	FPD
73	F	W	DV	42	Ed/PP	19	2	1	47	63	42	47	199	FPND
75	F	B/AA	MD	54	Community/PH	22	4	31	60	58	38	51	207	FPD
78	F	W	MD	32	Clinical Non-Admin	1	1	30	62	57	33	48	200	CPD
79	F	W	S	26	FS Admin	2	1	37	56	58	40	44	198	CPD
81	F	W	S	28	FS Admin/Community/PH	5	0	0	43	48	31	28	150	NPD
84	F	W	MD	44	Clinical Non-Admin	20	20	10	57	65	41	56	219	CPD
87	F	W	S	25	Other – Sports Performance	2	2	0	59	62	33	37	191	NPD
88	F	W	MD	52	Clinical Non-Admin/Ed/PP	32	6	1	42	62	32	51	187	FPND
90	F	W	MD	33	Clinical Admin	8	4	16	46	60	28	34	168	CPD
91	F	PNtA	MD	48	Other – Newly Registered	0	0	0	59	64	28	32	183	NPD
94	F	W	WD	69	Other – School Nutrition	45	12	6	42	59	32	42	175	FPND
100	F	W	MD	67	Community/PH	35	15	0	50	50	7	19	126	FPND
106	F	W	MD	46	FS Non-Admin/Community/PH/BI	13	10	0	50	51	25	33	159	FPD

Participant	Gender	Ethnicity	Marital Status	Age	Area of Practice	Years in Practice	Years Pos.	Weeks Prec.	Willingness Comp. Score	Satisfaction Comp. Score	Factors/Tools Comp. Score	Factors/Tools Support	Total Score	Preceptor Category
113	F	A/PI	MD	43	Clinical Non-Admin	6	6	5	62	63	29	48	202	CPD
118	F	A/PI	MD	49	Community/PH	22	19	0	41	55	30	40	166	NPD
119	F	B/AA	MD	50	FS Amin/Community/PH/Ed	9	6	0	37	52	12	23	124	NPND
122	F	W	MD	54	Clinical/FS Non-Admin/Community/PH/Ed/PP	23	3	10	58	59	40	51	208	CPD
123	F	W	MD	52	Clinical Non-Admin	18	16	6	60	61	29	48	198	FPD
124	F	W	MD	30	Clinical/FS Non-Admin/Ed	7	3	1	50	54	14	40	158	NPND
126	F	W	DV	57	Clinical Non-Admin	23	4	0	61	63	29	48	201	CPD
134	F	W	MD	41	PP	18	7	0	46	62	32	46	186	FPD
137	F	W	PNtA	--	Clinical Non-Admin	23	22	2	52	53	17	35	157	CPND
138	F	W	MD	50	Community/PH/Ed/PP/Research	20	5	0	49	57	39	34	179	NPND
141	F	W	MD	--	Clinical Non-Admin	6	2	0	56	53	39	42	190	CPD
145	F	W	MD	50	Clinical Non-Admin	5	5	0	38	66	28	44	176	NPND
148	F	W	S	42	Clinical Non-Admin	18	8	8	56	62	39	46	203	CPD
150	F	W	MD	43	Clinical Non-Admin/BI	18	3	0	41	50	28	32	151	NPD
154	F	W	S	27	Clinical Non-Admin	0	0	0	52	61	16	45	174	NPD
155	F	W	S	40	Ed	17	3	12	64	67	47	56	234	FPD
159	F	W	MD	35	Clinical Non-Admin	11	9	8	56	58	30	44	188	CPD
169	F	W	DV	65	Clinical Admin	30	8	0	47	63	30	39	179	FPD
170	F	W	MD	46	Clinical/FS Non-Admin	21	10	0	42	57	21	44	164	FPND
171	F	W	MD	55	Ed	32	21	0	51	64	28	37	180	FPND
172	M	W	MD	66	FS Admin	40	8	36	49	57	31	46	183	FPND
174	F	W	S	28	PP	5	2	4	57	63	31	33	184	CPD
176	F	W	MD	30	Clinical Non-Admin	8	6	0	50	50	32	38	170	FPD
179	F	W	S	31	Other – Digital Health	5	1	0	41	51	28	32	152	NPND
182	F	W	MD	55	Community/PH	32	10	52	50	56	29	45	180	FPD
184	F	W	MD	31	Clinical Non-Admin	5	3	2	41	55	40	40	176	FPD

Participant	Gender	Ethnicity	Marital Status	Age	Area of Practice	Years in Practice	Years Pos.	Weeks Prec.	Willingness Comp. Score	Satisfaction Comp. Score	Factors/Tools Comp. Score	Factors/Tools Support	Total Score	Preceptor Category
186	F	W	S	29	Clinical Non-Admin/Community/PH	6	3	0	51	59	20	34	164	NPND
189	F	W	S	30	Clinical Non-Admin	7	1	2	55	57	34	38	184	FPD
199	F	W	MD	33	Clinical Non-Admin/Community/PH/PP	8	2	0	53	49	16	34	152	NPND
205	F	H/L	MD	30	Community/PH/Clinical Non-Admin	4	2	10	57	59	38	52	206	FPD
207	F	W	MD	57	Clinical Non-Admin	30	5	8	41	40	18	22	121	FPND
212	F	W	S	28	Community/PH/Ed	5	1	0	53	59	45	44	201	NPND
213	F	W	MD	54	Clinical Non-Admin	30	5	3	53	65	28	40	186	FPND
214	F	W	DP	37	Clinical Non-Admin/Community/PH/Ed	2	1	3	54	60	43	42	199	FPD
216	F	H/L	MD	32	Community/PH/Ed	6	6	0	51	56	18	28	153	FPD
220	F	PNtA	MD	53	Clinical/FS Non-Admin/Community/PH/Ed	30	16	0	52	58	28	23	161	FPD
221	F	W	MD	52	Community/PH	3	1	2	57	59	32	49	197	FPD

Note. Gender: F = female, M = male; Ethnicity: W = white, H/L = Hispanic/Latino, B/AA = black or African American, A/PI = Asian or Pacific Islander, O = other, PNtA = prefer not to answer; Marital Status: S = single, MD = married, DP = domestic partnership, DV = divorced, WD = widowed, PNtA = prefer not to answer; Area of Practice: FS = foodservice, PH = public health, Ed = education, PP = private practice, BI = business/industry; Preceptor Category: CPD = current preceptor desire to continue, CPND = current preceptor no desire to continue, FPD = former preceptor desire to precept again, FPND = former preceptor no desire to precept again, NPD = non-preceptor desire to precept, NPND = non-preceptor no desire to precept; willingness low score = 11, high score 77; satisfaction low score = 11, high score = 77; factors/tools low score = 7, high score = 49; factors/supports low score = 8, high score = 56; total score low score = 37, high score = 259.

Appendix O

Examples of Potential ACEND Competencies for Supervised Practice in Higher Education

Domain 1. Scientific and Evidence Base of Practice: Integration of scientific information and translation of research into practice.		
Competency		Example of Task in Higher Ed.
CRDN1.1	Select indicators of program quality and/or customer service and measure achievement of objects	Aid with ACEND annual program review; evaluation of student feedback; initiate and evaluate annual graduate and employer surveys, etc.
CRDN1.2	Apply evidence-based guidelines, systematic reviews and scientific literature	Guide students in research; present poster sessions at annual conferences.
CRDN1.3	Justify programs, products, services and care using appropriate evidence or data	
CRDN1.4	Evaluate emerging research for application in nutrition and dietetics practice.	
CRDN1.5	Conduct projects using appropriate research methods, ethical procedures and data analysis	
CRDN1.6	Incorporate critical-thinking skills in overall practice.	
Domain 2. Professional Practice Expectations: Beliefs, values, attitudes and behaviors for the professional dietitian nutritionist level of practice.		
CRDN2.2	Demonstrate professional writing skills in preparing professional communications.	Develop educational lectures and course modules; guide students in research; present poster sessions at annual conferences.
CRDN2.3	Demonstrate active participation, teamwork and contributions in group settings.	Take part in program director meetings; aid in committees such as e-learning or wellness; guide students in research; present poster sessions at annual conferences.
CRDN2.7	Apply leadership skills to achieve desired outcomes.	Develop educational lectures and course modules; guide students in research; present poster sessions at annual conferences.
CRDN2.9	Participate in professional and community organizations.	Attend program advisory board meetings, regional or state annual nutrition and dietetics meeting, FNCE if able.

CRDN2.10	Demonstrate professional attributes in all areas of practice.	Member of committees; interaction with students regarding course modules; guide students in research; present poster sessions at annual conferences.
CRDN2.11	Show cultural competence/sensitivity in interactions with clients, colleagues and staff.	Develop course modules and lead discussion regarding diversity, equity, and inclusion; interact with all students, staff, faculty, and administration in a professional manner through email, spoken word, committee work, and course leadership.
CRDN2.12	Perform self-assessment and develop goals for self-improvement throughout the program.	Utilize student, preceptor, and faculty feedback to develop actionable goals for improvement as evidenced by a submitted final reflection paper.
CRDN2.13	Prepare a plan for professional development according to Commission on Dietetic Registration guidelines.	Develop a mock professional development portfolio.
CRDN2.14	Demonstrate advocacy on local, state, or national legislative and regulatory issues or policies impacting the nutrition and dietetics profession.	Lead students to participate in activities such as "A Day at the Capitol" or in establishing a "National Nutrition Month" with the city's mayor.
CRDN2.15	Practice and/or role play mentoring and precepting others.	Lead the class in mock mentoring and preceptorship activities.
Domain 3. Clinical and Customer Services: Development and delivery of information, products and services to individuals, groups and populations.		
CRDN3.4	Design, implement and evaluate presentations to a target audience.	Develop and deliver course modules and presentations, create a plan for "how I could do this better next time" based off of student feedback.
CRDN3.5	Develop nutrition education materials that are culturally and age appropriate and designed for the literacy level of the audience.	Provide education materials (table tents, brochures, handouts, etc.) for the college community for an event such as National Nutrition Month, heart health, diabetes awareness, etc.

CRDN3.7	Develop and deliver products, programs or services that promote consumer health, wellness and lifestyle management.	Work with the student council or wellness committee to present information on wellness.
CRDN3.8	Deliver respectful, science-based answers to client questions concerning emerging trends.	Work with students in a dedicated module and continuously through the course to debunk fad diets or supplement claims.
Domain 4. Practice Management and Use of Resources: Strategic application of principles of management and systems in the provision of services to individuals and organizations.		
CRDN4.1	Participate in management of human resources.	Attend department-specific and program-director meetings.
CRDN4.4	Apply current nutrition informatics to develop, store, retrieve and disseminate information and data.	Provide education materials (table tents, brochures, handouts, etc.) for the college community for an event such as National Nutrition Month, heart health, diabetes awareness, etc.; develop educational lectures and course modules; guide students in research; present poster sessions at annual conferences.
CRDN4.6	Propose and use procedures as appropriate to the practice setting to promote sustainability, reduce waste and protect the environment.	Provide electronic/digital information as appropriate to reduce the use of printing; attend safety and sustainability meetings as appropriate.
CRDN4.7	Conduct feasibility studies for products, programs or services with consideration of costs and benefits.	Aid with ACEND annual program review; evaluation of student feedback; initiate and evaluate annual graduate and employer surveys, etc.
CRDN4.8	Develop a plan to provide or develop a product, program or service that includes a budget, staffing needs, equipment and supplies.	Develop a proposal for a new elective nutrition and dietetics course within the program; develop a proposal for student attendance at a district or state nutrition and dietetics meeting or FNCE if appropriate.

**Note.* FNCE = the Food and Nutrition Conference and Expo. Not all competencies are reflected in this table as not every competency is appropriate for this setting. This list is not meant to be all-encompassing, it is meant to serve as an example of activities that could potentially meet ACEND competencies.

Appendix P

Flexible Community Presentation Rubric with ACEND Competencies

Instructions: **Completed by preceptor.** Please provide your evaluation of the student's presentation. Review the evaluation with the student and return the form to them to submit to their instructor. This course requires a total of 4 15-minute community nutrition presentations on topics of preceptor and student's choosing. If 2 30-minute presentations align better with the facility's needs, please communicate this with the course instructor on this grading rubric. Please meet with the student early in the rotation to determine a plan to meet this requirement.

Check the appropriate box to reflect which presentation is being graded.			
#1	#2	#3	#4

Preceptor's Email Address:
Preceptor's Name:
Student's Name:
Date of Evaluation:
Presentation Topic:
Target Audience:

	≤6 Points	7 Points	8 Points	9-10 Points	Row Total
Organization	Cannot understand presentation – no sequence of information	Difficult to follow presentation – student jumps around	Information in logical sequence	Information presented in logical, interesting sequence	
Subject Knowledge	Does not have a grasp of the information. Cannot answer questions about subject	Uncomfortable with information. Able to answer only rudimentary questions	At ease with expected answers to questions but does not elaborate	Demonstrates full knowledge by answering all class questions with explanations and elaborations	
Appropriate for Target Audience	Used wording not appropriate to the target audience (too much jargon for lay population; oversimplified for	Some appropriate wording used for the target audience	Mostly appropriate wording used for the target audience	All wording used was appropriate for the target audience	

	professional population)				
Oral Presentation	Incorrectly pronounces terms and speaks too quietly	Mostly reading presentation, and incorrectly pronounces terms, difficult to hear	Pronounces most words correctly, somewhat difficult to hear	Pronounces all terms precisely, can be heard clearly	
Time	± 10 minutes too short or long	± 6-9 minutes too short or long	± 1-5 minutes too short or long	Perfect timing	
Overall Score for the Grade Book *(add all row totals)*					

MEASURED ACEND COMPETENCIES	**Poor/F**	**Satisfactory/C**	**Good/B**	**Excellent/A**
Student identified and used credible nutrition related sources for their presentation. CNDT 1.1: Access data, references, patient education materials, consumer and other information from credible sources.				
Student provided an effective nutrition presentation that was appropriate for the target audience. CNDT 2.3: Prepare and deliver sound food and nutrition presentations to a target audience.				
Student provided nutrition and lifestyle education to well populations.				

CNDT 3.3: Provide nutrition and lifestyle education to well populations.				
Student promoted health improvement to select audiences. CNDT 3.4: Promote health improvement, food safety, wellness and disease prevention for the general population.				
Student demonstrated appropriate nutrition education materials to select audiences. CNDT 3.5: Develop nutrition education materials for disease prevention and health improvement that are culturally and age appropriate and designed for the educational level of the audience.				